Application for Works Approval

Division 3, Part V *Environmental Protection Act 1986*

Works Approval Number	W6289/2019/1
Applicant	Town of Port Hedland
File Number	DER2019/000448
Premises	South Hedland Community Recycling Centre Reserve 41342 North Circular Road SOUTH HEDLAND WA 6721 Lot 5813 on Plan 189435 As defined by the coordinates in Schedule 1 of the Works Approval
Date of Report	7 February 2020
Status of Report	Final

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1. Definitions of terms and acronyms

In this Decision Report, the terms in Table 1 have the meanings defined.

Table 1: Definitions

Term	Definition
AACR	Annual Audit Compliance Report
ACN	Australian Company Number
AER	Annual Environment Report
Category/ Categories/ Cat.	Categories of Prescribed Premises as set out in Schedule 1 of the EP Regulations
CRC	Community Recycling Centre
CS Act	*Contaminated Sites Act 2003* (WA)
C&D	construction and demolition waste
C&I	commercial and industrial waste
Decision Report	refers to this document.
Delegated Officer	an officer under section 20 of the EP Act.
DFES	Department of Fire and Emergency Services
Department	means the department established under section 35 of the *Public Sector Management Act 1994* and designated as responsible for the administration of Part V, Division 3 of the EP Act.
DWER	Department of Water and Environmental Regulation As of 1 July 2017, the Department of Environment Regulation (DER), the Office of the Environmental Protection Authority (OEPA) and the Department of Water (DoW) amalgamated to form the Department of Water and Environmental Regulation (DWER). DWER was established under section 35 of the *Public Sector Management Act 1994* and is responsible for the administration of the *Environmental Protection Act 1986* along with other legislation.
EPA	Environmental Protection Authority
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
Existing Licence	The Licence issued under Part V, Division 3 of the EP Act and in force prior to the commencement of, and during this Review
HDPE	High Density Polypropylene
m^3	cubic metres
Minister	the Minister responsible for the EP Act and associated regulations
MS	Ministerial Statement
MSW	municipal solid waste
NEPM	National Environmental Protection Measure
Noise Regulations	*Environmental Protection (Noise) Regulations 1997* (WA)
Occupier	has the same meaning given to that term under the EP Act.
PM	Particulate Matter
PM_{10}	used to describe particulate matter that is smaller than 10 microns (µm) in diameter
Prescribed Premises	has the same meaning given to that term under the EP Act.
Premises	refers to the premises to which this Decision Report applies, as specified at the front of this Decision Report

Primary Activities	as defined in Schedule 2 of the Revised Licence
Review	this Licence review
Revised Licence	the amended Licence issued under Part V, Division 3 of the EP Act following the finalisation of this Review.
Risk Event	As described in *Guidance Statement: Risk Assessment*
RIWI Act	*Rights in Water Irrigation Act 1914*
ToPH	Town of Port Hedland
UDR	*Environmental Protection (Unauthorised Discharges) Regulations 2004* (WA)
Works Approval Holder	Town of Port Hedland
µg/m^3	micrograms per cubic metre
µg/L	micrograms per litre

2. Purpose and scope of assessment

The Town of Port Hedland (ToPH) intends to develop a Community Recycling Centre (CRC) within the existing South Hedland Landfill Facility Premises boundary, currently licenced under Licence L6917/1997/8. The purpose of the CRC is to assist the region in minimising waste generation and maximising waste diversion from the landfill as per the ToPH's Waste Management Strategy that was developed in 2018. The Strategy indicated a key high priority outcome as introducing a kerbside commingled recycling collection service. Other high priority outcomes included the development of a modern CRC, green waste mulching and the establishment of a reuse shop.

2.1 Background

The proposed CRC site is situated within the western side of the South Hedland Landfill (Landfill) Premises boundary (See Figure 1). The Landfill has been operational under Licence L6917/1997/8 as a Class II / Class III Putrescible landfill site since the 1990s and currently consists of an after-hours drop off area, a community drop off area, stockpiles of clean fill, tyres and construction and demolition waste, a landfill with dedicated asbestos and animal disposal areas. The Landfill site is currently licenced as Category 57, 61 and 64 Prescribed Premises. The site also includes a liquid waste facility located in the southwest corner consisting of two concrete lined ponds, a HDPE lined aerated receiving pond, and a Sequencing Batch Reactor (SBR) treatment system situated on a hardstand. The treated wastewater from the liquid waste facility is used on site for dust suppression. Waste types currently accepted at the Landfill include MSW, C&I, C&D, soil, green waste and scrap metal. It is expected that scrap metal, green waste and C&D waste will be accepted at the new CRC for recycling, with small volumes of MSW accepted for disposal.

Table 2 lists the prescribed premises categories that have been applied for.

Table 2: Prescribed Premises Categories that have been applied for.

Classification of Premises	Description	*Approved Premises production or design capacity or throughput*
Category 62	Solid waste depot: premises on which waste is stored, or sorted, pending final disposal or re-use.	25,000 tonnes per year

2.2 Application details

The Department received an application from the ToPH for a works approval (W6289/2019/1) to construct a new CRC within the Existing Landfill Premises boundary. The Application includes the construction of an updated entrance, parking and roads, reuse area, recycling area, multi-tiered drop-off facility, after hours drop off facility, service areas, and a storm water management system.

Table 3 lists the documents submitted during the assessment process.

Table 3: Documents and information submitted during the assessment process

Document/information description	Date received
Application – new works approval- Town of Port Hedland – South Hedland Landfill – Lot 5813 on Plan 189435 South Hedland - Application form and supporting documents	23/08/2019

The main entrance to the CRC will be via the existing main entrance to the Landfill, off North Circular Road, in the north east corner of the Premises. Customer vehicles will enter the site via the weigh bridge and be inspected before proceeding to the CRC. Heavy vehicles will be

separated after the weighbridge via a separate commercial access road. Sealed roads and car parking areas will be established within the CRC with parking bays located next to the Reuse Shop, Recycling Area and Multi-tier Drop off facility. The Reuse Area carpark will have 31 car bays and 6 trailer bays, the Recycling Area will have 11 bays and the Multi-Tier Facility will have 12 bays.

