Decision Report

Application for Works Approval

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

Works Approval Number	W6738/2022/1
Applicant	Shire of Broome
File number	DER2022/000478
Premises	Broome Regional Resource Recovery Park Legal description Lot 550 on Deposited Plan 421448
Date of report	30 May 2023
Decision	Works approval granted

Jarrod Abrahams Digitally signed by Jarrod Abrahams Date: 2023.05.30 14:39:14 +08'00'

MANAGER WASTE INDUSTRIES
REGULATORY SERVICES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

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1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of the premises. As a result of this assessment, works approval W6738/2022/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

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

2.2 Application summary

On 13 September 2022, the Shire of Broome (the applicant / works approval holder) submitted an application for a works approval to the department under section 54 of the *Environmental Protection Act 1986* (EP Act).

The Shire of Broome's current waste management facility at Buckleys Road is nearing the end of its lifespan. To continue to provide waste management services to the community, the Shire proposes to build a new facility. The Broome Regional Resource Recovery Park (RRRP) will be a fully integrated, best practice waste management facility to provide a range of recovery and waste disposal services for the Shire's domestic and commercial communities.

The key infrastructure components at the proposed RRRP include a Community Recycling Centre (CRC), a Liquid Waste Facility (LWF) and a Class III Putrescible Landfill. This application relates to the construction and operation of the CRC and LWF. A Works approval application for the Class III Putrescible Landfill plans to be submitted at a later date.

The key infrastructure elements of this application includes:

- Community Recycling Centre:
  - Reuse Shop;
  - Education and Administration Area;
  - Green waste Drop Off and Mulch Collection;
  - Household Hazardous Waste Facility; and
  - Recycling Drop Off Area.
- Mixed Waste Drop Off Area;
- Stockpile and Processing Area;
- Supporting infrastructure (weighbridge, access roads, service areas, administration area, security (CCTV, fencing, etc);
- Liquid Waste Facility:
  - Sullage Facility:
    - Two concrete-lined receival ponds; and
    - One HDPE geomembrane lined evaporation pond.
  - Industrial Liquid Waste Facility:
    - Two HDPE geomembrane lined liquid waste ponds.
- Surface Water Management System:
  - A network of open channel drains diverting surface water run-off towards the RRRP's proposed surface water pond system;
  - A HDPE geomembrane lined surface water collection pond;
  - A surface water infiltration pond;

- A green waste retention pond with a 300 mm compacted subgrade layer; and
- A CRC retention pond with a 300 mm compacted subgrade layer.

- Tyre monocell area.

The premises is approximately 6 km north-east of Broome as shown in Figure 1 below.

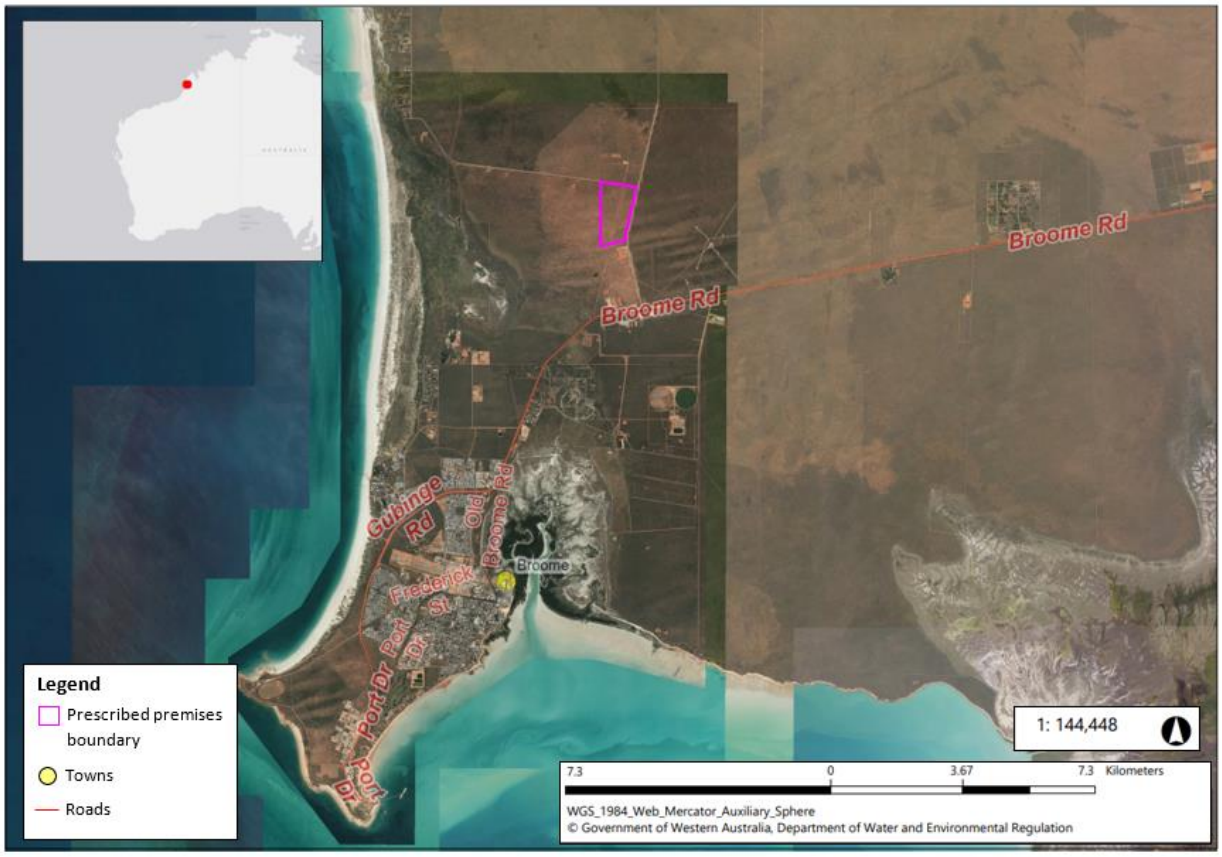


Figure 1: Regional Location

Table 1 lists the prescribed premises categories that have been applied for.

Table 1: Prescribed Premises Categories

Classification of Premises	Description	Approved Premises production or design capacity or throughput
Category 13	**Crushing of building material:** premises on which waste building or demolition material (for example, bricks, stones or concrete) is crushed or cleaned.	40,000 tonnes per year
Category 57	**Used tyre storage (general):** premises (other than premises within category 56) on which used tyres are stored.	100,000 tyres
Category 61	**Liquid waste facility:** premises on which liquid waste produced on other premises (other than sewerage waste) is stored, reprocessed, treated or irrigated.	10,500 tonnes per year

Classification of Premises	Description	Approved Premises production or design capacity or throughput
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.	10,000 tonnes per year
Category 62	**Solid waste depot:** premises on which waste is stored or sorted, pending final disposal or re-use, other than in the course of operating — (a) a refund point (as defined in the Waste Avoidance and Resource Recovery Act 2007 section 47C(1)) (a refund point); or (b) a facility or other place (an aggregation point) for the aggregation of containers that have been returned to refund points until those containers are accepted for processing or disposal.	100,000 tonnes per year
Category 63	**Class I inert landfill site:** premises (other than clean fill premises) on which waste of a type permitted for disposal for this category of prescribed premises, in accordance with the *Landfill Waste Classification and Waste Definitions 1996,* is accepted for burial.	5,000 tonnes per year
Category 70	**Screening etc. of material:** premises on which material extracted from the ground is screened, washed, crushed, ground, milled, sized or separated.	50,000 tonnes per year

The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6738/2022/1.

2.3 Legislative context

2.3.1 Part IV of the EP Act

The applicant has not referred the construction and operation of the CRC and LWF under Part IV of the EP Act, however, intends to refer the construction and operation of the Class III Putrescible Landfill under Part IV of the EP Act at a later stage.

2.3.2 Part V Division 2 of the EP Act

The applicant has applied for a clearing permit under Part V Division 2 of the EP Act. The clearing permit for the clearing of 79.85 ha of native vegetation is currently being assessed under CPS 9542-1. A determination on the clearing permit is currently pending awaiting responses from external consultation.

3. Location and siting

3.1 Siting context

The premises is in the Kimberley region of Western Australia, approximately 7 km north-east of the Town of Broome. The Kimberley bioregion is diverse and includes arid desert areas, gorges, sandy beaches, escarpments, rainforests, waterfalls, fast open plains, river valleys and cave systems. The region is characterised by distinct wet and dry seasons.

Within the region, there are over 100 Aboriginal communities of various population sizes, speaking over 40 different dialects. A third of the region's population is Aboriginal or Torres Strait Islander people.

Mining, agriculture, tourism, and construction are the main contributors to the region's economy. The resources sector is dominated by diamond, gem and precious stone mining.

3.2 Residential and sensitive receptors

The distances to residential and sensitive receptors are detailed in Table 2 and shown in Figure 2:

Table 2: Human receptors and distance from premises boundary

Human receptors	Distance from activity or prescribed premises
Residential premises	Approximately 3.5 km south of premises Approximately 3 km south-west of premises Approximately 3.7 km west of premises
Aboriginal communities	Goolarabooloo Community (Coconut Wells) - approximately 5.3 km north-west of premises
Broome Motocross Club	Approximately 150 m south of premises
Industrial premises	Approximately 1.2 km south of premises

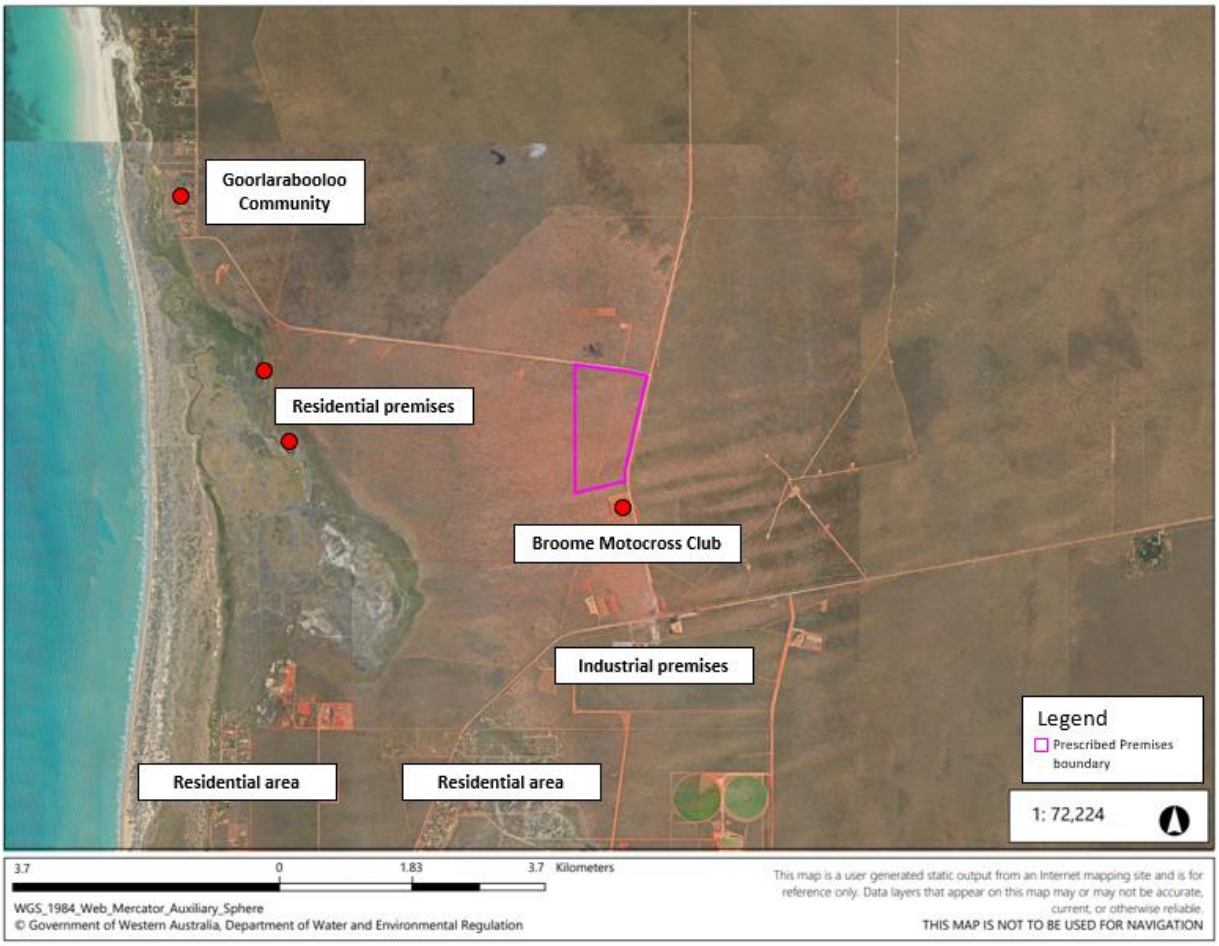


Figure 2: Residential and sensitive receptors in relation to the prescribed premises

3.3 Specified ecosystems and ecological receptors

Specified ecosystems are areas of high conservation value and special significance that may be impacted as a result of activities at, or emissions and discharges from, the premises. The description of specified ecosystems and distances from the premises are discussed in Table 3 and shown in Figure 3.

Table 3: Environmental values

Specified ecosystems and ecological receptors	Distance from activity or prescribed premises
Flora and fauna	
Yawuru Birragun Conservation Park	Directly adjacent on the western boundary of the premises.
Threatened and Priority Ecological Communities (TEC / PEC) Priority 1 Ecological Community – Relict dune system dominated by extensive stands of *Minyjurra Sersalisia sericea*	Situated within the north-western corner of premises boundary.
Threatened Fauna – • *Numenius madagascariensis*	Found within 5 km of the premises.

Specified ecosystems and ecological receptors	Distance from activity or prescribed premises
(eastern curlew) • *Numenius minutus* (little curlew) • *Pluvialis fulva* (pacific golden plover) • *Macrotis lagotis* (Bilby) • *Mormopterus cobourgianus* (north-western free-tailed bat) • *Mesembriomys macrurus* (golden-backed tree-rat)	
Groundwater	
Underlying groundwater	Between 16 and 34 mBGL.
Rights in Water and Irrigation Act 1914 (RIWI Act) Proclaimed Groundwater – Broome Groundwater Area	The premises sites within the Broome Groundwater Area.
Public Drinking Water Source Area – Priority 1 – Broome Water Reserve	The Broome Water Reserve is approximately 100 m east of the premises boundary. The closest well head protection zone is located approximately 1.2 km east of the premises boundary.
Surface water bodies	
Buckely's Plain	Approximately 3 km west of premises boundary.
Roebuck Bay / Dampier Creek – Important Wetlands of Western Australia	Approximately 4.2 km south of premises boundary.
Indian Ocean	Approximately 5.5 km west of the premises boundary

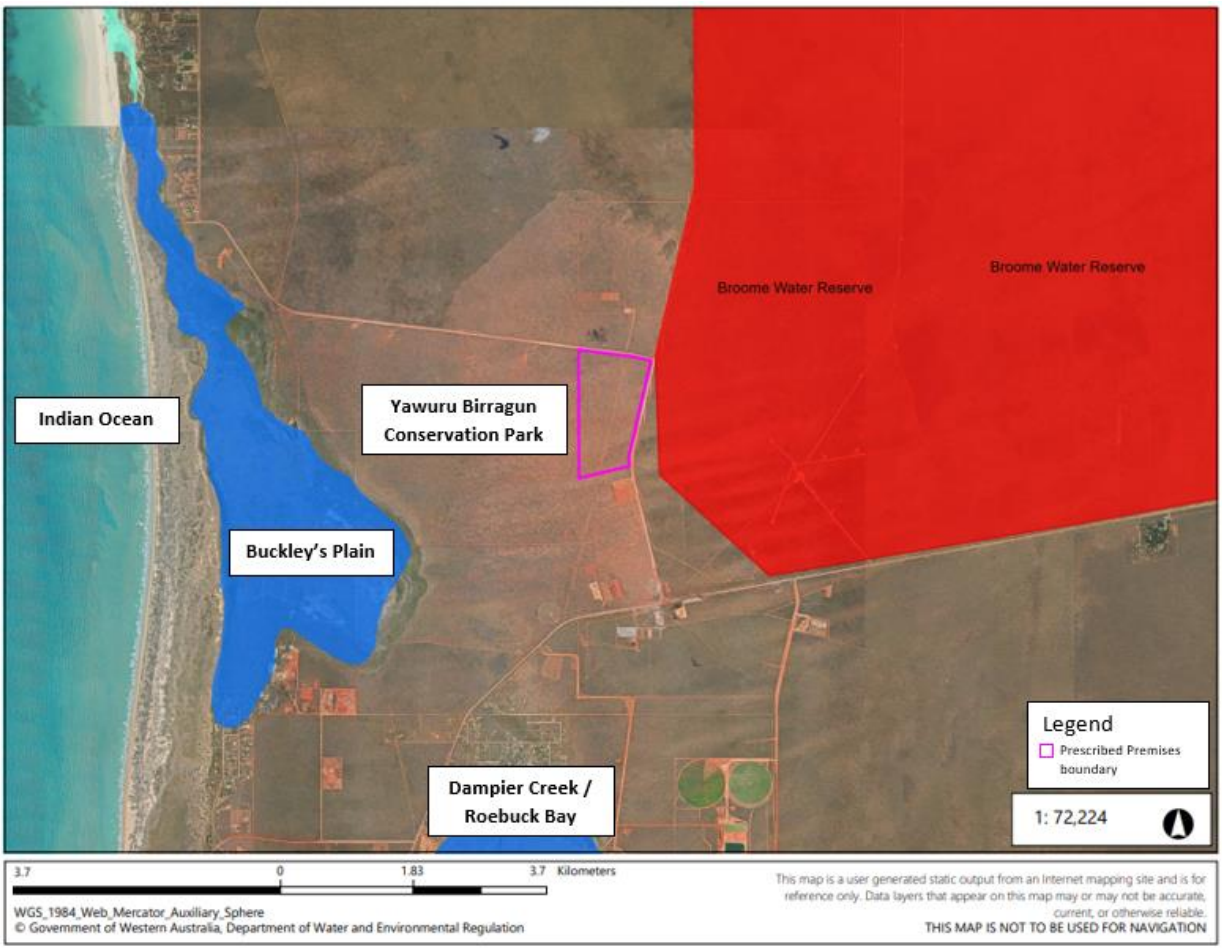


Figure 3: Ecological receptors in relation to the prescribed premises

3.4 Environmental Siting

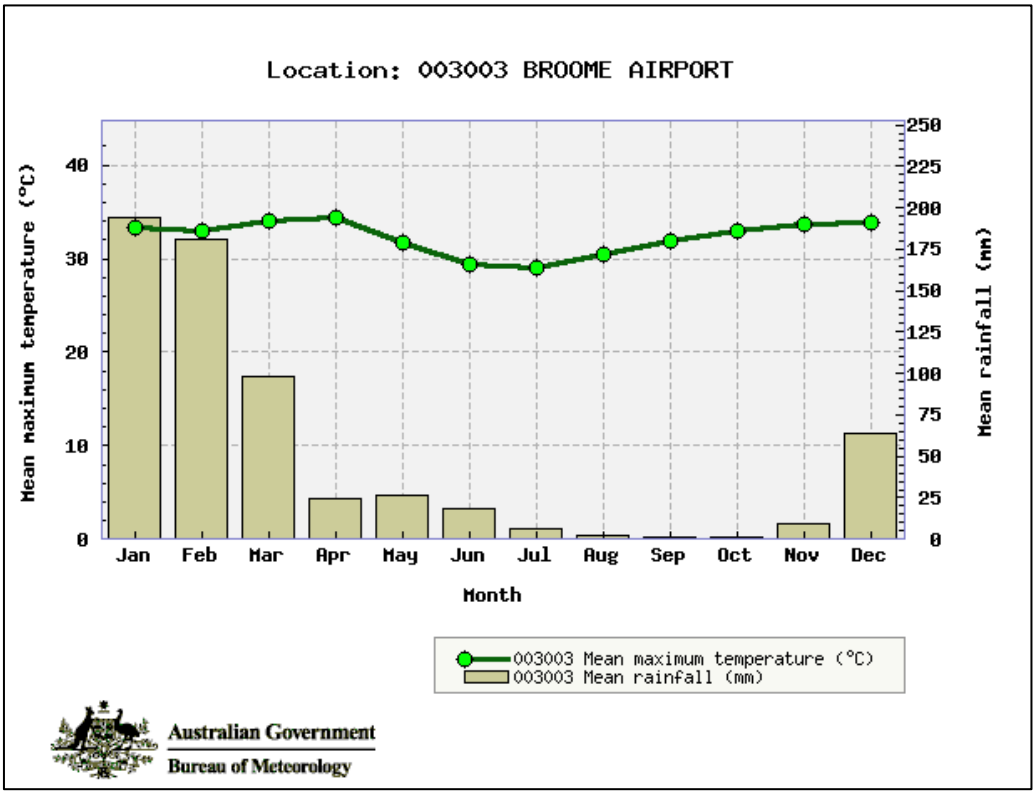
3.4.1 Climate and rainfall

The climate at Broome has a distinct 'wet' season from December to March and a 'dry' season for the remainder of the year. Rainfall during the wet season is variable as it is associated with thunderstorms, tropical lows and cyclones. These wet season weather systems generate approximately three-quarters of the average annual rainfall.

The Bureau of Meteorology (BoM) data for the Broome Airport weather station (Station No. 003003) shows that the area in the vicinity of the premises has an average annual rainfall of 623.5 mm (based on data from 1939 to 2022), with the majority of the rainfall received between December and March. Rainfall averages are dominated by seasonal cyclones which affect the region between November to April.

The average annual maximum temperature is 32.3°C and the average minimum temperature is 21.3°C. The monthly mean rainfall and maximum temperature is shown on Figure 4.

Future climate projections for the Kimberley predict that the annual temperature are set to increase by 0.6-1.3°C compared to current conditions by 2030 and by 1.3-5.1°C by 2090. Changes in rainfall will be small compared to the current natural variability, and there is generally low confidence in projected rainfall changes. While the median rainfall will decline by 8-18% in the comparatively dry winter and spring months, unchanged or slightly increased summer rainfall means the annual rainfall changes will be 1% or less by 2090 compared to current conditions.

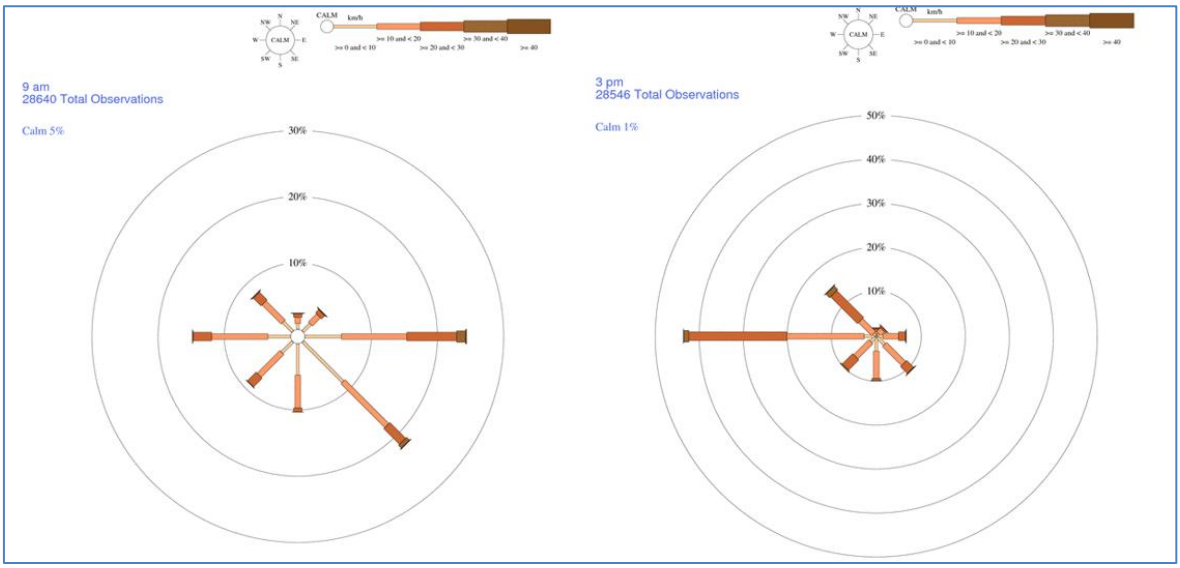


Source: BoM (Station No. 003003)

Figure 4: Rainfall and maximum temperature Broome Airport (1939-2022)

3.4.2 Wind direction and strength

Based on the climate data for the Broome Airport station (1939-2022), the prevailing wind is easterly to south-easterly in the morning to westerly in the afternoon. This is depicted in the wind roses shown in Figure 5.



Source: BoM (Station No. 003003)

Figure 5: Wind direction and strength at Broome Airport at 9am (left) and 3pm (right)

3.4.3 Topography

A topographic survey was undertaken by RM Surveys at the premises on the 28 October 2019 using a combination of traditional global positioning system (GPS) survey and aerial capture. During this survey, it was observed that the elevation ranged from 20.5m AHD to 38.5m AHD at the premises. The topography of the premises is shown in Figure 6.

Figure 6: Topography of the premises

3.4.4 Regional geology

The premises lies within the Canning Basin. The Canning Basin is the largest sedimentary basin in WA. Superficial sands and pindan soils of Quaternary age unconformably overlie the Broome Sandstone of Cretaceous age. The Broome Sandstone comprises fine- to coarse grained sandstone with minor beds of pebble conglomerate, grey siltstone and claystone. The Broome Sandstone outcrops over the entire area and ranges in thickness from less than 5 m to about 300 m.

The Broome Sandstone conformably overlies the Jarlemai Siltstone of Late Jurassic age, which in turn, overlies the Alexander Formation (a fine- to coarse-grained sandstone with interbedded siltstone and shale), and subsequently the Wallal Sandstone of early to late Jurassic age (also a fine- to coarse-grained sandstone).

These sediments overlie an eroded, folded sequence of sediments of Permian age. Together, they form the northern margin of the Canning Basin and lie within what is known as the Fitzroy Trough (DoW, 2012).

3.4.5 Soils

Talis undertook an intrusive soil investigation across the premises in November 2020. Based on the findings of the soil investigation, the generalised soil profile was recorded to be:

- Silty clayey SAND - pale red sand, fine to medium grained, subangular with trace gravel probably of aeolian origin to between 10-15 m bgl (Pindan Plain Soil); overlying
- SANDSTONE - pale yellow to white, very fine to medium grained, variably cemented, bedded to weakly bedded sandstone probably of shallow marine or tidal origin (Broome Sandstone).

3.4.6 Vegetation

Vegetation within and surrounding the premises boundary is *Corymbia greeniana* low open woodland with *Acacia eriopoda* and *Bauhinia cunninghamii* tall open shrubland, over *Triodia schinzii* and *Triodia caelestialis* low sparse hummock grassland and *Chrysopogon pallidus* and *Sorghum plumosum* low sparse tussock grassland.

3.4.7 Hydrology

There are no permanent water bodies on the premises. The nearest surface water bodies are Buckley's Plain (land subject to inundation) approximately 3 km to the west south-west and Dampier Creek, approximately 4.2 km to the south. Further to the west is the Indian Ocean, which is approximately 5.5 km from the premises.

The land drains only after intense rainfall exceeds the infiltration capacity of sandy soils whereby water follows topography and is discharged through poorly defined broad drainage paths to the coastal plain mudflats and then ultimately to the Indian Ocean or through Roebuck Bay.

3.4.8 Hydrogeology

The Broome Sandstone aquifer is the main aquifer at Broome and provides the water supply for the town. It forms a large, unconfined aquifer system and contains a substantial groundwater resource. The Broome Sandstone aquifer is recharged by throughflow and rainfall (DoW, 2012). Groundwater tends to flow to the west, discharging over a saline interface near the Indian Ocean. Where groundwater is shallow, the Broome Sandstone aquifer supports groundwater-dependent ecosystems.

The groundwater levels in the Broome Sandstone aquifer are strongly correlated to infrequent consecutive high rainfall years. These events raise the water levels in the aquifer and offset the drawdown impacts for a number of years (DoW, 2016).

Seven groundwater monitoring bores were installed in October 2020 as part of site investigations undertaken at the premises. Monitoring well locations are shown on Figure 7. All monitoring bores were installed within the unconfined Broome Sandstone aquifer.

Groundwater at the premises ranges from approximately 16 m to 32 m below ground level (mBGL). Groundwater flows to the south-west, toward the Indian Ocean. Hydraulic testing determined a groundwater seepage velocity beneath the premises as approximately 21 m/year. A modeled travel times for a potential contaminant plume were 72 years at the closest downgradient production bore, and greater than 100 years for Buckley's Plain (144 years) and the closest single downgradient residential receptor (177 years).

Baseline data from groundwater monitoring indicates that groundwater is fresh with salinity ranging from 128 mg/L to 990 mg/L. A saltwater wedge exists beneath the overlying fresh groundwater which has been assessed by the Water Corporation to be over 150 mBGL. Slightly elevated concentrations of metals (calcium, copper, nickel and zinc) were reported during baseline monitoring, indicative of regional groundwater quality.