Reuse Shop

The proposed layout has been designed to ensure efficient operation, use of available space and alignment with the Waste Hierarchy. The CRC internal roads have been designed to flow one-way through areas in line with the Waste Hierarchy, encouraging reuse as a first priority followed by recycling, recovery and finally disposal. This is achieved by situating the Reuse Shop at the front of the site to allow drop-off of materials for reuse/resale. The Reuse shop will consist of a 20m x 12m enclosed building and a 26m x 12m forecourt area for the collection, repair and sale of used goods back to the community. All electrical items suitable for sale will be tested and tagged, any items deemed unsuitable for resale will be taken to the designated area for recycling or disposed of to landfill. A provisional space will be allocated within the Reuse Area next to the Reuse Shop to house infrastructure for the future Container Deposit Scheme (CDS) which the WA State Government aims to introduce by 02 June 2020. The area will include space for the initial acceptance of materials, along with sorting, processing and loading areas.

Recycling Area

The next area in the flow of the CRC is the Recycling Area with designated drop off areas which complement the kerbside recycling collections as well as a bulk waste drop off area. Customers can drop off Hazardous Household Waste (HHW), scrap metal, commingled recycling, cardboard, electric waste, and larger volumes of green waste and C&D. The Recycling Area will include a drop off zone for HHW, this will occur in a fully enclosed HHW collection shed. HHW accepted will include materials such as oil, paint, batteries, fluorescent tubes and globes, aerosols and pesticides, etc. There will be designated storage areas for each HHW waste type and the shed will be fully enclosed with bunding to contain any leaks or spills. HHW will be removed from site by a qualified contractor for appropriate treatment and disposal. A 50m x 12m concrete hardstand area will be constructed to allow customers to drop off a range of recyclable material including scrap metal, cardboard and electric waste. These items will be placed in the designated 30m^3 skip bins. Larger volumes of green waste and C&D waste and other bulky items including white goods and mattresses can be dropped off at the 47m x10m concrete hardstand bulk waste drop off area. Cardboard, commingled recycling and scrap metal will be removed from site by a contractor for recycling. Green waste and C&D will be stockpiled and used onsite or removed from the site by a contractor for recycling.

Multi-Tier Drop-off Facility

Customers can then leave the CRC via the roundabout, or continue onto the Multi-Tier drop-off facility. Vehicles with mixed domestic waste will be directed here for the safe disposal of their refuse waste. The facility will consist of a three-sided structure with a saw tooth arrangement which contains 6 bays to deposit general waste, scrap metal and green waste into designated 30m^3 hook lift bins (Figures 1 and 2). The bins are located flush with the floor of the facility and a safety wall will be installed to protect the customers. Edge protection will also be installed to prevent cars reversing too far. Each bin is accessible by 2 elevated parking pays in which vehicles reverse up to and unload mixed waste into the hook lift bins below. The hook bins will be sealed to ensure no leakage of liquids or materials. Refuse will be taken to the sites landfill for disposal.

Service Areas

The CRC will incorporate 8000m^2 of unsealed hardstand areas to service as the Service Area. The Service Area is along the eastern side of the CRC and will allow staff to access and service each area while maintaining separate from the general public and customers. The Service Area

will be bounded by the commercial access road.

After Hours Drop-off Facility

The Landfill has been operating an After Hours Drop-off Facility along the northern boundary of the Premises for one year and it has reduced illegal dumping within Port Hedland. The After Hours Drop off Facility currently consists of an unsealed area approximately 560m^2 in size with fences on 3 sides and 15m^3 skip bins. This application includes extending the current fencing at the front of the facility to help contain any windblown waste, the installation of a chain to prohibit customers using the facility during operational hours and the installation of a concrete hardstand to provide a sealed surface to contain any spills and improve amenity.

Storm Water Management System

A stormwater management system has been incorporated into the design of the CRC and includes a stormwater pond along the northern boundary (the low point of the site). This stormwater pond will be fed from a perimeter drain along the toe of the landfill. The CRC includes a range of stormwater infrastructure which will connect up to the perimeter drain. These include a variety of sealed surfaces along with kerbing, and drains and underground pipework diverting stormwater from the CRC to the perimeter drains surrounding the landfill footprint.

Operating Hours

The CRC operating hours will be the same as the Landfill hours which are as shown below:

- Monday to Friday 0730 to 1630;
- Saturday and Sunday 0800 to 1600; and
- Closed Christmas and Good Friday.

The CDS shed will close 30 minutes before the other areas to ensure final counts of the containers are complete in time for facility close.

2.3 Infrastructure

The CRC facility infrastructure, as it relates to Category 62 activities, is detailed in Table 4 and with reference to the Site Plan (attached in the Works Approval).

Table 4 lists infrastructure associated with each prescribed premises category.

Table 2: CRC facility Category 62 infrastructure

	Infrastructure	**Site Plan Reference (Figures 1 and 2)**
	Prescribed Activity Category 62	
Category 62: Solid Waste Depot – premises on which waste is stored, or sorted, pending final disposal or re-use.		
1	Construction of Reuse Shop 20x12m enclosed building and 26x12m concrete sealed forecourt area	Reuse shop
2	Construction of Multi-tier Drop Off Zone – Steel canopy cover 60x12m with six 30m^3 hook lift bins	Multi-tier drop off zone
3	Installation of Skip bins	After hour drop off and Recycling area
4	Construction of 47x10m bulk waste/ green waste drop off area – concrete hardstand	Green waste drop off
5	Construction of Recycling area 50x12m concrete hardstand area with 30m^3 skip bins	Recycling area

	Infrastructure	Site Plan Reference (Figures 1 and 2)
6	Extension of After hour drop off – concrete hardstand base -15m^3 skip bins	After hour drop-off
7	Construction of Provisional CDS	Reuse shop
8	Construction of unsealed hardstand areas	Unsealed hardstands
	Directly related activities	
1	Construction of storm water management system	Surface Water Swales
	Other activities	
1	Construction of Parking bays	Sealed Roads/Areas
2	Guardhouse and weighbridge – pre-existing infrastructure	Guardhouse and weighbridge
3	Construction of sealed roads and drop off areas	Sealed Roads/Areas
4	Front end loader	N/A
5	Hook lift bin trucks	Operational access areas
6	Vehicle wash-down bay – existing infrastructure	Existing Infrastructure

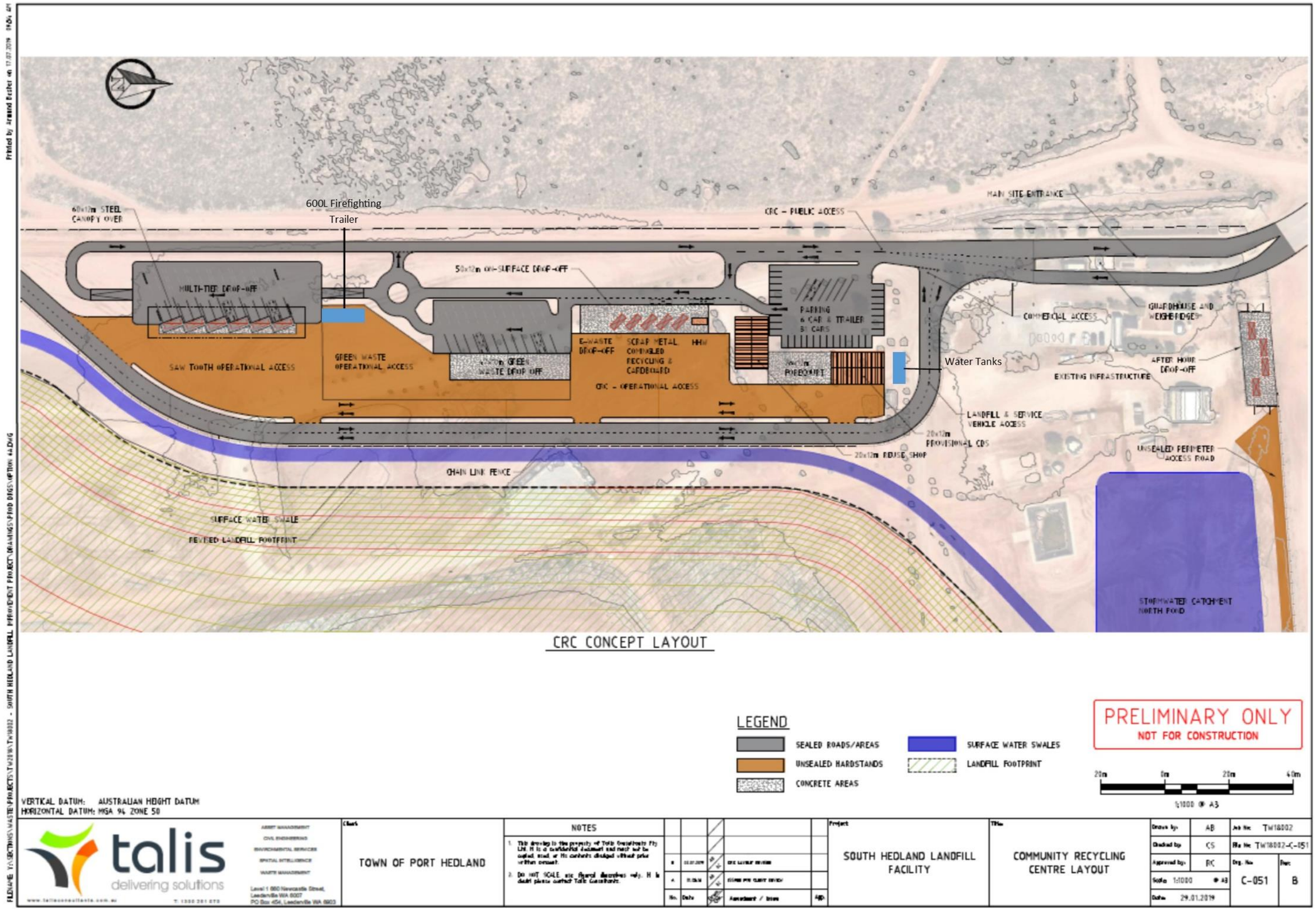

Figure 1: CRC Site Plan

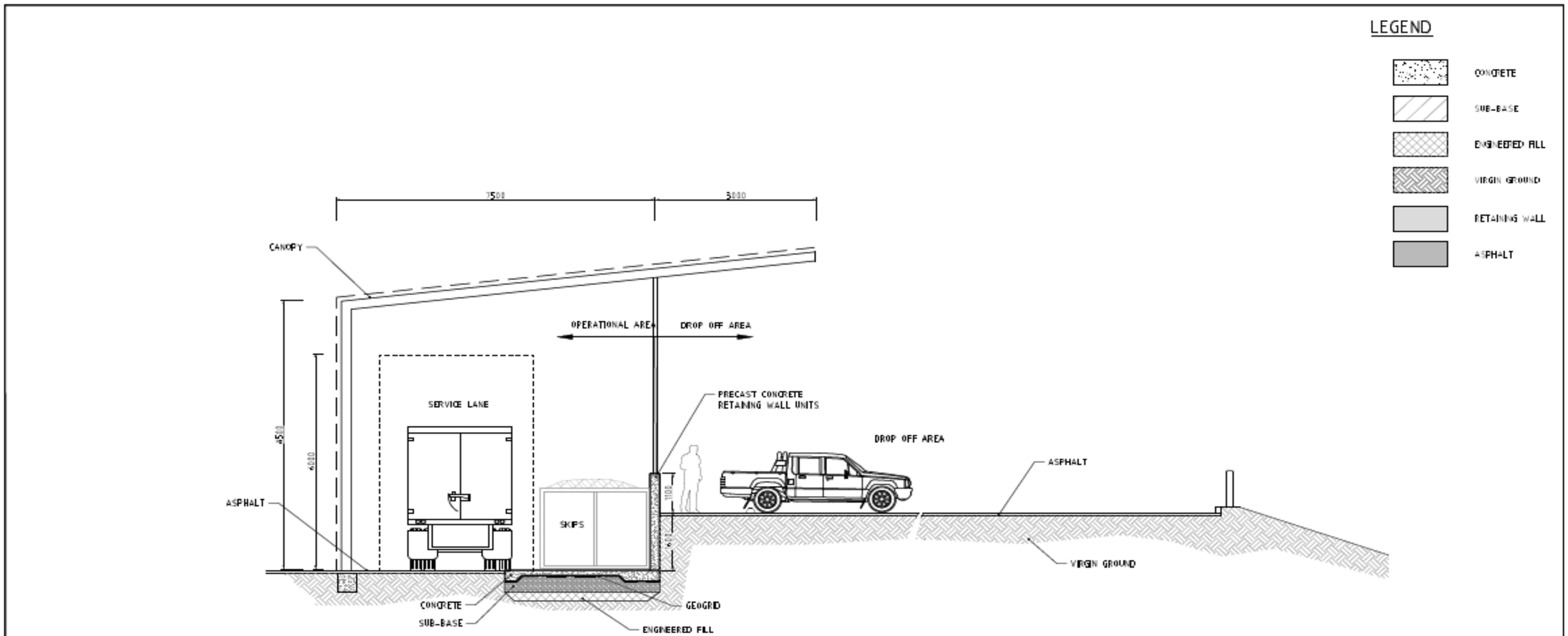

Figure 2: Multi-Tier Drop-off Facility

3. Legislative context

3.1 Part IV of the EP Act

Section 6.2 of the Application form advises there is no identifiable need for referral pursuant to Part IV of the EP Act.