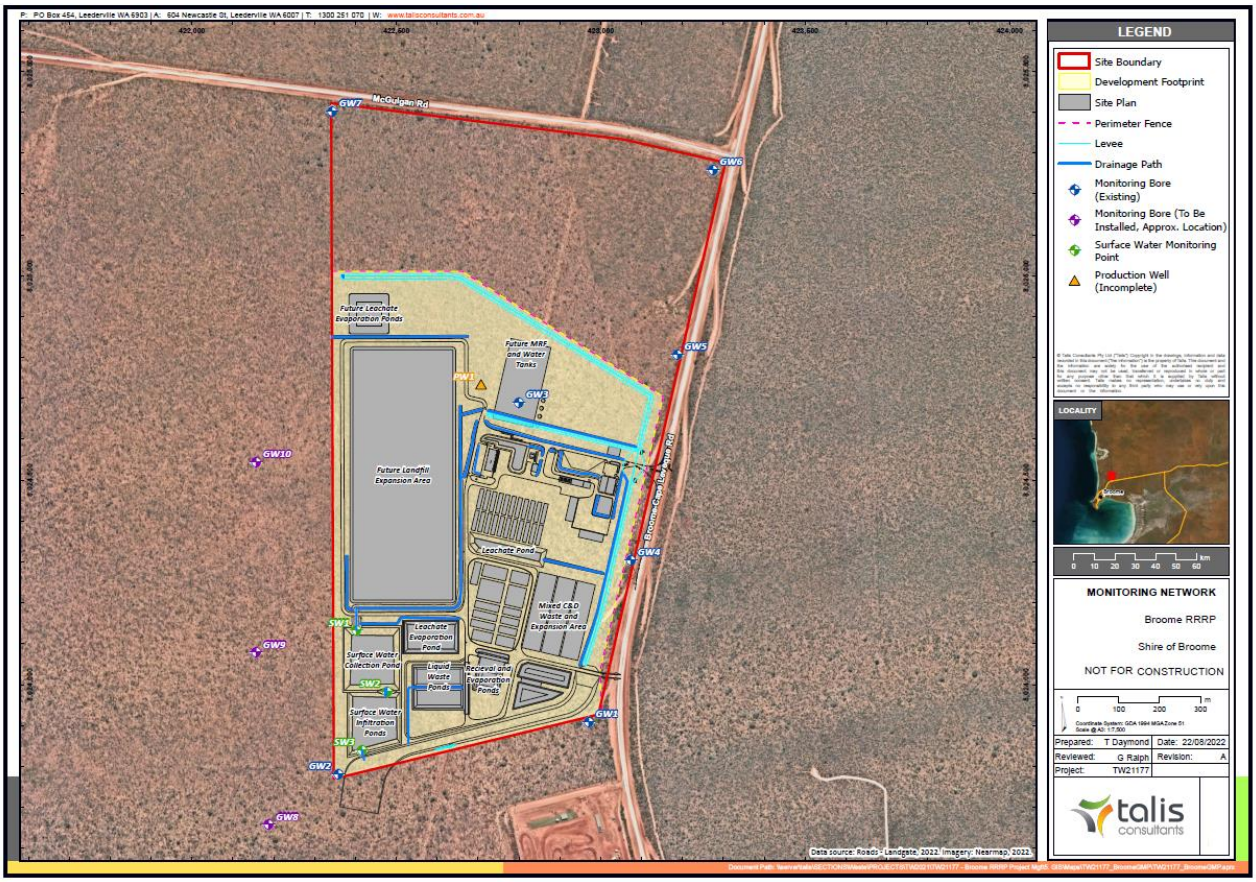


Figure 7: Groundwater monitoring bore locations

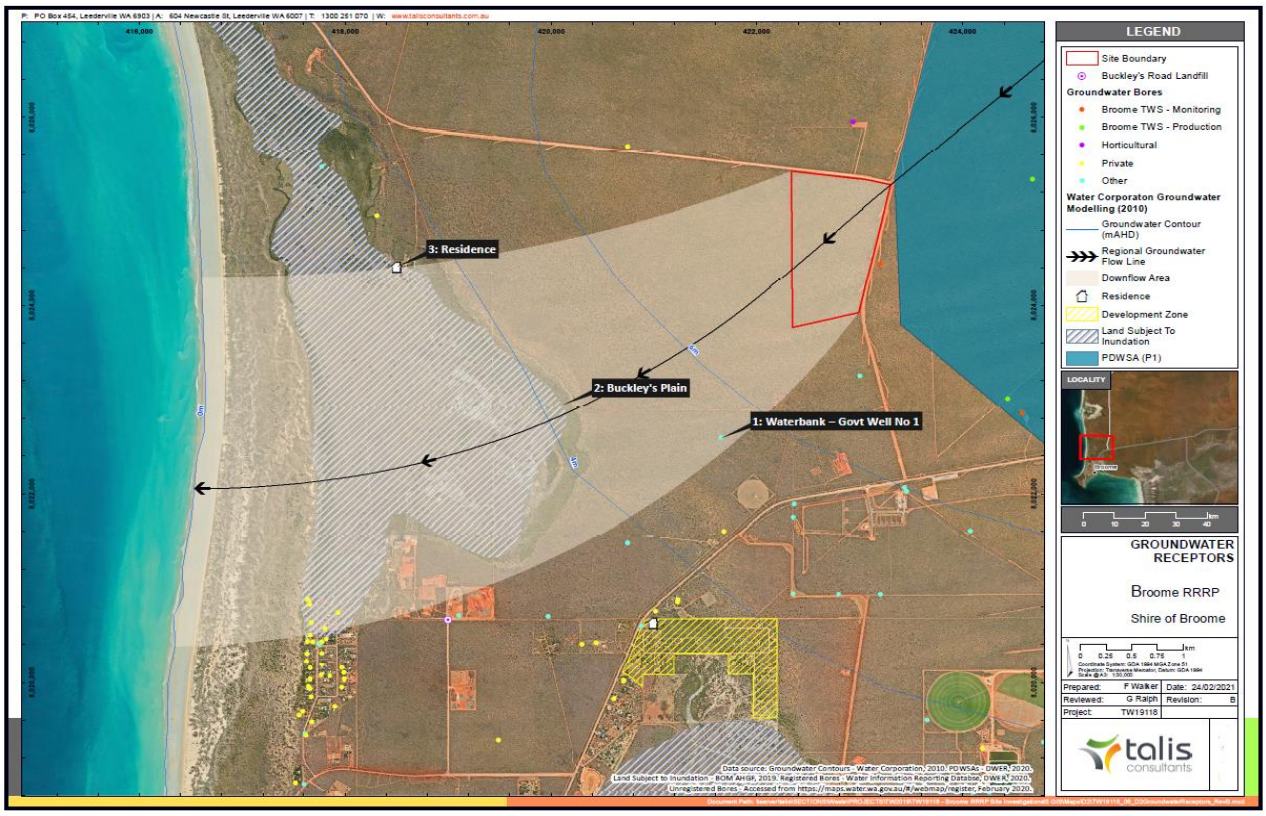


Figure 8: Groundwater flow and receptor

4. Social and cultural values

4.1 Aboriginal Heritage

The premises is located on Yawuru country. Aboriginal people have always lived in and around the Broome area, hence the region has very high cultural values. Yawuru country spans over 5300 km^2 of subtropical coastal regions and inland savannah country. It includes the town of Broome, Roebuck Plains Station and the Nagalugun Roebuck Bay Marine Park.

A heritage survey was conducted across the premises in late February and early March 2020 by Nyamba Buru Yawuru Pty Ltd and the Kimberley Land Council (KLC). The report's findings as submitted as part of the application package concluded that the survey team did not identify anything of cultural heritage.

The premises is adjacent to the Yawuru Birragun Conservation Park. Yawuru Birragun Conservation Park is jointly managed by the native title holders Nyamba Buru Yawuru and the Department of Biodiversity, Conservation and Attractions (DBCA). The conservation estate holds ongoing cultural values for the Yawuru people including for carrying out customary activities, to enjoy country, to use and gain respect for traditional ecological knowledge and the concepts of living cultural landscape.

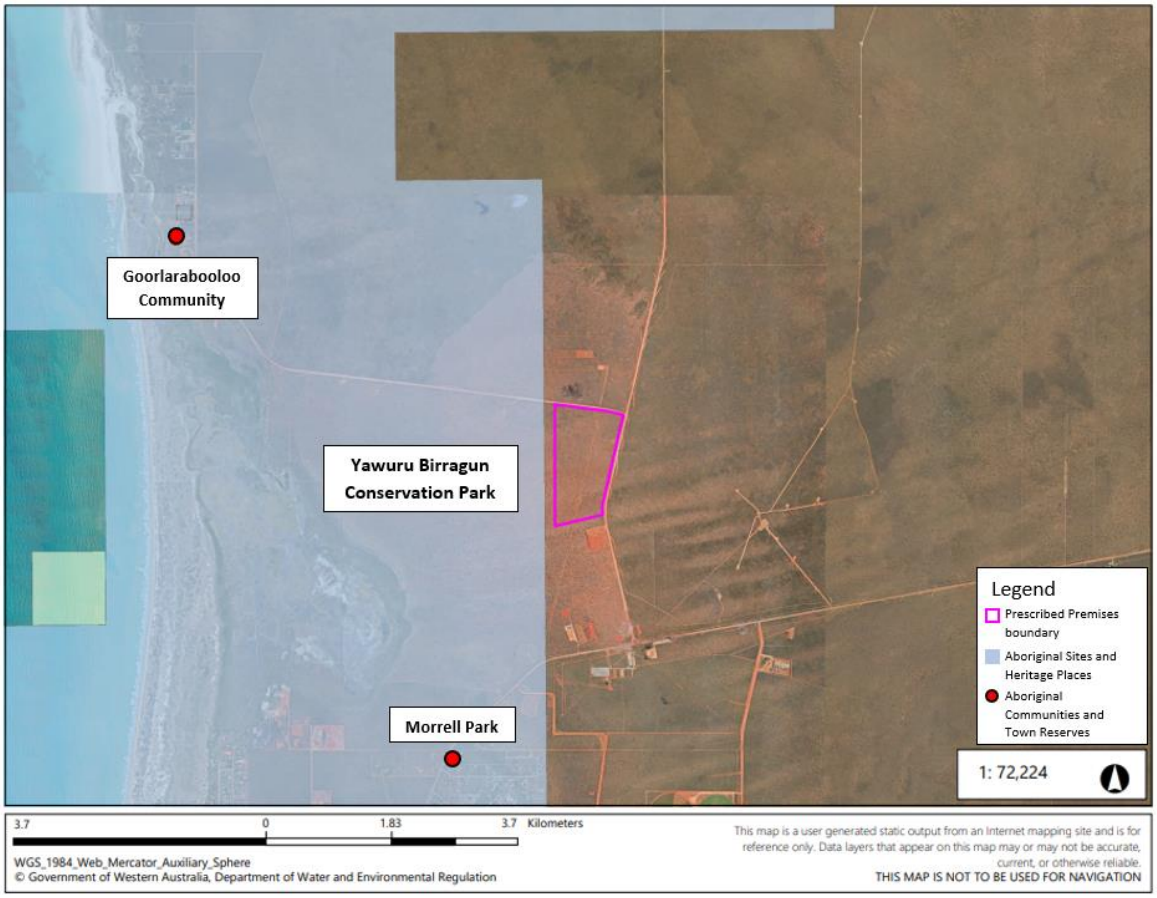


Figure 9: Significant Aboriginal Sites

4.2 Native Title and European Heritage

Native Title does not exist over this premises. No heritage sites have been found to be located within the premises boundary.

5. Operational Overview

5.1 Operations summary

The Broome RRRP will be open to commercial and residential entities for waste drop off and disposal.

At the entrance of the site, all domestic vehicles will be directed left to the Community Recycling Area before reaching the weighbridge and gatehouse, after which they can proceed to the Mixed Waste Drop off facility to dispose of general waste. All commercial vehicles entering the site will be directed directly to the weighbridge/gatehouse once they have entered the facility. These vehicles will be directed to the appropriate stockpiling area by the weighbridge operator.

The operational hours of the facility will be:

- Monday to Saturday 7:30 am to 3:30 pm;
- Sunday 8:00 am to 2:00 pm; and
- Closed Christmas Day and Good Friday.

A map of the facility is presented below in Figure 10.

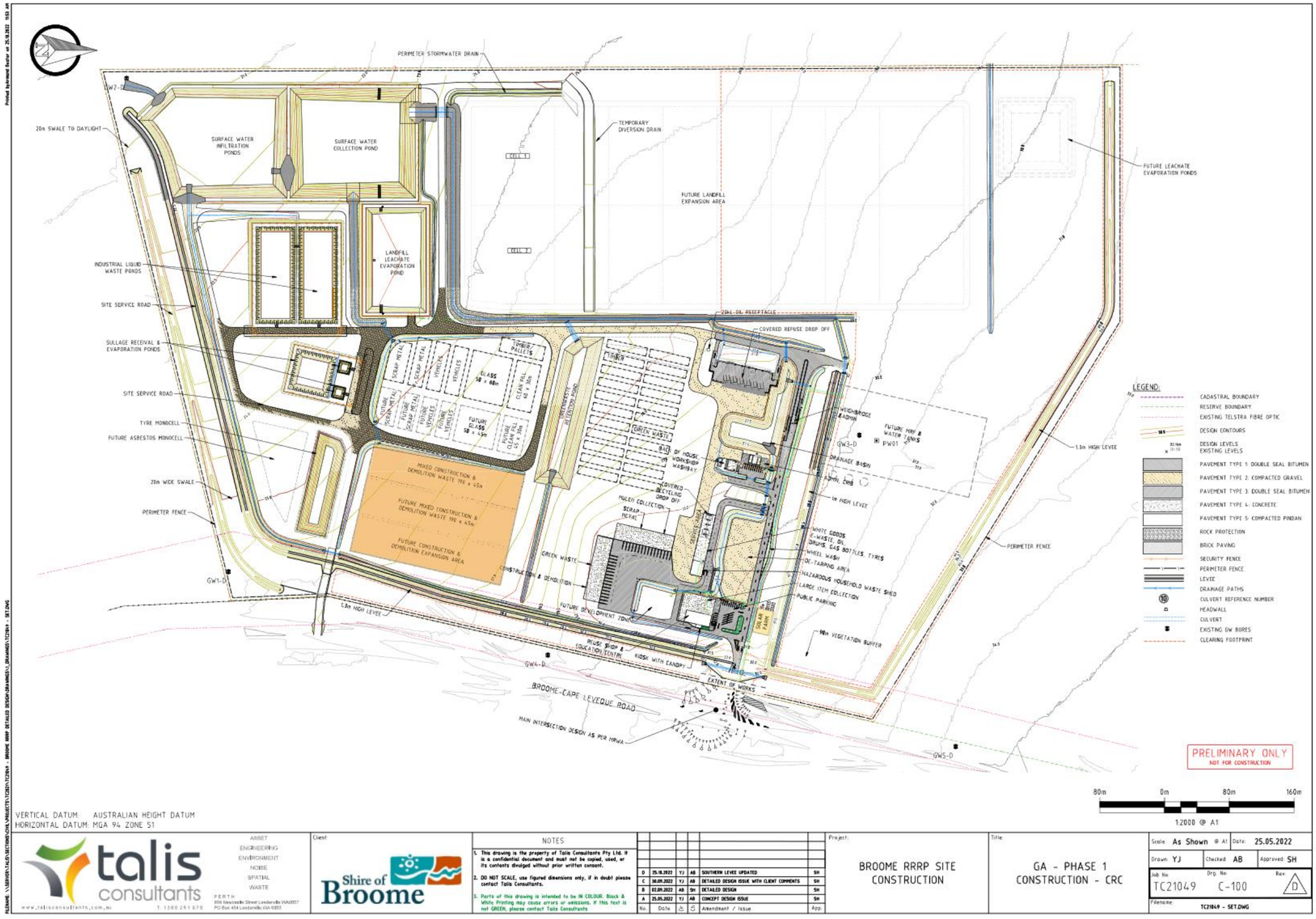


Figure 10: Proposed layout

5.1.1 Waste acceptance

Waste types proposed to be accepted onto the premises include:

- Clean fill
- Inert waste type 1 – uncontaminated fill, construction and demolition waste (C&D waste), glass
- Inert waste type 2 – tyres
- Putrescible wastes – green waste, mattresses, cardboard, timber
- White goods and e-waste
- Scrap metal
- Light vehicles
- Household hazardous waste
    - Acids and alkalis;
    - Aerosol cans;
    - Batteries (car and household);
    - Engine coolants and glycols;
    - Fire extinguishers – non-halon (red) only;
    - Flammables;
    - Flares;
    - Fluorescent lamps and tubes (CFLs);
    - Gas Cylinders;
    - Household chemicals and cleaners;
    - Paint;
    - Pesticides/herbicides;
    - Poisons/toxics;
    - Pool chemicals;
    - Smoke detectors; and
    - Unknown chemicals (must be in sealed, chemical resistant containers).
- Liquid wastes – oil and grease, septage, industrial wash water, industrial waste treatment plant residues

5.2 Community Recycling Centre

The Community Recycling Centre (CRC) will incorporate the following key components:

- Community recycling area;
    - Reuse shop and education centre;
    - Green waste drop-off and mulch collection;
    - Household hazardous waste facility; and
    - Recycling drop-off area.

- Mixed waste drop-off facility;
- Stockpile and processing areas (and stockpiling expansion areas); and
- Supporting infrastructure:
    - Weighbridge;
    - Access roads and service areas;
    - Shire administration centre and workshop; and
    - Security (CCTV, fencing, etc.)

5.2.1 Green waste drop-off and mulch collection area

Green waste will be brought to the designated drop-off area within the CRC. The materials will be unloaded onto the low permeability hard standing area. This will provide the opportunity for visual inspections of the material by the Shire's supervising staff. Any minor contamination will be removed and disposed of in the landfill. If major contamination is detected the load will not be accepted, reloaded into the generator's vehicle and a fine / additional charge issued. If the generator cannot be identified, the material will be disposed to landfill if the contamination cannot be separated.

Green waste stockpiles will have a maximum width of 10m, height of 3m and length of 50m and will be kept as neat and tidy as practicable. Once stockpiles reach a sufficient size, the Site Supervisor will arrange for the green waste processing contractor to attend the site and commence with the mulching operations.

The mulched product will be stockpiled on-site and utilised for landscaping and / or rehabilitation purposes. In addition, the Shire encourages the use of this product by the Broome community and provides this material free-of-charge to the Shire residents.

A retention pond will be established to manage surface water run-off generated within the Green Waste Stockpile Area and the CRC Service Area. The green waste retention pond has been modelled to manage a 1-in-20-year storm event, 24-hr rainfall event within its designated catchment area.

5.2.2 Hazardous household waste facility

A Hazardous Household Waste (HHW) Facility will be developed at the CRC for the safe acceptance and storage of hazardous materials generated from households. The HHW Facility will consist of a shed, which will be enclosed, covered and lockable. Hazardous Household Storage receptacles are proposed to be self-bunded proprietary storage cabinets under a roof canopy and placed on a concrete hardstand.

All Hazardous Household receptacles will be designed to meet the applicable Australian Standards and the hazardous materials will be removed periodically by a private contractor and taken to a suitably licensed facility.

5.2.3 Recycling drop-off area

The Recycling Drop-Off Area for recyclables and bulk waste, including white goods, mattresses, e-waste and tyres, have been amalgamated into one laydown area, measuring 1,000m^2, with a small canopy over parts of the area to protect some materials from the elements. The purpose of the CRC will be to facilitate the temporary storage of these larger / bulk waste items (i.e. tyres, mattresses, scrap metal etc.) received from domestic customers prior to their transferal to the long-term storage areas (i.e. Tyre Monocell).

E-waste items will be stored in receptacles, collected periodically and transported to a Perth processing facility by a third-party contractor.

Fridges and freezers are stored on-site within a designated area. The Shire will engage a third-party contractor to degas the white goods prior to their placement within the scrap metal stockpile.

5.2.4 Mixed waste drop-off area

All light vehicles (domestics and commercial) with mixed waste will be directed to the Mixed Waste Drop Off Facility for safe disposal of their waste. The facility will be covered by a canopy and contain 12 reverse parking bays which align with 6 hook lift bins.

5.2.5 Stockpile and processing area

Stockpile and Processing Areas have been located south of the CRC area and will contain the back-of-house operations of the facility. Access to this area will be limited to commercial vehicles only, with the majority of users being heavy commercial vehicles and Shire's operators. Commercial customers will pass through the weighbridge to access the Stockpile and Processing Area.

Light vehicles are accepted onto the premises already de-polluted. Vehicles are stripped and periodically crushed and removed by a third-party contractor (minimum once a year).

5.3 Supporting infrastructure

5.3.1 Surface water management facility

To manage the potential for flooding and surface water flows within the premises the following surface water management measures will be established:

- A network of open channel drains diverting surface water run-off towards the RRRP's proposed surface water pond system;
- A surface water collection pond, which cover a total area of 21,800m^2 and will be lined with a HDPE geomembrane;
- A surface water infiltration pond, which cover a total area of 17,300m^2 and will be unlined with an uncompacted base to promote infiltration;
- A green waste retention pond, which cover a total area of 8,500m^2 and will consist of a 300mm compacted subgrade layer and overflow into the surface water storage pond during extreme rainfall events; and
- A CRC retention pond, which cover a total area of 4,600m^2 and will consist of a 300mm compacted subgrade layer and overflow into the surface water storage pond during extreme rainfall events.
- Levee bund will be established along the southern, eastern and northern boundary.

5.3.2 Fire management

Due to the risk of offsite bush fires and accidental fires within the facility, the premises will incorporate a fire management system using the production bore, water storage tanks and fire hydrants.

Any potential firewater runoff will be directed in a south-west direction toward the green waste retention pond. The location and layout of the firefighting equipment and systems will be finalised during the detailed design phase of the project.

5.4 Liquid Waste Facility

The key new infrastructure elements for the LWF will include:

- Sullage Facility:
    - Two concrete-lined receival ponds, which will cover a total area of approximately 450m^2 (225m^2 per pond); and
    - One evaporation pond, which covers a total area of approximately 2,500m^2 and will be lined with a HDPE geomembrane;
- Industrial Liquid Waste Facility:
    - Two liquid waste ponds, which cover a total area of 11,305m^2 (5,653m^2 per pond) and will be lined with a HDPE geomembrane.

The sullage facility is intended to accept septage, sludges, and grease traps, while the industrial waste facility will accept other commercial liquid waste streams such as industrial wash-waters and waste oils. Both facilities will be located in the southern portion of the site. Each facility will be fully enclosed by a fence and have its own access point.

5.5 Class I Landfill cells

5.5.1 Tyre monocell

A tyre monocell will cater for the acceptance and disposal of tyres in a dedicated area. The tyre monocell area will consist of a series of excavated trenches with the first monocell covering an approximate area of 1,750m² (35m x 50m) and a maximum depth of 4m. The monocell trench extension will be constructed in stages as waste inputs dictate, with progressive restoration and rehabilitation of the completed areas with soil sourced from the new excavation area. Based on the average historic end of life tyre annual waste generation, the proposed full monocell extent of approximately 4,200m^2 (35m x 121m) is expected to cater for about 20-25 years of capacity.

Each sub-cell within the monocell will be filled with 1,000 whole stacked tyres or the equivalent baled tyres. Each cell will be 2m in height and separated with 300mm thick soil separation layer. The depth of the monocell allows for two 2m thick layers of whole tyres. The monocell will be progressively filled, and once filling of a particular section is complete, the monocell will be progressively covered with 1,000mm thick layer of restoration soils. This progressive covering during operations and at the conclusion of operations is intended to minimise surface water ingress and reduce the risk of fire and vermin and their potential impacts to monocell operations.

The surface of the cover material will be sloped to shed surface water run-off. To minimise stormwater ingress via overland flow while the monocell is operational, an edge bund will be constructed around the perimeter of the exposed trench to assist in surface water management with a drive-over bund placed along the entrance to the access ramp.

6. Risk assessment

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

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

6.1 Emissions and controls

The key emissions and associated actual or likely pathway during premises construction and

operation which have been considered in this decision report are detailed in Table 4 below. Table 4 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

Table 4: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction – Stage 1			
Dust	Vehicle movements on unsealed surfaces, earthworks, construction and installation of site infrastructure	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; • Water cart to be used as necessary; • All waste loads to be covered during transport to and from site; • All roads within the CRC will be sealed and maintained; and • Waste stockpiles/loads may be wet down prior to handling and/or windy conditions.
Noise	Vehicle movements on unsealed surfaces, earthworks, construction and installation of site infrastructure	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.
Litter	Construction and installation of site infrastructure	Air / windborne pathway	• Waste loads entering and leaving site will be covered; • A perimeter fence will be installed and regularly inspected; and • Any litter generated around and immediately outside the site will be collected on a regular basis.

Emission	Sources	Potential pathways	Proposed controls
Operation			
Category 13: Crushing of building material			
Dust	Screening, crushing, unloading, loading and storage of material Vehicle movements	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; • Water cart to be used as necessary; • All waste loads to be covered during transport to and from site; • Waste stockpiles/loads may be wet down prior to handling and/or windy conditions; and • An Asbestos Management Plan and C&D Sampling Plan have been prepared.
Noise	Screening, crushing, unloading, loading and storage of material Vehicle movements	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.
Asbestos fibres	Acceptance, screening, crushing, unloading, loading and storage of C&D material contaminated with asbestos	Air / windborne pathway	• All C&D waste loads entering the site will be inspected at the weighbridge; • Contaminated C&D loads are not permitted for acceptance; • A site operator will be present during the unloading of C&D to inspect the

Emission	Sources	Potential pathways	Proposed controls
			material; • Asbestos if detected in C&D waste will be managed via the Asbestos Management Plan; and • A C&D Sampling Plan has been developed to outline the requirements and procedures to manage the risk of asbestos during the acceptance and processing of C&D waste.
Category 57: Used Tyre Storage			
Fire/smoke	Acceptance and storage of used tyres	Air / windborne pathway	• Tyre storage will comply with DFES Guidance Note: GN02 Bulk Storage of Rubber Tyres Including Shredded and Crumbed Tyres; and • Tyres will be transferred on a frequent basis (twice weekly) to the Tyre Monocell Area for disposal.
Category 61: Liquid Waste Facility			
Odour	Acceptance and storage of sullage, septage, industrial wastes and stormwater	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • A complaints register will be maintained; • LWF positioned in the southern section of the site; • Minimal disturbance of liquid waste during normal operations; • Odour levels across the site will be continuously monitored by staff and action taken.
Discharges of sullage/ septage/ industrial liquid wastes/ contaminated stormwater	Acceptance and storage of sullage, septage, industrial wastes and stormwater	Overland runoff Seepage through soil and to groundwater	• Sullage facility to be constructed with a 300mm thick compacted subgrade layer, 2mm HDPE double-textured geomembrane, protection geotextile and 150mm thick road base layer; • Industrial liquid waste facility to be constructed with a 300mm thick compacted subgrade layer and a 2mm HDPE double-textured geomembrane;

Emission	Sources	Potential pathways	Proposed controls
			• Concrete bund around each receival pond and crest of the evaporation pond to mitigate stormwater ingress; • Water balance shows that there are monthly periods in which the sullage pond is empty;
	Loss of containment through overtopping of ponds or liner failure	Infiltration into groundwater	• Concrete bund around each receival pond and crest of the evaporation pond to mitigate stormwater ingress; • Water balance shows that there are monthly periods in which the sullage pond is empty; • 500mm freeboard maintained on ponds; • Designed to withstand a 1:20 year, 24-hour storm event.
Category 61A: Solid Waste Facility (green waste)			
Odour	Acceptance, storage and mulching of green waste	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • All waste containing putrescible material will be serviced regularly; • Green waste stockpiles and green waste pond will be monitored and managed to ensure these areas do not generate excessive odour; • Areas will be cleaned regularly to ensure good housekeeping standards are maintained; • A complaints register will be maintained; and • Odour levels will be continuously monitored by staff and action taken, if required.
Noise	Acceptance, storage and mulching of green waste	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Waste acceptance and operation of equipment to be restricted to operational hours only;

Emission	Sources	Potential pathways	Proposed controls
			• Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.
Dust	Acceptance, storage and mulching of green waste	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; • Water cart to be used as necessary; • All waste loads to be covered during transport to and from site; and • Waste stockpiles/loads may be wet down prior to handling and/or windy conditions.
Weeds	Acceptance, storage and mulching of green waste	Air / windborne pathway	• Awareness of weed management through the site induction; • Vehicles entering/exiting the site are free of soil, mud, and vegetative material. • Use of wash down bay to remove any potential any potential introduced plants or seeds from vehicles and/or equipment; • Vehicles to adhere to established roads and tracks; • All green waste loads to be covered until unloading at the Green waste Processing Facility; • Regular monitoring of weeds to be undertaken by all site staff; and • Regular weed management methods to be undertaken via manual removal and/or by chemical application prior to flowering periods by a weed contractor.

Emission	Sources	Potential pathways	Proposed controls
Leachate	Acceptance, storage and mulching of green waste	Overland runoff and infiltration	• Surface water run-off from the green waste storage area will be directed to the green waste retention pond; • The green waste retention pond is constructed with a 300mm compacted subgrade; • The green waste retention pond will be constructed to have a 14 to 16 m separation distance from groundwater; • On OEMP will be developed to ensure the integrity of the green waste retention pond is maintained; • The green waste retention pond overflows into the HDPE lined surface water collection pond in larger rainfall events; and • Green waste is stored on a low-permeability hardstand.
Pests / vermin	Acceptance, storage and mulching of green waste	Biological pathway	• A perimeter fence will be installed, monitored and maintained on a regular basis. The fence will be 1.8 m in height with a floppy top of at least 600mm in circumference and an external skirt; • All waste loads to be covered during transport; • Any suspected or known shelters or breeding grounds for vermin will be eliminated; • Ensure that wildlife and vermin have limited opportunities to access food and water at the RRRP; • Daily operations will include monitoring for feral cats, foxes and wild dogs; • Should any feral animal or vermin issues be experienced, professional services will be utilised to implement appropriate control/eradication methods; and • Regular litter collections onsite and immediate surrounds as required.
Fire / smoke	Acceptance, storage and mulching of green waste	Air / windborne pathway	• Stockpiled green waste and fire risk to be managed in accordance with DFES Information Note – Bulk Green waste storage fires; • Stockpiles will be located away from ignition sources;

Emission	Sources	Potential pathways	Proposed controls
			• Fire extinguishers and hose reels to be located at strategic locations; • All fire suppression equipment will be maintained and services in accordance with manufacturers specifications; • Water tanks for fire suppression; • Water cart available; • All buildings to comply with DFES guidance Site Planning and Fire Appliance Specifications (DFES, 2015); • A firebreak will be established in accordance with a Bushfire Management Plan; • A Bushfire Management Plan to be developed for the site; • Site inductions to include fire risks and management measures; and • All staff to be adequately trained to use fire suppression equipment.
Contaminated stormwater / firewater	Acceptance, storage and mulching of green waste	Overland runoff and infiltration	• Firewater to be directed to the surface water management system; • Fire suppression water residues with the lined surface water pond will be removed and disposed of to an appropriately licensed facility; and • Surface water run-off from the green waste storage area will be directed to the green waste retention pond.
Category 61A: Solid Waste Facility (light vehicles)			
Noise and vibration	Stripping, crushing, unloading, loading and	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms;

Emission	Sources	Potential pathways	Proposed controls
	storage of end-of-life light vehicles Vehicle movements		• Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.
Dust	Stripping, crushing, unloading, loading and storage of end-of-life light vehicles Vehicle movements	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • All material handling will be confined to designated areas; • All equipment and machinery will be maintained in good working condition; and • Spray downs to be used as required.
Spills of hydrocarbons / liquids	Stripping, crushing, unloading, loading and storage of end-of-life light vehicles	Overland runoff and infiltration	• Cars to be depolluted prior to being accepted on site; • Cars to be stripped prior to crushing. Batteries, leads, light switches, components containing mercury, air bag cannisters, tyres and rubbish to be removed prior to crushing. • Processing and storage of end-of-life vehicles to be undertaken on a 600 m^2 concrete hardstand; • Crushing to be done within a designated bunded area; • Concrete hardstand to be sloped toward a sump containing an oil water separator; and • Crushed cars to be removed from the premises at a minimum of once per year.
Contaminated	Acceptance, storage and	Overland runoff and	• Cars to be depolluted prior to being accepted on site;

Emission	Sources	Potential pathways	Proposed controls
stormwater / firewater	processing of end-of-life vehicles	infiltration	• Cars to be stripped prior to crushing. Batteries, leads, light switches, components containing mercury, air bag cannisters, tyres and rubbish to be removed prior to crushing. • Processing and storage of end-of-life vehicles to be undertaken on a 600 m^2 concrete hardstand; • Crushing to be done within a designated bunded area; • Concrete hardstand to be sloped toward a sump containing an oil water separator; and • Water from oil water separator to be transferred directly onto a rock-armouring protected portion of Swale 14 which discharges into the Surface Water Collection Pond.
Fire / smoke	Acceptance, storage and processing of end-of-life vehicles	Air / windborne pathway	• Floc periodically swept off concrete pad and disposed of to landfill; • Cars to be depolluted prior to being accepted on site; • Cars to be stripped prior to crushing. Batteries, leads, light switches, components containing mercury, air bag cannisters, tyres and rubbish to be removed prior to crushing. • Processing and storage of end-of-life vehicles to be undertaken on a 600 m^2 concrete hardstand; • Crushing to be done within a designated bunded area; • Staff training.
Category 62: Solid Waste Depot			
Odour	Waste acceptance, handling and storage	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • All waste containing putrescible material will be serviced regularly; • Mixed waste from the Mixed Waste Drop Off Facility will be removed within a 48 hour period and taken to the landfill for appropriate disposal; • Areas will be cleaned regularly to ensure good housekeeping standards are