3.2 Contaminated sites

The Premises was classified as 'Possibly Contaminated – investigation required' under the *Contaminated Sites Act 2003* on 12 April 2016.

3.3 Other relevant approvals

3.3.1 Planning approvals

In Western Australia, Local Governments are required to provide municipal waste services through enacted legislation. The establishment of the CRC is considered a public work, which is subject to a Public Works Exemption under the *Planning and Development Act 2005* (PD Act). The PD Act gives exempt bodies the power to undertake a public work or take land for the purposes of a public work without obtaining development approval from the responsible authority under the relevant planning scheme subject to certain conditions.

3.4 Part V of the EP Act

3.4.1 Applicable regulations, standards and guidelines

The overarching legislative framework of this assessment is the EP Act and EP Regulations.

The guidance statements which inform this assessment are:

- Guidance Statement: Regulatory principles (July 2015)
- *Guidance Statement: Setting conditions (October 2015)*
- *Guidance Statement: Publication of Annual Audit Compliance Reports (May 2016)*
- *Guidance Statement: Licence duration (August 2016)*
- *Guidance Statement: Environmental Standards (September 2016)*
- *Guidance Statement: Environmental Siting (November 2016)*
- *Guidance Statement: Land Use Planning (February 2017)*
- *Guidance Statement: Risk Assessments (February 2017)*
- *Guideline: Decision Making (June 2019)*
- *Guideline: Industry Regulation Guide to Licensing (June 2019)*

3.4.2 Works approval and licence history

Table 6 summarises the works approval and licence history for the premises.

Table 3: Works approval and licence history

Instrument	Issued	Nature and extent of works approval, licence or amendment
L6917/1997/1	30/10/2000	Licence re-issue
L6917/1997/2	02/11/2001	Licence re-issue
L6917/1997/3	25/10/2002	Licence re-issue
L6917/1997/4	18/10/2003	Licence re-issue
L6917/1997/5	18/10/2004	Licence re-issue
L6917/1997/6	18/10/2005	Licence re-issue
L6917/1997/7	18/10/2008	Licence re-issue
L6917/1997/7	23/09/2010	Licence amendment to include septage ponds
L6917/1997/8	17/10/2011	Licence reissue
L6917/1997/8	29/04/2016	Amend to extend licence duration to 2035.
L6917/1997/8	28/09/2016	Inclusion of SBR for WWTP. Licence format updated and includes increase capacity for liquid waste and solid waste
L6917/1997/8	4/07/2018	Amendment Notice 1: Initiated by the Licensee to shred the existing tyre stockpile and bury the shredded tyres in two mono cells and amendment to buffer between active cell and boundary fence to enable burial of tyres.
L6917/1997/8	3/09/2018	Amendment Notice 2: DWER initiated amendment to rectify an administrative error in the licence.
L6917/1997/8	19/10/2018	Amendment Notice 3: The Licence Holder applied for a licence amendment to clarify types of waste the Premises is licensed to accept in accordance with DWER Controlled Waste Category List (as amended in April 2015) and the addition of a Controlled waste category type (Waste code L150).
L6917/1997/8	06/12/2019	DWER initiated licence amendment to consolidate/amalgamate separately issued amendment notices in the licence. This amendment includes amendments requested from the Licence Holder including a reduction in daily cover requirements, amendments to the monitoring of ambient groundwater quality monitoring point references to align with current practices, and authorise the use of alternative cover material.
W6289/2019/1	7/02/2020	New Works Approval to authorise the construction of the Landfill CRC

3.4.3 Compliance inspections and compliance history

A compliance inspection was conducted on 15 March 2019 at the Landfill Licenced under L6917/1997/8 within the boundary of which the CRC will be situated. The inspection uncovered potential non-compliances relating to the following:

- Annual reporting;
- Waste located within 35m of the premises boundary;
- Battery storage;
- Monitoring of treated wastewater quality;
- Spill management.

A licence amendment was applied for on the 30 August 2019 in response to the compliance inspection which aims to correct inaccuracies within the Existing Licence to align the Existing Licence with current procedures on site. DWER's Compliance and Enforcement branch closed off the inspection on 17 June 2019 noting the ToPH's commitment to have both the temporarily stored (after hours waste drop off) and legacy landfilled waste relocated such that a 35m distance from the Premises boundary is reinstated by 30 June 2020. They also noted the ToPH's commitment to construct a CRC within this time period. This Works Approval application progresses this commitment.

The Site has had previous non-compliance issues involving tyre stockpiling however these matters were resolved and closed by DWER's Compliance and Enforcement Branch on 30 October 2018.

Previous non-compliances found on the Departments Incidents Complaints Management System include:

- exceeding the liquid waste facility capacity over the 2014 annual reporting period, inaccuracies within the 2014 AACR and AER, groundwater monitoring in July 2014 did not account for Total Nitrogen;
- Unauthorised fires recorded on 05 September 2014 and 05 August 2014;
- 11 non-compliances recorded after a site inspection on 30 April 2014.

4. Consultation

The application was advertised on the DWER Website on 03 October 2019 and in the West Australian on 07 October 2019 for a comment period ending on 24 October 2019. No submissions were received.

DWER referred the *South Hedland Waste Management Facility Fire Management Plan 2019 – Ver 3* to DFES on 08 November 2019 and a response was received on 04 December 2019 stating that based on the information provided, DFES has no objections as long as the detail and procedures in the document are adhered to.

DWER referred the draft Works Approval and Decision Report to the Applicant on 29 January 2020. The Applicant submitted comments on 05 February 2020 as detailed in Appendix 2.

5. Location and siting

5.1 Siting context

The site is located on North Circular Road in South Hedland, Western Australia, 3km south of the Port Hedland International Airport and 2.5km southeast of the South Hedland Town Centre. The site is surrounded by a combination of unallocated and leased Crown lands which consist of native vegetation and several stormwater infiltration/evaporation basins which resulted from sand mining operations. An unnamed access road is situated approximately 215m to the east of the site followed by a large rail laydown area for a private rail that runs parallel to the access road. Immediately south of the site is a privately owned quarry operation from which the landfill purchases fill material. Approximately 750m west of the site is the nearest residential area to the landfill.

5.2 Residential and sensitive Premises

The distances to residential and sensitive receptors are detailed in Table 7.