Emission	Sources	Potential pathways	Proposed controls
			maintained; • A complaints register will be maintained; and • Odour levels will be continuously monitored by staff and action taken, if required.
Noise	Waste acceptance, handling and storage	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.
Dust	Waste acceptance, handling and storage	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • Vehicles restricted to 10 km/hr unless otherwise signed; • All roads within the CRC will be sealed and maintained; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; • Water cart to be used as necessary; • All waste loads to be covered during transport to and from site; and • Waste stockpiles/loads may be wet down prior to handling and/or windy conditions.
Litter	Waste acceptance, handling and storage	Air / windborne pathway	• Unloaded waste and recyclable materials will be confined to the designated drop off areas; • Source separated commodities will be stored in a designated area;

Emission	Sources	Potential pathways	Proposed controls
			• Temporary bin covers will be applied to waste containers during periods of inclement weather; • Waste loads entering and leaving site will be covered; • A perimeter fence will be installed and regularly inspected; and • Any litter generated around and immediately outside the site will be collected on a regular basis.
Leachate	Waste acceptance, handling and storage	Overland runoff and infiltration	• A permanent canopy will prevent rainfall entering the hook lift bins and mixing with waste in the light vehicles drop off, on-ground recyclables and reuse drive through areas; • HHW will be stored in a fully enclosed building; • CRC waste to be stored on concrete hardstands; and • All contaminated stormwater to be directed into the Surface Water Management System.
Pests / vermin	Waste acceptance, handling and storage	Biological pathway	• A perimeter fence will be installed, monitored and maintained on a regular basis. The fence will be 1.8 m in height with a floppy top of at least 600mm in circumference and an external skirt; • All waste loads to be covered during transport; • Any suspected or known shelters or breeding grounds for vermin will be eliminated; • Ensure that wildlife and vermin have limited opportunities to access food and water at the RRRP; • Daily operations will include monitoring for feral cats, foxes and wild dogs; • Should any feral animal or vermin issues be experienced, professional services will be utilised to implement appropriate control/eradication methods; • General refuse waste from the Mixed Waste Drop Off Facility will be regularly disposed to landfill and covered and compacted to best practice

Emission	Sources	Potential pathways	Proposed controls
			standards; and • Regular litter collections onsite and immediate surrounds as required.
Fire / smoke	Waste acceptance, handling and storage	Air / windborne pathway	• All waste to be inspected at the weighbridge; • Tyres will be transferred from the CRC temporary storage area to the tyre monocell on a twice weekly basis; • The HHW shed will be designed in accordance with the DWER Guidelines for the Design and Operation of Facilities for the Acceptance and Storage of Household Hazardous Waste; • The HHW shed will consist of an enclosed building with adequate ventilation, storage areas and sumps with sufficient capacity; • Fire extinguishers and hose reels to be located at strategic locations; • All fire suppression equipment will be maintained and services in accordance with manufacturers specifications; • Water tanks for fire suppression; • Water cart available; • All buildings to comply with DFES guidance Site Planning and Fire Appliance Specifications (DFES, 2015); • A firebreak will be established in accordance with a Bushfire Management Plan; • A Bushfire Management Plan to be developed for the site; • Site inductions to include fire risks and management measures; and • All staff to be adequately trained to use fire suppression equipment.
Contaminated stormwater / firewater	Waste acceptance, handling and storage	Overland runoff and infiltration	• Firewater to be directed to the surface water management system; • Fire suppression water residues with the lined surface water pond will be removed and disposed of to an appropriately licensed facility; • A permanent canopy will prevent rainfall entering the hook lift bins and

Emission	Sources	Potential pathways	Proposed controls
			mixing with waste in the light vehicles drop off, on-ground recyclables and reuse drive through areas; • Uncontaminated stormwater to be diverted away from waste storage areas and released in a controlled manner through a separate drainage system; • All stormwater engineering features to be regularly inspected and maintained; • All road surfaces of the CRC will be delineated with kerbs and will utilise suitable slope gradients to guide the flow of surface water to perimeter drains positioned along the eastern boundary of the CRC and into the lined surface water storage ponds; • A retention pond will be established to manage surface water run-off generated within the Green waste Stockpile Area and the CRC Service Area; and • Weather will be monitored on a daily basis.
Category 63: Class I Inert Landfill			
Dust	Handling and burial of tyres	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • Water cart to be used as necessary.
Noise	Handling and burial of tyres	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.
Fire / smoke	Handling and burial of tyres	Air / windborne	• Tyres will be transferred from the CRC temporary storage area to the tyre

Emission	Sources	Potential pathways	Proposed controls
		pathway	monocell on a twice weekly basis; • Tyres will be disposed of within the tyre monocell stacked on their sidewall or baled with a non-combustible securing device at no more than 2m high; • Each monocell will be located a minimum of 10m from any fence, combustible materials or walls and located on level ground; • Trenches of the monocell to be excavated on an as-need basis; • No more than 1,000 tyres to be placed within each cell; • Each cell to be 2 m in height separated with a 300 mm thick soil separation layer; • Tyres will be progressively covered / capped through the placement of soils (1,000 mm thick); • Fire extinguishers and hose reels to be located at strategic locations; • All fire suppression equipment will be maintained and services in accordance with manufacturers specifications; • Water tanks for fire suppression; • Water cart available; • A firebreak will be established in accordance with a Bushfire Management Plan; • A Bushfire Management Plan to be developed for the site; • Site inductions to include fire risks and management measures; and • All staff to be adequately trained to use fire suppression equipment.
Category 70: Screening of Materials			
Dust	Screening of material	Air / windborne pathway	• Waste acceptance and operation of equipment to be restricted to operational hours only;

Emission	Sources	Potential pathways	Proposed controls
			• Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; • Water cart to be used as necessary; • Waste stockpiles/loads may be wet down prior to handling and/or windy conditions.
Noise	Screening of material	Air / windborne pathway	• All trucks and mobile equipment to be fitted with broadband noise reversing alarms; • Waste acceptance and operation of equipment to be restricted to operational hours only; • Unloading of materials from the lowest height possible; • All material handling will be confined to designated areas; and • All equipment and machinery will be maintained in good working condition.

6.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and takes into account potential source-pathway and receptor linkages as identified in Section 0. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in Section 0), these have been considered when determining the final risk rating. Where the Delegated Officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Works approval W6738/2022/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

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

Table 5: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
Construction – Stage 1								
Vehicle movements on unsealed surfaces, earthworks, construction and installation of site infrastructure	Dust	Air / windborne pathway causing impacts to health and amenity	**Human:** Residential premises 3 km south-west and 3.5 km south Goolarabooloo Community (Coconut Wells) 5.3 km north-west of premises Broome Motorcross Club 150 m south of premises Industrial premises 1.2 km south of premises **Ecological:** Yawuru Birragun Conservation Park adjacent to the west of premises	Refer to Section 6.1	C = Minor L = Possible **Medium Risk**	Y	Emission to be regulated under the general provisions of the EP Act	N/A
	Noise			Refer to Section 6.1	C = Minor L = Possible **Medium Risk**	Y	Emission to be regulated under the *Environmental Protection (Noise) Regulations 1997* (EP Noise Regulations)	N/A
	Litter			Refer to Section 6.1	C = Minor L = Possible **Medium Risk**	Y	Emission to be regulated under the general provisions of the EP Act and related Litter Act 1979	N/A
Time-limited-operations								
Category 13: Crushing of building material								
Screening, crushing, unloading, loading and storage of material Vehicle movements	Dust	Air/windborne pathway causing impacts to health and amenity	**Human:** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **Ecological:** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Moderate L = Possible **Medium Risk** Ecological: C = Slight L = Possible **Low Risk**	Y	Conditions 10, 14, 19, 42, 58, 59 & 60	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act.
	Noise				Human: C = Slight L = Possible **Low Risk**	Y	Condition 10, 12, 13, 14, 19, 58, 59 & 60	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
					Ecological: C = Slight L = Possible **Low Risk**			
Acceptance, screening, crushing, unloading, loading and storage of C&D material contaminated with asbestos	Asbestos fibres	Air/windborne pathway causing impacts to health	**Human:** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises	Refer to Section 6.1	Human: C = Severe L = Rare **High Risk**	Y	Condition 13, 16, 17, 18, 19, 22 – 38, 58, 59 & 60	The controls generally replicate the applicants proposed controls as well as the recommendations specified in the department's Guideline for Managing Asbestos at Construction and Demolition Waste Recycling Facilities (DWER, 2021) (Asbestos Guidelines).
Category 57: Used Tyre Storage								
Acceptance and storage of used tyres	Fire/smoke	Air/windborne pathway causing impacts to health and amenity	**Human:** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **Ecological:** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Moderate L = Possible **Medium Risk** Ecological: C = Moderate L = Possible **Medium Risk**	Y	Condition 1, 10, 16, 19, 16, 44, 45, 58, 59 & 60	The Delegated Officer considers that fires are effectively managed by the proposed fire risk prevention and management controls and by the general provisions of the EP Act.
Category 61: Liquid Waste Facility								
Acceptance and storage of sullage, septage, industrial wastes and stormwater	Odour	Air/windborne pathway causing impacts to health and amenity	**Human:** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises	Refer to Section 6.1	Human: C = Minor L = Unlikely **Medium Risk**	Y	Condition 10, 12, 16, 17, 19, 43, 46, 51, 54, 58, 59 & 60	Due to distance from sensitive receptors, the Delegated Officer considers that odour is effectively managed by the applicants controls. The Delegated Officer may wish to reassess the risk for the licence application based on observable odour emissions from the pond.
	Discharges of sullage/ septage/ industrial liquid wastes/ contaminated stormwater	Overland runoff / migration onto surrounding land causing ecosystem disturbance Seepage through soil and to groundwater causing	**Human:** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **Ecological:** Yawuru Birragun Conservation Park directly adjacent to the east of the	Refer to Section 6.1	See detailed risk assessment outlined in Section 6.3			

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
		contamination and impacting water quality	premises Groundwater approximately between 16-32 m bgl					
Loss of containment through overtopping of ponds or liner failure	Discharges of sullage/ septage/ industrial liquid wastes/ contaminated stormwater	Infiltration into groundwater causing contamination and impacting water quality.	**Ecological:** Yawuru Birragun Conservation Park directly adjacent to the east of the premises Groundwater approximately between 16-32 m bgl Buckley's Plains 3 km west-southwest of the premises	Refer to Section 6.1	See detailed risk assessment outlined in Section 6.3			
Category 61A: Solid Waste Facility								
Acceptance, storage and mulching of green waste	Odour	Air/windborne pathway causing impacts to health and amenity	**Human:** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises	Refer to Section 6.1	Human: C = Slight L = Possible **Low Risk**	Y	Condition 10, 12, 19, 49, 50, 58, 59 & 60	The Delegated Officer considers that odour emissions are effectively regulated by the proposed odour management controls and by the general provisions of the EP Act.
	Noise						Conditions 10, 12, 13, 14, 19, 58, 59 & 60	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.
	Dust						Condition 10, 14, 19, 58, 59 & 60	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act.
	Weeds	Air/windborne pathway causing impacts to ecosystem health and amenity	**Ecological:** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Ecological: C = Major L = Possible **High Risk**	Y	Condition 19, 21, 49, 50, 52, 53, 58, 59 & 60	The conditions generally replicate the applicant's proposed controls. The Delegated Officer considers the implementation of a weed management plan, monthly in-house inspections as well as biannual inspections and eradication programs by a third-party contractor as required due to the proximity to the Yawuru Birragun Conservation Park.
	Leachate	Overland run-off and infiltration to land causing impacts to underlying soil and groundwater	**Ecological:** Yawuru Birragun Conservation Park directly adjacent to the east of the premises Groundwater approximately between 16-32 m bgl Buckley's Plains 3 km west-southwest of the premises	Refer to Section 6.1	Ecological: C = Moderate L = Unlikely **Medium Risk**	See detailed risk assessment outlined in Section 6.3		

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
	Pests / vermin	Biological pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Minor L = Unlikely **Medium Risk** Ecological: C = Moderate L = Unlikely **Medium Risk**	Y	Condition 10, 11, 15, 16, 17, 19, 58, 59 & 60	The conditions generally replicate the applicant's proposed controls. The Delegated Officer considers the implementation of the Feral Animal and Vermin Management Plan as required to prevent degradation to surrounding ecosystem health and human health and amenity.
	Fire / smoke	Air/windborne pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Moderate L = Possible **Medium Risk** Ecological: C = Moderate L = Possible **Medium Risk**	Y	Condition 1, 10, 16, 19, 20, 44, 45, 58, 59 & 60	The Delegated Officer considers that fires are effectively managed by the proposed fire-risk prevention and management controls and by the general provisions of the EP Act.
Product quality (fit-for-purpose mulch)	Release of physical, chemical and / or biological contamination	Direct contact of products by consumers and the receiving environment impacting amenity and environmental and human health	Product users and the environment receiving the product	No proposed controls	Human: C = Moderate L = Unlikely **Medium Risk**	N	**Condition 19, 20, 21, 49, 50, 52 & 53**	Mulch produced on the premises will not undergo pasteurisation and will be classed as a Category B product as per the Guideline: Better practice organics recycling (December 2022). It is up to the works approval holder to ensure that all products are fit-for-purpose for the proposed end use. A fit-for-purpose product provides beneficial uses for the environment when used and does not contain contaminants at a level that could cause pollution or environmental harm. The Delegated Officer considers it appropriate that the works approval holder communicates to product users that the mulch does not comply with AS 4454 and any risks associated with use of the product in terms of pathogens, weeds and contaminants. By supplying a Category B product, the onus of communicating the appropriate end use of the product, as well as associated risks to product users is on the works approval holder.
Acceptance, storage and processing	Noise and	Air/windborne pathway causing	**<u>Human:</u>** Commercial premises 150 m south of	Refer to	Human:	Y	Condition 10, 12, 13, 14,	The Delegated Officer considers that noise emissions are effectively regulated by the

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
of light vehicles	vibration	impacts to health and amenity	premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Section 6.1	C = Slight L = Possible **Low Risk** Ecological: C = Slight L = Possible **Low Risk**		19, 58, 59 & 60	proposed noise management controls and by the EP Noise Regulations.
	Dust			Refer to Section 6.1	Human: C = Moderate L = Possible **Medium Risk** Ecological: C = Slight L = Possible **Low Risk**	Y	Conditions 10, 14, 19, 42, 58, 59 & 60	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act.
	Hydrocarbons / liquids (spills)	Overland run-off and infiltration to land causing impacts to underlying soil and groundwater	**<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises Groundwater approximately between 16-32 m bgl Buckley's Plains 3 km west-southwest of the premises	Refer to Section 6.1	Ecological: C = Moderate L = Unlikely **Medium Risk**	Y	Conditions 10, 16, 17, 19, 39, 40, 46, 56, 58, 59 & 60	The Delegated Officer considers that spills can be effectively managed by the proposed controls and by the *Environmental Protection (Unauthorised Discharge) Regulations 2004*.
	Contaminated stormwater / firewater	Overland runoff and/or infiltration from the Surface Water Management System causing impacts to underlying soil and groundwater	**<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises Groundwater approximately between 16-32 m bgl Buckley's Plains 3 km west-southwest of the premises	Refer to Section 6.1	Ecological: C = Minor L = Unlikely **Medium Risk**	See detailed risk assessment outlined in Section 6.3		
	Fire / smoke	Air/windborne pathway causing impacts to health and	**<u>Human:</u>** Commercial premises 150 m south of premises	Refer to Section 6.1	Human: C = Moderate	Y	Condition 1, 10, 16, 17, 19, 20, 44, 45, 58, 59 & 60	The Delegated Officer considers that fires are effectively managed by the proposed fire-risk prevention and management controls and by

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
		amenity	Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises		L = Possible **Medium Risk** Ecological: C = Moderate L = Possible **Medium Risk**			the general provisions of the EP Act.
Category 62: Solid Waste Depot								
Waste acceptance, handling and storage	Odour	Air/windborne pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Slight L = Possible **Low Risk** Ecological: C = Slight L = Possible **Low Risk**	Y	Condition 10, 16, 19, 43, 58, 59 & 60	The Delegated Officer considers that odour emissions are effectively regulated by the proposed odour management controls and by the general provisions of the EP Act.
	Noise					Y	Condition 10, 12, 13, 14, 19, 58, 59 & 60	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.
	Dust					Y	Conditions 10, 14, 19, 42, 58, 59 & 60	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act.
	Litter					Y	Condition 10, 11, 19, 41, 58, 59 & 60	The Delegated Officer considers that litter is effectively regulated by the proposed controls and by the general provisions of the EP Act and related Litter Act 1979.
	Leachate	Overland run-off and infiltration to land causing impacts to underlying soil and groundwater	**<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises Groundwater approximately between 16-32 m bgl Buckley's Plains 3 km west-southwest of the premises	Refer to Section 6.1	Ecological: C = Moderate L = Unlikely **Medium Risk**	See detailed risk assessment outlined in Section 6.3		
	Pests/vermin	Biological pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>**	Refer to Section 6.1	Human: C = Minor L = Unlikely **Medium Risk**	Y	Condition 10, 11, 15, 16, 17, 19, 58, 59 & 60	The conditions generally replicate the applicant's proposed controls. The Delegated Officer considers the implementation of the Feral Animal and Vermin Management Plan as required to prevent degradation to surrounding ecosystem health and human health and amenity.