Table 4: Receptors and distance from activity boundary

Sensitive Land Uses	Distance from Prescribed Activity
Residential Premises	750m west of the Premises

5.3 Specified ecosystems

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 distances to specified ecosystems are shown in Table 8. Table 8 also identifies the distances

to other relevant ecosystem values which do not fit the definition of a specified ecosystem.

The table has also been modified to align with the *Guidance Statement: Environmental Siting.*

Table 5: Environmental values

Specified ecosystems	**Distance from the Premises**
Leslie Saltfields System (Wetland DIWA)	14.31km north east of the Premises
Biological component	**Distance from the Premises**
Threatened/Priority Flora	No recorded threatened or priority flora species within 13km of the Premises boundary.
Threatened/Priority Fauna	Multiple threatened fauna species found within a 7km radius from the Premises boundary including 2 Endangered, 2 Vulnerable, 1 Near Threatened, 12 Least Concern, and 1 Data Deficient.

5.4 Groundwater and water sources

The distances to groundwater and water sources are shown in Table 9.

Table 6: Groundwater and water sources

Groundwater and water sources	**Distance from Premises**	**Environmental value**
Public drinking water source areas	37.22km west of Premises	Priority 1
Beebingarra Creek	~5.8km east of the Premises	Non Perennial Major watercourse
Minor un-named waterway	~4km west of the Premises ~3.3km east of the Premises	Non-perennial
Groundwater	Depth to groundwater encountered at approximately 3.88- 5.67mbgl	Groundwater in the South Hedland town site is in excess of 4,000 mg/L TDS. TDS in bore monitoring samples on site as per the 2015 AER indicate an average TDS in excess of 5,000mg/L. No groundwater use in the area
Designated areas		**Distance**
Pilbara surface water area (RIWI Act surface water area)		Within the Premises boundary
Pilbara groundwater area (RIWI Act groundwater area)		Within the Premises boundary

5.5 Soil type

The site is characterised by floodplain deposits containing sand, silt, clay and gravel. The shallow subsurface conditions within the area are described as shelly silty sand with strong gravelly and cemented layers possibly overlain by former mud flats (Port Hedland Geological Survey of Western Australia, 1:50,000 Urban Geology Series, (Department of Lands and Surveys (1983)).The silty sands in the region are known as pindan sand, characterised by their

red colour and high iron and aluminium hydroxide content. Pindan displays a self-cementation property when drying.

5.6 Meteorology

5.6.1 Wind direction and strength

The closest weather station for wind frequency data is the Bureau of Meteorology (BoM) Port Hedland Airport site 004032. Prevailing winds are to the east and south east in the mornings, and to the north and north west in the afternoons (Figure 3). It is important to note that these wind roses show historical wind speed and wind direction data for Port Hedland Airport weather station and should not be used to predict future data.

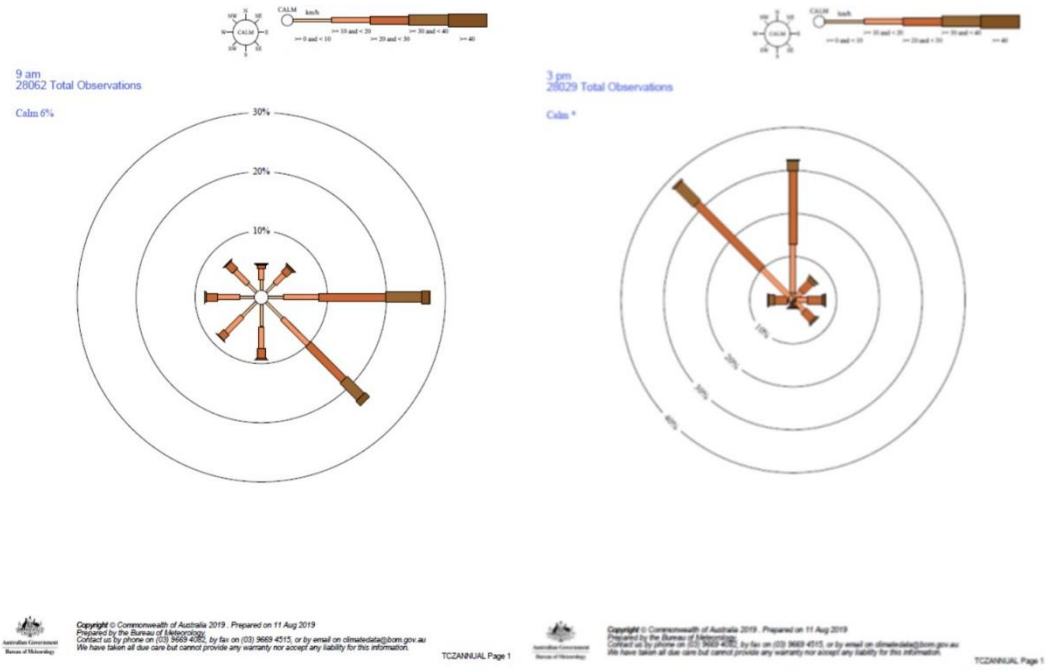

Figure 3: Annual wind rose for 9am and 3pm at Halls Creek site 002021.

Source: Bureau of Meteorology website www.bom.wa.gov.au

5.6.2 Rainfall and temperature

The closest weather station for rainfall data is the BoM Port Hedland Airport site 004032. Maximum average rainfall is received in January and February annually. Minimum average rainfall is received August to November annually (Figure 4).

Highest average temperatures are experiences November to March annually. Lowest average temperatures are experienced May to August annually (Figure 4).