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
			Yawuru Birragun Conservation Park directly adjacent to the east of the premises		Ecological: C = Moderate L = Unlikely **Medium Risk**			
	Fire / smoke	Air/windborne pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Moderate L = Possible **Medium Risk** Ecological: C = Moderate L = Possible **Medium Risk**	Y	Condition 1, 10, 16, 19, 44, 45, 58, 59 & 60	The Delegated Officer considers that fires are effectively managed by the proposed fire-risk prevention and management controls and by the general provisions of the EP Act.
	Contaminated stormwater	Overland runoff and/or infiltration from the Surface Water Management System causing impacts to underlying soil and groundwater	**<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Ecological: C = Moderate L = Unlikely **Medium Risk**	See detailed risk assessment outlined in Section 6.3		
Category 63: Class I inert landfill								
Acceptance, handling and burial of tyres	Dust	Air/windborne pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Slight L = Possible **Low Risk**	Y	Condition 10, 14, 19, 42, 58, 59 & 60	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act.
	Noise				Ecological: C = Slight L = Possible **Low Risk**	Y	Condition 10, 12, 13, 14, 19, 58, 59 & 60	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.
	Fire/smoke				Human: C = Moderate L = Possible **Medium Risk**	Y	Condition 1, 10, 16, 19, 16, 44, 45, 58, 59 & 60	The controls generally replicate the applicants proposed controls. The Delegated Officer considers the specifications for burial and capping layers as necessary to prevent fires.

Risk events					Risk rating [1] C = consequence L = likelihood	Applicant controls sufficient?	Conditions [2] of works approval	Justification for additional regulatory controls
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**	**Applicant controls**				
					Ecological: C = Moderate L = Possible **Medium Risk**			
Category 70: Screening of Materials								
Screening of material	Dust	Air/windborne pathway causing impacts to health and amenity	**<u>Human:</u>** Commercial premises 150 m south of premises Residences 3.5 km west, 3 km south-west and 3.7 km west of premises **<u>Ecological:</u>** Yawuru Birragun Conservation Park directly adjacent to the east of the premises	Refer to Section 6.1	Human: C = Slight L = Possible **Low Risk**	Y	Conditions 10, 14, 19, 42, 58, 59 & 60	The Delegated Officer considers that dust emissions are effectively regulated by the proposed dust management controls and by the general provisions of the EP Act.
	Noise				Ecological: C = Slight L = Possible **Low Risk**	Y	Condition 10, 12, 13, 14, 19, 58, 59 & 60	The Delegated Officer considers that noise emissions are effectively regulated by the proposed noise management controls and by the EP Noise Regulations.

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

Note 2: Proposed applicant controls are depicted by standard text. **<u>Bold and underline text</u>** depicts additional regulatory controls imposed by department.

6.3 Detailed risk assessment for leachate/ groundwater contamination

6.3.1 Description of leachate / groundwater contamination

Leachates and liquid waste seepage to groundwater may occur if there is damage to one of the liquid waste pond liners or a failure of the Surface Water Management System. Leachate and liquid waste may also occur as a result of overtopping of liquid waste storage infrastructure, failure of liquid waste or stormwater conveyance infrastructure, or during removal and disposal of sludge from the pond base. Leachates may also arise from the acceptance and processing of solid wastes such as scrap metal and green waste, either through liquid within the waste on receipt or during rainfall events where stormwater may become contaminated by these waste types.

6.3.2 Identification and general characterisation of emission

Liquid wastes accepted on site include oil and grease, septage wastes, car and truck wash waters, industrial wash waters, non-halogenated organic chemicals (e.g. brake fluid, coolant and radiator fluid) and industrial waste treatment plant residue. Stormwater on site may become contaminated by coming into contact with green waste, scrap metal, light vehicles, white goods, e-waste and putrescible wastes. Therefore, leachates, contaminated stormwater and sludges may consist of high levels of nutrients, hydrocarbons, metals, pathogens, salts and persistent organic pollutants. In the event of a fire at the premises there may be an increase in the volume of fire suppressant run-off or contaminants in firewater run-off. No active treatment of liquid waste is proposed, and waste characteristics may only be altered by evaporation (concentration) and passive biodegradation.

Industrial wastes intend to be disposed of by truck directly into the HDPE lined receival ponds via pipes with shut off valves. Septage waste will be disposed of by truck directly into one of two concrete lined receival ponds where solid constituents will settle, and the remaining liquid will be directed by gravity to a HDPE lined evaporation pond. All stormwater on the site that has the potential to come into contact with waste will be directed into the surface water management system. The system comprises of a series of drains and swales that directs water to either the Green Waste Retention Pond, the Community Recycling Centre Retention Pond or the Surface Water Collection Pond. Potentially contaminated stormwater is evaporated from the ponds with both Retention Ponds having the ability to overflow into the Surface Water Collection Pond in periods of high rainfall. Water from the Surface Water Collection Pond may be directed into the Surface Water Infiltration Pond for infiltration, or discharged offsite via an emergency outflow.

6.3.3 Description of potential adverse impact from the emission

Receptors that may be affected by leachate emissions include beneficial users of groundwater. Groundwater may become contaminated by leachate/contaminated stormwater/liquid wastes infiltrating through the soil and into groundwater. Contaminants dissolved in groundwater may become highly mobile and be carried down the hydraulic gradient to receptors.

Groundwater occurs approximately 16 to 32 mBGL at the premises in sandstone beneath Pindan sand and is unconfined. Groundwater monitoring conducted at the premises indicates that groundwater is responsive to rainfall and groundwater level has a seasonal variability of around 1 m. Groundwater is fresh, with a salinity ranging from 185 to 410 mg/L, making it of high-value to beneficial users.

Groundwater modelling conducted as part of the application indicates that groundwater flows toward the south-west then west towards Buckley's Plain and then to the Indian Ocean.

Modelling indicates there is no drainage to Roebuck Bay or Dampier Creek to the south.

Hydraulic testing determined a groundwater seepage velocity beneath the site of approximately 21 m/year. Contaminant modelling suggests that travel times for a potential contaminant plume are 72 years to the closest downgradient beneficial groundwater bore and 144 years to Buckley's Plain.

A range of human and ecological beneficial users of groundwater exist in the immediate area and downgradient to the Broome RRRP. A conceptual site model has been developed to assess the risk to receptors that may be adversely impacted from contaminated groundwater as a result of leachate emissions and is detailed below in Table 6.

Table 6: Source-Pathway-Receptor Linkages and potential impacts

Source	Pathway	Receptor	Complete Pathway? (Y/N)	Description of potential impact
Contaminated groundwater resulting from infiltration of leachate, waste or contaminated stormwater resulting from loss of containment or overland runoff	Migration of contaminated groundwater downgradient across the aquifer	Residential premises 3.5 km south of premises	N	Receptor is outside of the modelled groundwater flow area. Incomplete pathway.
		Residential premises 3 km south-west of premises	N	Receptor is outside of the modelled groundwater flow area. Incomplete pathway.
		Residential premises 3.7 km west of premises	Y – with temporal limitations	Residential properties fall within the modelled groundwater flow pathway and are beneficial uses of bore water. It is undetermined what purpose the private bores serve, however, conservatively it is assumed that bore water is used for human consumption either directly or indirectly through irrigation of edible gardens. A pathway therefore exists whereby contaminated groundwater may be ingested by human receptors, however, contaminant modelling suggests that it would take a contaminant plume 177 years to reach the dwellings. Provided the site is appropriately managed, there should be no impact to residential properties. Additional regulatory controls shall be placed on the works approval to conduct monitoring of groundwater wells on the western boundary of the premises. Should contamination be identified, remedial action should be undertaken to prevent contaminated groundwater from reaching residential properties.
		Goolarabooloo Community (Coconut Wells) 5.3 km north-west of premises	N	Receptor is outside of the modelled groundwater flow area. Incomplete pathway.
		Broome Motocross Club 150 m south of	Y – partial	The Broome Motorcross Area partially falls within the modelled groundwater flow pathway, however, the motorcross groundwater production bore does not. There should be no impact to the Broome Motorcross Area, however, in the event

Source	Pathway	Receptor	Complete Pathway? (Y/N)	Description of potential impact
		premises		that an additional production bore may be installed within the flow pathway at some point in the future, regulatory controls shall be placed on the works approval to install an additional monitoring bore on the southern boundary of the premises conduct monitoring on all of the southern boundary bores.
		Industrial premises 1.2 km south of premises	N	Receptor is outside of the modelled groundwater flow area. Incomplete pathway.
		Yawuru Birragun Conservation Park adjacent to the west of the premises	Y	The Yawuru Birragun Conservation Park is immediately downgradient from the premises. Contaminated groundwater originating from the premises has the potential to adversely impact groundwater dependant species and degrade ecosystem function. Should the site be managed appropriately, groundwater should not become contaminated and should not adversely impact the Yawuru Birragun Conservation Park. Additional regulatory controls including groundwater monitoring shall be conducted as contingency measures to ensure on-going protection of sensitive ecological receptors.
		Buckley's Plain 3 km west of the premises	Y – with temporal limitations	Buckley's Plain falls within the modelled groundwater flow pathway and is a groundwater dependant ecosystem. Contaminant plume modelling suggests that a plume of contaminated groundwater from the premises would take 144 years to reach Buckley's Plain. Provided the site is appropriately managed, there should be no impact to Buckley's Plain. Additional regulatory controls including groundwater monitoring shall be conducted as contingency measures to ensure on-going protection of sensitive ecological receptors.
		Roebuck Bay / Dampier Creek 4.2 km south of the premises	N	Receptor is outside of the modelled groundwater flow area. Incomplete pathway.
		Indian Ocean 5.5	Y – with	All groundwater flowing through the premises will eventually discharge into the

Source	Pathway	Receptor	Complete Pathway? (Y/N)	Description of potential impact
		km of the premises	temporal limitations	Indian Ocean. Contaminant plume modelling suggests that a plume of contaminated groundwater from the premises would take over 200 years to reach the Indian Ocean. Provided the site is appropriately managed, there should be no impact to the Indian Ocean. Additional regulatory controls including groundwater monitoring shall be conducted as contingency measures to ensure on-going protection of sensitive ecological receptors.
	Migration of contaminated groundwater up natural hydraulic gradient due to reversal of localised groundwater flow	Priority 1 Public Drinking Water Source Area – Broome Water Reserve and beneficial users of the Broome Water Reserve (town water supply)	Partial linkage (may occur in exceptional circumstances)	The application package did not consider potential reversal of groundwater flow due to pumping at the Broome Town Water Supply (TWS) bore field. The premises is adjacent to the Priority 1 Public Drinking Water Source Area (PDWSA) and approximately 1.2 km from the closest well head protection zone. Available data submitted to DWER by the Water Corporation shows that the production bores can cause groundwater levels to drop to 0 m AHD during pumping cycles. Assuming that individual TWS bores are pumped at about 50% duty cycle, then the gradients towards the production bores would derive velocities of less than 10m/year. This drawdown gradient is opposing the natural gradient (causing a localised reversal of groundwater flow). A smaller, slower contaminant plume may move eastwards from any seepage point towards the TWS production bores as a result. Groundwater travel times show that any contaminated groundwater would take years or decades to move beyond the boundaries of the premises (depending on seepage location) and significantly longer to reach the TWS bores over 1.5km away. Consultation with the Water Corporation was undertaken as part of this application and it was concluded that the Water Corporation did not have enough evidence to support any objections to the proposed Broome RRRP. However, the Broome Public Drinking Water Source Protection Area is the sole water supply for the town of Broome and a Priority 1 area for which the management objective is 'risk avoidance'. Provided the site is appropriately managed, there should be no impact to the Broome TWS. Additional regulatory controls including additional groundwater monitoring bores and constant monitoring of groundwater flow shall be conducted as contingency measures to ensure on-going protection of the water source.

6.3.4 Applicant controls

The applicant's proposed controls are detailed in Section 6.1.

6.3.5 Key findings

The Delegated Officer has reviewed the information regarding leachate/contaminated groundwater and has found:

1. Groundwater in the region is fresh and has beneficial uses to the region.
2. Downgradient human receptors within the groundwater flow-path are sufficiently removed temporally from the premises and that any potential contaminant plume can be sufficiently managed to prevent any adverse impacts to human receptors.
3. Some risk exists to groundwater dependant species in the Yawuru Birragun Conservation Park in the event of groundwater contamination.
4. Other ecological receptors within the groundwater flow path are far enough removed temporally that a contaminant plume can be sufficiently managed to prevent any adverse impacts to sensitive ecological receptors.
5. While reversal of groundwater flow due to pumping cycles from the Broome Town Water Supply production bores is possible, there is not enough evidence to indicate an unacceptable risk to the Broome Town Water Supply. The water supply should be managed to avoid any risk and contingencies should be put in place to monitor the water supply.

6.3.6 Risk assessment

The Delegated Officer has:

- considered that the consequence to receptors exposed to contaminated groundwater through infiltration of leachate/waste/contaminated stormwater from the site could have major impacts to human and environmental health and amenity;
- considered that the likelihood of impacts to receptors is unlikely based on the controls proposed by the applicant; and
- determined that the overall rating for the risk of impacts from product quality, based on a consequence of major and a likelihood of unlikely, is **medium.**

6.3.7 Regulatory controls

In considering the findings of the risk assessment for contaminated groundwater through infiltration of leachate/waste/contaminated stormwater from the site, the Delegated Officer considers the additional regulatory controls listed in Table 7 as necessary to address the uncertainties surrounding groundwater flow due to pumping of production bores from the Broome Town Water Supply.