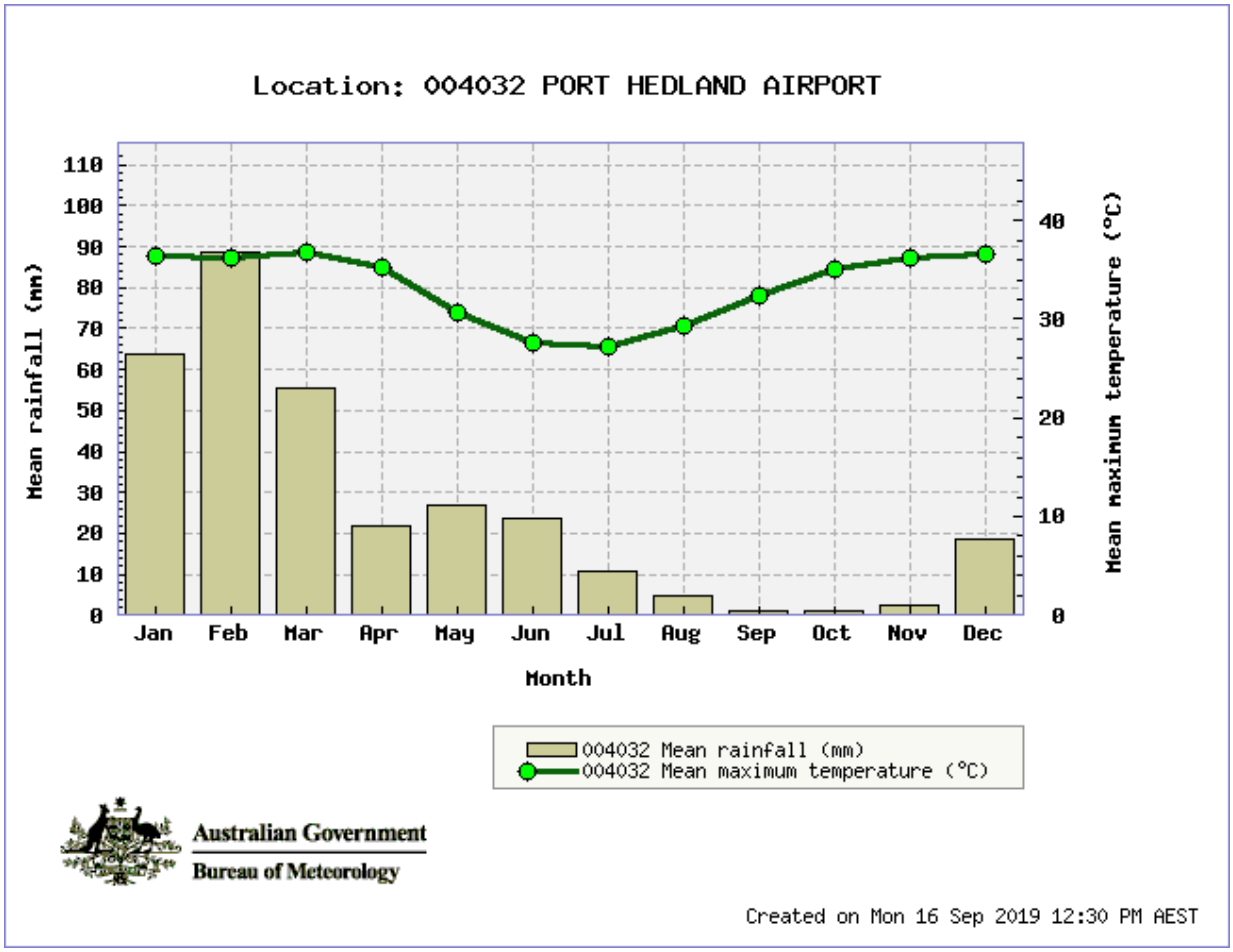

Figure 4: Average annual rainfall (mm) and temperature (℃) at Port Hedland Airport site 00432.

Source: Bureau of Meteorology website www.bom.wa.gov.au

6. Risk assessment

6.1 Determination of emission, pathway and receptor

In undertaking its risk assessment, DWER will identify all potential emissions pathways and potential receptors to establish whether there is a Risk Event which requires detailed risk assessment.

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. Where there is no actual or likely pathway and/or no receptor, the emission will be screened out and will not be considered as a Risk Event. In addition, where an emission has an actual or likely pathway and a receptor which may be adversely impacted, but that emission is regulated through other mechanisms such as Part IV of the EP Act, that emission will not be risk assessed further and will be screened out through Tables 10 and 11.

The identification of the sources, pathways and receptors to determine Risk Events are set out in Tables 10 and 11 below.

Table 7. Identification of emissions, pathway and receptors during construction

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Construction, mobilisation and positioning of infrastructure	Vehicle movements on unsealed access roads	Noise	Surrounding land users Residential estate 750m west of the Premises	Air / wind dispersion	Amenity impacts causing nuisance	No	The Delegated Officer considers the separation distance between the source and receptors as adequate to inform the risk of noise emissions during construction as not foreseeable. Noise can be adequately regulated by the EP Noise Regulations.
		Dust	Surrounding land users Residential estate 750m west of the Premises Native vegetation on leased Crown land to the northern boundary and unallocated Crown land immediately to the south and east of the Premises boundary		Health and amenity impacts - Potential suppression of photosynthetic and respiratory functions	Yes	The Delegated Officer considers there is a potential risk of dust emissions from vehicle movements on unsealed land during the construction phase of the project. These emissions have potential to impact on the receptors and therefore the Delegated Officer considers the risk of dust needs to be assessed for this application.

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		**Potential emissions**	**Potential receptors**	**Potential pathway**	**Potential adverse impacts**		
Construction, mobilisation and positioning of infrastructure	Construction of new buildings, plant and infrastructure	Noise	Surrounding land users Residential estate 750m west of the Premises	Air / wind dispersion	Amenity impacts causing nuisance	No	The Delegated Officer considers the separation distance between the source and receptors as adequate to inform the risk of noise emissions during construction as not foreseeable. Noise can be adequately regulated by the EP Noise Regulations.
		Dust	Surrounding land users Residential estate 750m west of the Premises Native vegetation on leased Crown land to the northern boundary and unallocated Crown land immediately to the south and east of the Premises boundary		Health and amenity impacts - Potential suppression of photosynthetic and respiratory functions	Yes	The Delegated Officer considers there is a potential risk of dust emissions from construction activities on site. These emissions have potential to impact on the receptors and therefore the Delegated Officer considers the risk of dust needs to be assessed for this application.

Table 8: Identification of emissions, pathway and receptors during operation (information only)

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Waste acceptance and handling	Green waste Refuse Commingled recycling Contaminated loads	Odour	Surrounding land users Residential estate 750m west of the Premises	Air / Wind dispersal	Amenity impacts causing nuisance	No	The EPA's Guidance Statement No. 3 – Separation Distances between Industrial and Sensitive Land Uses (2005) indicates that the recommended separation distance for solid waste depots is 200m. As the closest sensitive receptor to the Premises is 740m to the west, the Delegated Officer considers the separation distance to be adequate to inform the risk of odour emissions as not foreseeable. The Delegated Officer considers the Applicants controls for odour management as adequate to inform the risk of odour emissions as not foreseeable. Odour can be adequately regulated by section 49 of the EP Act.
	Material handling Operation of equipment onsite Road and engine noise from vehicles entering and exiting the site.	Noise	Surrounding land users Residential estate 750m west of the Premises	Air / Wind dispersal	Amenity impacts causing nuisance	No	The Delegated Officer considers the separation distance between the source and receptors as adequate to inform the risk of noise emissions during operation as not foreseeable. Noise can be adequately regulated by the EP Noise Regulations.
	Waste handling	Dust	Surrounding land users Residential estate 750m west of the Premises Native vegetation on leased Crown land to the northern boundary and unallocated Crown land immediately to the south and east of the Premises boundary	Air / Wind dispersal	Health and amenity impacts - Potential suppression of photosynthetic and respiratory functions	Yes	The Delegated Officer considers there is a potential risk of dust emissions from waste handling on site. These emissions have potential to impact on the receptors and therefore the Delegated Officer considers the risk of dust needs to be assessed for this application.