Table 7: Summary of additional regulatory controls for contaminated groundwater

Condition number	Regulatory control[1]
Condition 1 **Table 1**	A permeability coefficient requirement of equal to or less than $1x10^{-9}$ m/s has been included to the construction requirements for all concrete hardstand areas where waste is to be stored. Requiring a permeability coefficient of equal to or less than $1x10^{-9}$ m/s is a standard requirement for hardstands which waste is stored on and is seen as necessary to prevent the seepage

	of leachate, contaminated stormwater or liquid wastes through hardstands. Additional requirements have been included for the hardstand construction requirements for the Stockpile and Processing Area for the storage of green waste, mulch and end-of-life vehicles. Controls relating to green waste and mulch have been added in accordance with the *Guideline: Better practice organics recycling* (December 2022) and requirements have also been included for the construction of a concrete hardstand for the storage of end-of-life vehicles. These additional controls are considered necessary by the Delegated Officer to prevent seepage of leachate through the Stockpile and Processing Area hardstand to ensure that all leachate and contaminated stormwater is directed into the Surface Water Management System.. The Delegated Officer considers the placement of the well screen for GW02-D as inadequate. The water table sits above the well screen and the Delegated Officer is uncertain if groundwater monitoring in this well will be able to accurately detect the presence of any potential contaminants that tend to reside above or within the upper regions of the water table. GW02-D is the closest down-gradient monitoring well to the liquid waste ponds and is deemed as critical for early detection of potential sources of contamination from breaches in the pond's integrity. The Delegated Officer therefore requires GW02-D to be re-drilled and screened at the appropriate depth across the water table. The Delegated Officer considers extra groundwater monitoring bores in the locations listed on the works approval as necessary to address uncertainties and for early detection of potential contamination before any contaminant plume reaches off-site receptors.
Condition 2 **Table 2**	A permeability coefficient requirement of equal to or less than $1x10^{-9}$ m/s has been included to the construction requirements for all critical containment ponds. Requiring a permeability coefficient of equal to or less than $1x10^{-9}$ m/s is a standard requirement for critical containment storage ponds and is seen as necessary to prevent the seepage of liquid wastes into soil and groundwater.
Condition 10 **Table 3**	Permeability coefficient requirements included for time limited operations.
Condition 48 **Table 7**	Stormwater collected in the Surface Water Collection Pond discharges into the Surface Water Infiltration Pond. Stormwater collected in the Surface Water Collection Pond may be contaminated from coming into contact with waste materials. No treatment of stormwater asides passive biodegradation is proposed. Contaminant discharge limits have been applied to prevent contaminated stormwater being discharged off site. The Delegated Officer may wish to re-evaluate the discharge limits as part of the licence application once initial surface water monitoring results have been collected.
Condition 54 **Table 10**	Uncertainty exists as to what the quality of the water received into the Surface Water Collection Pond will be. To inform the risk assessment as part of the licence application, surface water monitoring has been included on the works approval.
Condition 55 **Table 11**	Volumes of stormwater discharged off site are required to be recorded as part of the works approval to inform the risk assessment as part of the licence application and address uncertainties.
Condition 57 **Table 13**	As part of the risk avoidance strategy in relation to the Broome Town Water Supply, the Delegated Officer considers that the CEO should be immediately notified if a reversal of groundwater flow at the premises is detected.

Note 1: the Delegated Officer may wish to review the efficacy of the applied controls and risk assessment should issues be identified through regulatory monitoring and/or where complaints arise in relation to site operations.

7. Consultation

Table 8 provides a summary of the consultation undertaken by the department.

Table 8: Consultation

Consultation method	Comments received	Department response
Application advertised on the department's website on 9 November 2022	None received	N/A
Department of Health advised of proposal on 15 November 2022	The Department of Health (DoH) provided an email response on 16 December 2022 with the following comments: • The DoH has concerns regarding the proposed location, immediately adjacent to the Priority 1 Broome Water Reserve, Public Drinking Water Source Area (PDWSA). • The proposal provides limited detail regarding how liquid waste ponds will be managed when an overflow occurs due to events such as storm or heavy rainfall. • There is inadequate detail regarding monitoring and necessary interventions to prevent contamination of the groundwater, especially the PDWSA. • Regional groundwater flow is from east to west, however, the application highlights that water extraction from the PDWSA has the potential to reverse normal groundwater flow. This could potentially put the PDWSA at risk and further pose a risk to public health should the Broome RRRP have a spillage event, localised flooding or if the lined ponds are compromised. • The DoH needs to be confident that the PDWSA will not be compromised and therefore does not support the proposal.	The department acknowledges the DoH's concerns and has sought internal advice from DWER's North-West Regional team, our PDWSA protection team and from the Water Corporation. Reviews conducted by each team have concluded that there is no current risk to the PDWSA from proposed operations. The department has included the addition of extra groundwater monitoring wells on the eastern boundary of the premises and has conditioned continuous flow monitoring for select wells. The Shire of Broome will be required to immediately report to the CEO any detections of reversal of groundwater flow. Quarterly and biannual groundwater monitoring suites have also been conditioned to assess for any integrity issues with the liquid waste ponds. As per Section 72 of the EP Act, the CEO must be notified of any loss of containment or unauthorised discharge of waste as soon as practicable after that discharge.

	It is recommended that the proposed site be located further away from the PDWSA, or further advice is sought to demonstrate how the identified issues will be managed in order to prevent adversely impacting the adjacent PDWSA.	
Department of Biodiversity, Conservation and Attractions advised of proposal on 15 November 2022	The Department of Biodiversity, Conservation and Attractions (DBCA) provided an email response on 6 December 2022 stating that following consultation performed by the Shire of Broome during the works approval application, DBCA have no further comments to make.	Noted.
Stakeholder letter sent to Yawuru Native Title Holders Aboriginal Corporation on 15 November 2022	None received	N/A
Stakeholder letter was sent to the Broome Motorcross Club on 15 November 2022	None received	N/A
Stakeholder letter send to the Water Corporation on 19 December 2022	The Water Corporation provided an email response on 24 January 2023 stating that their Hydrogeology and Asset Planning teams had reviewed the proposal in terms of the risk it presents to the current drinking water bores and future expansion plans. They concluded that they did not have any evidence to support an objection to the proposed resource recovery facility.	Noted.
Applicant was provided with draft documents on 9 March 2023	As detailed in Appendix 1: Summary of applicant's comments on risk assessment and draft conditions	As detailed in Appendix 1: Summary of applicant's comments on risk assessment and draft conditions

8. Conclusion

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

References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting Conditions*, Perth, Western Australia.
2. Department of Fire and Emergency Services (DFES) 2020, *Guidance Note: GN02 Bulk Storage of Rubber Tyres Including Shredded and Crumbed Tyres*, Perth, Western Australia.
3. Department of Water and Environmental Regulation (DWER) 20220, *Guideline: Better Practice Organics Recycling*, Perth, Western Australia.
4. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Environmental Siting*, Perth, Western Australia.
5. Department of Water and Environmental Regulation (DWER) 2021, *Guideline: Managing asbestos at construction and demolition waste recycling facilities*, Perth, Western Australia.
6. Department of Water and Environmental Regulation (DWER) 2020, *Guideline: Risk Assessments*, Perth, Western Australia.
7. Department of Water (DoW) 2012, *Broome Water Reserve: Drinking Water Source Protection Plan Broome Town Water Supply*, Perth, Western Australia.
8. Department of Water (DoW) 2016, *Skuthorpe allocation limit review methods report*, Perth, Western Australia.

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

Condition (on draft)	Summary of applicant's comment	Department's response
Infrastructure and equipment – concrete hardstand permeability requirement ($1x10^{-9}$ m/s or less) Condition 1, Table 1, Items 1, 2, 3, 4	This type of requirement is not a standard test in the civil engineering industry. In lieu of requesting a permeability requirement, the Shire proposes that all concrete hardstands will be fit-for-purpose and durable ground slabs. The suggested wording is provided to achieve this objective. These modifications are in line with well-established principles for design and construction of concrete and the Australian codes referenced set out the rational design requirements to ensure the durability of the concrete. Therefore, the Shire requests that this modification is made to all proposed concrete hardstands under this Works Approval.	The Delegated Officer considers that the alternative construction method proposed by the applicant should meet the same objectives as the permeability requirement. The Delegated Officer has also included the need for all joints, cuts and incisions within the concrete to be sealed (to ensure a uniformed sealed hardstand). The Delegated Officer notes that the applicant has proposed an exposure classification of 'A1'. DWER's understanding of the standard is that the exposure classification is based on the most severe exposure of any of its surfaces, which in the case of the Broome RRRP would be 'B1'. The Delegated Officer has conditioned an outcome-based condition which requires compliance with the Australian Standard. The applicant may wish to review conformance with the standard before construction of related infrastructure.
Infrastructure and equipment – oil receptacle Condition 1, Table 1, Item 3 and Condition 10, Table 3, Item 4	There is a minor wording inconsistency. The intention is that a 20kL oil receptacle will be installed within the RRRP Community Recycling Centre. Therefore, the Shire requests this minor change.	Updated within works approval to 20kL.
Infrastructure and equipment – Stockpile and Processing Area permeability requirement ($1x10^{-9}$ m/s or less) Condition 1, Table 1, Item 5	Site investigations were undertaken between 2020-2021 and the resulting report (TW19118 – Broome RRRP Site Investigation_D2.2a) was provided to the DWER as part of the Works Approval package. In Section 11.4.1, it states the following: *"The Site has supportive geotechnical characteristics including:* • *On average 15 m of unsaturated soils prior to the inferred maximum groundwater levels which will ensure the DWER's recommended 3 m separation to groundwater can be easily achieved.*	The Delegated Officer considers that the proposed alternative permeability of $1x10^{-8}$ based on a standard 95% MMDD compaction rate should achieve the same objectives as the $1x10^{-9}$ permeability requirement. Based on the information provided, the Delegated Officer considers that the risk profile does not change and therefore has adopted the proposed change.

Condition (on draft)	Summary of applicant's comment	Department's response
	• *The in-situ soils will be utilised for the engineering attenuation layer below the base of the lining system. The recompacted permeability values for the laboratory for the insitu soils is 3 X 10-8"* The recompacted permeability values are based on a 95% Modified Maximum Dry Density (MMDD), which is an industry standard for earthworks as per Australian Standard (AS) 3798: Guidelines on earthworks for commercial and residential developments. The laboratory certificate from the NATA-certified E-Precision Laboratory is provided in this letter response as Attachment 1. As can be seen in the testing certificate, the Site's in-situ soils can achieve a significantly low permeability (< 1 x 10-8 m/s) when compacted to the standard 95% MMDD compaction rate; however, not lower than the nominated 1 x 10-9 m/s permeability rate. Therefore, the Shire requests that all proposed in-situ compacted hardstands and subgrade layers throughout the Site infrastructure have a permeability requirement of 1 x 10-8 m/s or less, which is an actual achievable permeability requirement for the Site and makes the overall Project viable for the Shire. This slightly lower permeability rate should not increase the overall environmental risk profile due to the several other environmental management measures that will be implemented at the Site as discussed in the Environmental Assessment and Management Plan and incorporated in the Technical Specification and CQA Plan provided to the DWER, including but not limited to, the following key measures: • The hardstand surfaces will utilise suitable slope gradients to guide surface water run-off into the Site's overall stormwater management system, which will mitigate pooling and potential infiltration; • All waste loads are inspected for contamination prior to acceptance and stockpiling on hardstand surfaces; • The construction of all hardstands and compacted subgrade layers will be in accordance with AS 3798, including quality assurance testing by a NATA-certified laboratory; • The installation of the geosynthetic lining systems for all the ponds will be undertaken by a suitably qualified contractor with full-time supervision from a construction quality assurance	

Condition (on draft)	Summary of applicant's comment	Department's response
	(CQA) consultant; • Following installation any geomembrane layer will be subject to a leak detection survey to confirm as reasonably as possible that the layer has no defects; and • Routine inspections and maintenance, if required, of pond linings systems and hardstand surfaces.	
Infrastructure and equipment Condition 1, Table 1, Item 5 & Condition 10, Table 3, Item 6	The DWER has nominated an engineering design change for the vehicle storage area at the RRRP. Instead of the proposed compacted Pindan sand hardstand for surfacing, the DWER is requiring that the 2,400m2 storage area consists of a concrete hardstand. Due to the excessive costs and onerous nature associated with this design change, the Shire proposes to install a 600m2 concrete hardstand on which all vehicle crushing activities will be undertaken and any identified leaking cars can be placed until they are drained appropriately. This concrete hardstand will consist of a 0.5%-1% slope towards a sump with an oil-water separator or other similarly approved interceptor. The water will then discharge into the nearby swale (Swale 14) and the oil will be routinely disposed of into the CRC's waste oil receptacle. In order to minimise the additional surface water infrastructure requirements, the Shire proposes to switch the proposed vehicle stockpile area with the scrap metal stockpile area. This will allow for the water discharge of oil-water separator to be transferred directly onto a rock-armouring protected portion of Swale 14, minimising any potential erosion issues associated with regular discharge. The overall size of either stockpile area will not change, only its location. An updated Site layout plan has been attached to this letter response as Attachment 2.	The Delegated Officer has made the proposed changes to the works approval under approved Category 61A activities. However, it is also noted that the Shire has not yet appointed a contractor for the works and was unable to provide a specific methodology. Additional controls may be applied to the licence following upon completion of time limited operations and once a contractor has been appointed.
Condition 1, Table 1, Items 8, 9 & 10 Condition 1, Table 1, Item 11	The calculation used to determine the 24hr infiltration rate capability is theoretical and was intended to provide an approximate likely infiltration rate for each of the ponds; however, it is not intended to be exact. There is also not a practical method for determining these rates following construction where the Shire would be able to provide evidence of these rates. In Talis' experience, this requirement has not been specified for other surface water pond constructions at waste management facilities; therefore, it is requested that this line item be removed from the Works Approval.	Noted. Removed from condition. The Delegated Officer considers the compaction requirements specified for each pond as sufficient to ensure the ponds achieve the desired retention / infiltration outcomes.

Condition (on draft)	Summary of applicant's comment	Department's response
Condition 2, Table 2, Item 1	The receival ponds for the Sullage Facility will be lined with reinforced concrete. Please refer to Line Item 1 for the justification of requested change.	The Delegated Officer considers that the alternative construction method proposed by the applicant should meet the same objectives as the permeability requirement. The Delegated Officer has also included the need for all joints, cuts and incisions within the concrete to be sealed (to ensure a uniformed sealed hardstand).
Condition 2, Table 2, Item 1	It has been assumed that this requirement refers to the compacted subgrade layer and not the HDPE geomembrane. Therefore, please refer to Line Item 3 for the justification of requested change.	Condition has been amended as per the justification above. Condition has also been amended to clarify that permeability requirements relate to the compacted subgrade layer.
Condition 10, Table 3, Items 2, 3, 5	Please refer to Line Item 1 for the justification of requested change.	The applicant's proposed wording is a construction requirement. An adapted outcome based operational requirement has been inserted into the works approval replacing the permeability coefficient requirement. The new condition wording states that the concrete hardstand must be impervious and sealed. The Delegated Officer considers that this new wording should meet the same objectives as the permeability coefficient.
Condition 10, Table 3, Item 4	Please refer to Line Item 1 for the justification of requested change.	The applicant's proposed wording is a construction requirement. An adapted outcome based operational requirement has been inserted into the works approval replacing the permeability coefficient requirement. The new condition wording states that the concrete hardstand must be impervious and sealed. The Delegated Officer considers that this new wording should meet the same objectives as the permeability coefficient.
Condition 10, Table 3, Items 11, 12, 13 & 14	Please refer to Line Items 5 & 6 for the justification of requested change.	Noted. Removed from condition. The Delegated Officer considers the compaction requirements specified for each pond as sufficient to ensure the ponds achieve the desired retention / infiltration outcomes.
Condition 10, Table 3, Item 18	There is a minor wording inconsistency. The Shire is proposing to erect a 1.8m high cyclone wire fence around the facility, which is the same type of fencing that is employed successfully at the Buckley's Road Facility located closer to town. Active management strategies will be implemented if feral animals, such as foxes or cats, are found in the	Noted. Works approval updated to remove the requirement of a floppy top on the fence.