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
	Waste acceptance and handling	Litter	Surrounding land users Residential estate 750m west of the Premises Threatened Fauna	Air/ Wind dispersal	Amenity impacts causing nuisance Health impacts to wildlife Attraction of vermin	Yes	The Pilbara region is prone to tropical cyclones which bring high levels of wind and rainfall between January and April, therefore the Delegated Officer considers the risk of windblown waste associated with waste acceptance and handling needs to be assessed for this application.
Waste storage and handling	Waste storage and handling	Contaminated Stormwater	Surrounding land users Residential estate 750m west of the Premises Native vegetation on leased Crown land to the northern boundary and unallocated Crown land immediately to the south and east of the Premises boundary	Direct discharge Overland flow	Health and amenity impacts Detrimental health impacts to native vegetation on neighbouring Crown lands.	Yes	Waste material accepted at the site will include green waste, HHW, and general waste. These waste streams have the potential to contaminate stormwater. The Pilbara region is prone to tropical cyclones which bring high levels of rainfall between January and April, therefore the Delegated Officer considers the risk of contaminated stormwater needs to be assessed for this application.
			Groundwater Surface water	Direct discharge Surface runoff - overland flow	Groundwater contamination Surface water contamination	Yes	Within the RIWI Act Pilbara Surface Water Area Within the RIWI Act Pilbara Groundwater Area Depth to groundwater encountered at approximately 3.88- 5.67mbgl The Delegated Officer considers the location within RIWI Act surface and groundwater areas and the depth to groundwater water warrants a full review of the risk associated with contaminated stormwater associated with waste storage and handling for this application.

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Waste storage and handling	Waste storage and handling	Vermin and Feral Animals	Surrounding land users Residential estate 750m west of the Premises Threatened Fauna	Over land movement	Health and amenity impacts	Yes	The Delegated Officer considers that given the nature of waste accepted onto site and the health and amenity risks associated with the emission, there is the potential for vermin and feral animals impacting on receptors. Therefore the Delegated Officer considers there is a need for a full risk assessment for vermin and feral animals on site.
Vehicle movements	Vehicle movements on-site	Dust	Surrounding land users Residential estate 750m west of the Premises Native vegetation on leased Crown land to the northern boundary and unallocated Crown land immediately to the south and east of the Premises boundary	Air / wind dispersion	Health and amenity impacts causing nuisance	No	The Delegated Officer considers the sealed customer access road and hardstand areas within the CRC inform the risk of dust emissions associated with vehicle movement's an-site and to and from the Premises as not foreseeable.
		Noise	Surrounding land users Residential estate 750m west of the Premises	Air / wind dispersion	Health and amenity impacts causing nuisance	No	The Delegated Officer considers the noise produced from vehicle movements associated with the new CRC pose no increased risk than the noise currently produced from vehicle movements at the existing landfill site. Noise can be adequately regulated by the EP Noise Regulations.
Waste acceptance, storage and handling	Arson, spontaneous combustion, bushfire, accidental ignition	Fire (Smoke)	Surrounding land users Residential estate 750m west of the Premises	Air / wind dispersion	Health impacts	Yes	Fire at waste management facilities have the potential to emit toxic smoke and can cause detrimental health impacts to receptors, therefore the Delegated Officer considers the risk of fire at the Premises needs to be assessed.

Risk Events						Continue to detailed risk assessment	Reasoning
Sources/Activities		Potential emissions	Potential receptors	Potential pathway	Potential adverse impacts		
Waste acceptance, storage and handling	General operations including operating machinery and storage of fuels.	Hydrocarbon, diesel, fuel, oils and/or grease spills	Groundwater (3.88-5.67mbgl) Native vegetation on leased Crown land to the northern boundary and unallocated Crown land immediately to the south and east of the Premises boundary	Direct discharge to land	Soil contamination infiltrating into the groundwater causing degradation of the surrounding ecosystems.	No	The proposed site layout indicates that all operational areas will be hardstand areas. The areas are bunded with kerbing. The Delegated Officer considers this management infrastructure as sufficient to minimise the potential for direct discharge to land. No further risk assessment is required.

6.2 Consequence and likelihood of risk events

A risk rating will be determined for risk events in accordance with the risk rating matrix set out in Table 12 below.

Table 9: Risk rating matrix

Likelihood	Consequence				
	Slight	Minor	Moderate	Major	Severe
Almost certain	Medium	High	High	Extreme	Extreme
Likely	Medium	Medium	High	High	Extreme
Possible	Low	Medium	Medium	High	Extreme
Unlikely	Low	Medium	Medium	Medium	High
Rare	Low	Low	Medium	Medium	High

DWER will undertake an assessment of the consequence and likelihood of the Risk Event in accordance with Table 13 below.