Condition (on draft)	Summary of applicant's comment	Department's response
	facility, including the following as listed in Table 9-2 of the EAMP: • Any suspected and/or known shelters or breeding grounds for vermin on the Site will be eliminated; • Ensuring that wildlife and feral or vermin species have limited opportunities to access food and water at the RRRP; • Daily operations will include monitoring for feral cats, foxes and wild dogs; • Should any feral animal or vermin issues be experienced, professional services will be utilised to implement appropriate control/eradication methods; • General refuse waste from the Mixed Waste Drop Off Facility will be regularly disposed to landfill and covered and compacted to best practice standards; and • Regular litter collections onsite and immediate surrounds as required. Additionally, in previous discussions about the RRRP, Broome-based DBCA staff have indicated that in their experience floppy top fences are not effective and they have moved away from using them. Therefore, the Shire requests this minor change as indicated.	
Condition 16, Table 4, Hazardous Household Wastes	In Section 7.1.1 of the EAMP, it states that the Shire intend to accept all wastes under the HHW program. In Section 7.1.2 of the EAMP, only a few key waste types were listed; however, the Shire still intends to accept the full list of wastes under the HHW program. Therefore, the Shire requests this minor change as indicated.	Amended to include HHWs listed in the response letter. Car batteries have been left as an inclusion on the works approval as the risk factor does not change. The Delegated Officer has included additional standard waste storage requirements relating to the acceptance and storage of hazardous liquid wastes.
Condition 19, Table 5	It would be very difficult for the Shire to meet the requirements regarding pasteurisation due to high cost of operating these activities in a regional area that is routinely impacted by labour shortages and wage inflation. Additionally, as a tropical location subject to high heat and rainfalls the Broome Townsite generates much higher than average greenwaste volumes. Existing operations at the Buckley's Road Facility do not undertake pasteurisation as additional staff and machinery would be required beyond the already stretched resources. It will be impractical for the Shire to continue providing green waste recovery services if	The Delegated Officer acknowledges the concerns of the Shire in relation to not having adequate resources to comply with pasteurisation requirements. Based on the information provided, the Delegated Officer considers the mulch a Category B product, as per the Guideline: Better practice organics recycling (December, 2022). The Delegated Officer has removed the pasteurisation requirements as per the Shire's request; however, the Delegated Officer highlights that the onus is on the Shire to ensure that the product they supply

Condition (on draft)	Summary of applicant's comment	Department's response
	pasteurisation is mandated. The shredded product currently provided to the community is widely used throughout the Shire without any current issues. For example, the Shire's Parks and Gardens division utilises it within garden beds and Shire projects to improve soil structure, as a weed suppressant, retain soil moisture and reduce soil loss via wind and water erosion. In addition, Shire residents consistently pick-up this material free-of-charge at the Buckley's Road Facility. The Shire does not have any records of historical issues from the community on the finished product. Shredded mixtures of green waste or garden organics are classed as Category B product types. As per Section 8.10 of the DWER's Guideline: Better practice organics recycling these do not need to be subject to pasteurisation if the product is deemed fit-for-purpose where contaminants (e.g., weeds and pathogens) do not present an unacceptable risk of pollution or environmental harm. Based on past operational experience the shredded product currently produced meets these criteria. The Shire would like to maintain the current green waste recovery services when moving operations to the RRRP and there are several management measures that will be undertaken to further ensure there is no unacceptable risk, including the following: • For green waste to be accepted at the RRRP it must be at low risk of major contamination, consisting of general landscaping materials, including grass clippings, leaves, tree and shrub branch clippings, palm fronds sourced from resident's premises and community public places; • Any minor contamination will be removed by Site staff and disposed of in the landfill; • If major contamination is detected the load will not be accepted, reloaded into the generator's vehicle and a fine / additional charge issued; • If major contamination is detected the load will not be accepted, reloaded into the generator's vehicle and a fine / additional charge issued; • Implementation of a Weed Management Plan across the site (as provided to the DWER as part of the Works Approval package);	is fit-for-purpose and that product users are aware of the risks relating to pathogens and weeds prior to acceptance and use of the product.

Condition (on draft)	Summary of applicant's comment	Department's response
	and • Sampling of the green waste product as per Condition 56 to confirm that the material do not present an unacceptable risk of pollution or environmental harm. Therefore, the Shire requests that requirements relating to pasteurisation of green waste be removed as indicated. With regards to requirement (b), only the community will utilise the Green Waste Drop Off and Mulch Collection Area. All commercial loads will pass through the weighbridge and deposited directly into the Green waste Stockpile Area following inspection by Site staff. Nominating independent drop-off areas is a critical for the separation of light and heavy vehicles and has operational advantages for the Shire by mitigating the double-handling of large green waste loads typically delivered by commercial contractors. Therefore, the Shire requests this minor change as indicated.	
Condition 19, Table 5, Light Vehicles	Crushing vehicles deters scavenging and allows for space-saving when transferring the metal down to Perth for further processing, a considerable undertaking for remote locations with Broome being a 2,200km trip to Perth. Vehicle crushing falls under Category 61A since the vehicles are being reprocessed before they are sent to Perth for scrap. This category is already part of the Draft Works Approval. The design capacity of 10,000 tonnes per annum for Category 61A will be sufficient under the initial operations of the RRRP. The Shire intends to stockpile and process light vehicles at the RRRP. To mitigate any environmental impacts, the Shire is proposing to construct a 600m2 concrete hardstand that will be used to store vehicles and undertake crushing operations on in order to mitigate any impacts to the environment. Therefore, the Shire requests these minor changes as indicated.	The Delegated Officer has made the proposed changes to the works approval under approved Category 61A activities. However, it is also noted that the Shire has not yet appointed a contractor for the works and was unable to provide a specific methodology. Additional controls may be applied to the licence following upon completion of time limited operations and once a contractor has been appointed.
Condition 20	The Shire proposes to remove Condition 20 in its entirety. Please refer to Line Item 17 for the justification of this change.	Condition relating to pasteurisation removed as per response above.
Condition 21	The Shire proposes to remove Condition 21 in its entirety. Please refer to Line Item 17 for the justification of this change.	Condition relating to pasteurisation removed as per response above.

Condition (on draft)	Summary of applicant's comment	Department's response
Condition 53, Table 9	All commercial waste or recycling loads will be recorded at the weighbridge, as well as community waste loads. However as per the site design, any community recycling loads will not be directed through the weighbridge. Instead, either volumetrics will be recorded or any material that will later be stockpiled by Site staff will pass through the weighbridge. Similarly, green waste recover loads by commercial operators leaving site will pass through the weighbridge, but community loads will be volumetrically counted. Purchases from the Reuse or 'Tip Shop' are to be recorded but would not go over the weighbridge. If this Condition allows for this proposed recording methodology, then no changes are requested.	The recording methodology is up to the discretion of the works approval holder. No changes made to condition.
Condition 53	The Shire proposes to remove Condition 54 in its entirety. Please refer to Line Item 17 for the justification of this change.	Condition relating to pasteurisation removed as per response above.
Condition 55	The Shire proposes to remove Condition 55 in its entirety since it relates to Condition 54. Please refer to Line Item 17 for the justification of this change to the Works Approval.	Condition relating to pasteurisation removed as per response above.
Condition 56	The Shire proposes to modify Condition 56 to remove pasteurisation. Please refer to Line Item 17 for the justification of this change to the Works Approval.	Condition amended to remove mention of pasteurisation.
Condition 57	The Shire proposes to remove Condition 57 in its entirety since it relates to Condition 56. Please refer to Line Item 17 for the justification of this change to the Works Approval.	The Delegated Officer notes that testing requirements were proposed as one of the controls for unpasteurised green waste mulch in line item 17. Therefore, the Delegated Officer has not removed the sampling requirements.
Condition 59	Condition 59 is interpreted as requiring a permanent water velocity probe be installed at each inlet and the outlet of the Surface Water Infiltration Pond. This is difficult to achieve as these structures are open swales rather than pipes. The management measures adopted for the RRRP are on par with modern facilities currently in operation and the design of the surface water management system ensures that offsite flows will be rare and heavily diluted. Considering the low environmental risk that outflows from the Surface Water Infiltration Pond poses, it is proposed to provide a record of times	The Delegated Officer acknowledges that continuous flow monitoring may be impractical to achieve given the open swale design. However, the Delegated Officer still considers it appropriate to monitor the volumes of waste being discharged offsite through infiltration and direct discharge. The purpose of this monitoring is to verify that direct offsite discharge is only occurring during extreme rainfall events and that dirty water from the Surface Water Collection Pond isn't continually being discharged into the clean Surface Water Infiltration Pond. This condition may be reviewed as part of the

Condition (on draft)	Summary of applicant's comment	Department's response
	that water discharges from the Surface Water Infiltration Pond following any rainfall events that cause it to overtop, with values recorded in a logbook. It is proposed not to monitor the volume of stormwater that enters the Surface Water Infiltration Pond as the inlet structures are open swales and it is unclear what environmental harm this is monitoring since the stormwater remains onsite, unless later overtopping this pond. The pond allows for the controlled infiltration of stormwater run-off through the base and would not affect the quality of surface water flows. The Shire requests these minor changes as indicated.	licence application or by a licence amendment after operation has begun.
Definitions, Table 16	Broken reference link	Amended.
Departure clause, Condition X	There is currently no departure clause within the Works Approval to account for any minor design variations during the construction process. Previous Works Approvals provided by DWER on other major waste management infrastructure projects have allowed for this and DWER's previous wording has been provided in the context of this Works Approval. While the Project's nominated Superintendent and CQA Consultant will endeavour to meet all infrastructure requirements as listed in Column 3 of Table 1 and Table 2, complications and difficulties always arise during construction works, and design variations may be required to address these issues. These variations would not impact the overall design principles that have been developed to ensure minimal environmental impact. Having this clause provides better context for the Environmental Compliance Report and Critical Containment Infrastructure Report, which will evidently discuss construction issues and their resolutions.	Once the department is satisfied all relevant conditions of the works approval have been complied with, the department may accept a licence application. Departure clauses were historically used in conditions to provide a level of flexibility to the works approval holder to satisfy legislative requirements however, they are no longer used due to their ambiguity and practical use by works approval/licence holders. Any deviations from specifications within conditions may result in a technical non-compliance however, the department has discretion when considering whether there have been material changes to the risk profile of the site/project with project modifications. If material deviations from the works approval is required, the works approval holder should apply for an amendment. Beyond that, minor deviations can be accounted for in the compliance reports and subject to assessment by the department.

Appendix 2: Application validation summary

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)					
Application type					
Works approval	☒				
Licence	☐	Relevant works approval number:		None	☐
		Has the works approval been complied with?	Yes ☐ No ☐		
		Has time limited operations under the works approval demonstrated acceptable operations?	Yes ☐ No ☐ N/A ☐		
		Environmental Compliance Report / Critical Containment Infrastructure Report submitted?	Yes ☐ No ☐		
		Date report received:			
Renewal	☐	Current licence number:			
Amendment to works approval	☐	Current works approval number:			
Amendment to licence	☐	Current licence number:			
		Relevant works approval number:		N/A	☐
Registration	☐	Current works approval number:		None	☐
Date application received		13/9/2022			
Applicant and premises details					
Applicant name/s (full legal name/s)		Shire of Broome			
Premises name		Broome Regional Resource Recovery Park			
Premises location		Lot 593 and 595 on DP 71791, McGuigan Road and the northern section of Lot 504 on DP41427 Broome - Cape Leveque Road			
Local Government Authority		Shire of Broome			
Application documents					
HPCM file reference number:		DER2022/000478			
Key application documents (additional to application form):		Environmental Assessment and Management Plan Surface Water Management Plan Asbestos Management Plan Weed Management Plan Feral Species Management Plan SWMS technical specifications Bushfire Management Plan Groundwater Management Plan CQA Plan			
Scope of application/assessment					

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)	
Summary of proposed activities or changes to existing operations.	Construction of Stage 1 of the Broome Regional Resource Recovery Park.

Category number/s (activities that cause the premises to become prescribed premises)

Table 1: Prescribed premises categories

Prescribed premises category and description	Proposed production or design capacity	Proposed changes to the production or design capacity (amendments only)
Category 13: Crushing of building material	40,000 tpa	
Category 57: Used tyre storage	100,000 tyres or 2,500 tpa	
Category 61: Liquid waste facility	10,500 tpa	
Category 61A: Solid waste facility	10,000 tpa	
Category 62: Solid waste depot	100,000 tpa	
Category 63: Class I inert landfill site	5,000 tpa (or 24,000 m^3 pa)	
Category 70 – screening etc. of material	50,000 tpa	

Legislative context and other approvals

Has the applicant referred, or do they intend to refer, their proposal to the EPA under Part IV of the EP Act as a significant proposal?	Yes ☐ No ☒	The Shire intends to refer the Broome RRRP Class III landfill (Stage 2) works approval application under Part IV of the EPA act.
Does the applicant hold any existing Part IV Ministerial Statements relevant to the application?	Yes ☐ No ☒	N/A
Has the proposal been referred and/or assessed under the EPBC Act?	Yes ☐ No ☒	N/A
Has the applicant demonstrated occupancy (proof of occupier status)?	Yes ☒ No ☐	Letter from the Water Corporation transferring Lot 550 on Plan 421448 to the Shire of Broome.
Has the applicant obtained all relevant planning approvals?	Yes ☐ No ☐ N/A ☒	The Broome RRRP is deemed a Public Works and is subject to a works exemption under the Planning and Development Act 2005.

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)		
Has the applicant applied for, or have an existing EP Act clearing permit in relation to this proposal?	Yes ☐ No ☐	CPS No: CPS 9542-1 .
Has the applicant applied for, or have an existing CAWS Act clearing licence in relation to this proposal?	Yes ☐ No ☒	Application reference No: N/A Licence/permit No: N/A
Has the applicant applied for, or have an existing RIWI Act licence or permit in relation to this proposal?	Yes ☒ No ☐	Application reference No: the Shire intends to submit an application. Licence/permit No: N/A
Does the proposal involve a discharge of waste into a designated area (as defined in section 57 of the EP Act)?	Yes ☒ No ☐	Name: Broome Groundwater Area Type: Proclaimed Groundwater Area Has Regulatory Services (Water) been consulted? Yes ☒ No ☐ N/A ☐ Regional office: North West
Is the Premises situated in a Public Drinking Water Source Area (PDWSA)?	Yes ☐ No ☒	Name: N/A Priority: N/A Are the proposed activities/ landuse compatible with the PDWSA (refer to WQPN 25)? Yes ☐ No ☐ N/A ☒
Is the Premises subject to any other Acts or subsidiary regulations (e.g. *Dangerous Goods Safety Act 2004, Environmental Protection (Controlled Waste) Regulations 2004, State Agreement Act xxxx*)	Yes ☐ No ☒	N/A
Is the Premises within an Environmental Protection Policy (EPP) Area?	Yes ☐ No ☒	N/A
Is the Premises subject to any EPP requirements?	Yes ☐ No ☒	N/A

SECTION 1: APPLICATION SUMMARY (as updated from validation checklist)		
Is the Premises a known or suspected contaminated site under the *Contaminated Sites Act 2003*?	Yes ☐ No ☒	Classification: N/A Date of classification: N/A