Table 103: Risk criteria table

Likelihood		**Consequence**		
The following criteria has been used to determine the likelihood of the Risk Event occurring.		**The following criteria has been used to determine the consequences of a Risk Event occurring:**		
			Environment	**Public health* and amenity (such as air and water quality, noise, and odour)**
Almost Certain	The risk event is expected to occur in most circumstances	Severe	• **onsite impacts**: catastrophic • **offsite impacts local scale**: high level or above • **offsite impacts wider scale:** mid-level or above • Mid to long-term or permanent impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are significantly exceeded	• Loss of life • **Adverse health effects:** high level or ongoing medical treatment • Specific Consequence Criteria (for public health) are significantly exceeded • **Local scale impacts:** permanent loss of amenity
Likely	The risk event will probably occur in most circumstances	Major	• **onsite impacts**: high level • **offsite impacts local scale**: mid-level • **offsite impacts wider scale**: low level • Short-term impact to an area of high conservation value or special significance^ • Specific Consequence Criteria (for environment) are exceeded	• **Adverse health effects:** mid-level or frequent medical treatment • Specific Consequence Criteria (for public health) are exceeded • **Local scale impacts**: high level impact to amenity
Possible	The risk event could occur at some time	Moderate	• **onsite impacts**: mid-level • **offsite impacts local scale**: low level • **offsite impacts wider scale**: minimal • Specific Consequence Criteria (for environment) are at risk of not being met	• **Adverse health effects:** low level or occasional medical treatment • Specific Consequence Criteria (for public health) are at risk of not being met • **Local scale impacts:** mid-level impact to amenity
Unlikely	The risk event will probably not occur in most circumstances	Minor	• **onsite impacts**: low level • **offsite impacts local scale**: minimal • **offsite impacts wider scale**: not detectable • Specific Consequence Criteria (for environment) likely to be met	• Specific Consequence Criteria (for public health) are likely to be met • **Local scale impacts:** low level impact to amenity
Rare	The risk event may only occur in exceptional circumstances	Slight	• **onsite impact**: minimal • Specific Consequence Criteria (for environment) met	• **Local scale**: minimal to amenity • Specific Consequence Criteria (for public health) met

^ Determination of areas of high conservation value or special significance should be informed by the *Guidance Statement: Environmental Siting.*

* In applying public health criteria, DWER may have regard to the Department of Health's *Health Risk Assessment (Scoping) Guidelines.*

"onsite" means within the Prescribed Premises boundary.

6.3 Acceptability and treatment of Risk Event

DWER will determine the acceptability and treatment of Risk Events in accordance with the Risk treatment table 14 below:

Table 114: Risk treatment table

Rating of Risk Event	Acceptability	Treatment
Extreme	Unacceptable.	Risk Event will not be tolerated. DWER may refuse application.
High	May be acceptable. Subject to multiple regulatory controls.	Risk Event may be tolerated and may be subject to multiple regulatory controls. This may include both outcome-based and management conditions.
Medium	Acceptable, generally subject to regulatory controls.	Risk Event is tolerable and is likely to be subject to some regulatory controls. A preference for outcome-based conditions where practical and appropriate will be applied.
Low	Acceptable, generally not controlled.	Risk Event is acceptable and will generally not be subject to regulatory controls.

6.4 Risk Assessment – Dust Emissions

6.4.1 Description of Dust

Construction

The CRC has the potential to generate dust during construction activities including temporary impacts associated with construction of the building associated with the development of the site where ground disturbing activities will occur to construct the hardstand areas, roads, buildings, etc.

Operation

The CRC has the potential to generate dust during operational activities including material handling (loading and unloading, etc.) associated with the commodity aggregation activities. The CRC will be comprised of hard-standing surfaces and sealed access roads to limit the amount of dust generated.

6.4.2 Identification and general characterisation of emission

Construction

Dust may be temporarily generated during construction of the CRC due to truck and vehicle movement on yet to be sealed surfaces, excavation activities, etc. Construction operations will be limited to Monday to Saturday 0700 – 1900 and Sunday 0900 – 1600, closed on Christmas and Good Friday. Dust may cause health issues including respiratory conditions, affect visual amenity, cause environmental impacts and cause nuisance.

Operation

Dust is expected to be generated from the general operation of the site associated with material

handling including loading, unloading, and transportation etc. The quantity of dust created from the general operations of the CRC are minimum due to the Applicant controls including sealed roads and customer areas. Dust generation is also expected to be limited to their operational times. Dust may cause health issues including respiratory conditions, affect visual amenity, cause environmental impacts and cause nuisance.

6.4.3 Description of potential adverse impact from the emission

Potential impacts from fugitive dust emissions include degradation of local air quality at nearby residential premises located 740m west of the Premises. Air pollution can have an adverse effect on human health, therefore maintaining or improving ambient air quality is important for public health outcomes.

Potential impacts may also occur to the ecology of the native vegetation in neighbouring Crown lands.

6.4.4 Criteria for assessment

Impacts can be assessed against the general provisions of the EP Act, specifically whether fugitive dust unreasonably interferes with the health, welfare, convenience, or comfort of any person.

6.4.5 Applicant controls

This assessment has reviewed the controls set out in Table 15 below.

Table 12: Applicant's/Licence Holder's proposed controls for dust emissions

Description	Reference to issued licence plan (Figure 1)
Controls for dust (construction and operation)	
Dust management measures including the use of a water cart where appropriate will be implemented during the construction works and as necessary during operation	Site Plan
Vehicles speed will be restricted at all times - Maximum speed limit of 10km/hr – this will be sign posted	Sealed roads/areas and Operational areas
All waste loads are to be covered during transport	N/A
Roads will be sealed and maintained	Sealed roads/areas
Excess soils and dust forming material should be removed from waste service vehicles in the vehicle wash down area	Vehicle Wash down Bay (Figure 5)

Figure 5: CRC location within the South Hedland Landfill including location of wash down bay

6.4.6 Key findings

The Delegated Officer has reviewed the information regarding dust and has found:

1. *Dust management practices will be implemented during construction works including the use of a watercart as well as during operation where appropriate.*
2. *Vehicles will be restricted to a maximum speed of 10km/hr, this will be*

signposted at appropriate locations including the entrance to the CRC.

3. *All waste loads are to be covered during transport to and from the site.*
4. *All public access areas of the CRC will be sealed and maintained, operational areas will be unsealed hardstands.*
5. *Any excess soils and dust forming material will be removed from waste service vehicles at the landfills vehicle wash-down area.*
6. *A complaints system is maintained by the Town of Port Hedland to ensure that the community has the opportunity to express their comments and concerns regarding the CRC including any nuisance dust emissions.*

6.4.7 Consequence

Construction

If dust occurs, then the Delegated Officer has determined that the impact of dust emissions will present low level on-site impacts, minimal off-site impacts at the local scale and not detectable off-site impacts at a wider scale with specific consequence criteria likely to be met. Therefore, the Delegated Officer considers the consequence of dust to be **minor**.

Operation

If dust occurs, then the Delegated Officer has determined that the impact of dust emissions will be minimal on-site impacts with specific consequence criteria likely to be met. Therefore, the Delegated Officer considers the consequence of dust to be **slight**.

6.4.8 Likelihood of dust

Construction

The Delegated Officer has determined that the likelihood of dust emissions occurring will be that the risk event will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of dust emissions to be **unlikely**.

Operation

The Delegated Officer has determined that the likelihood of dust emissions occurring will be that the risk event will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of dust emissions to be **unlikely**.

6.4.9 Overall rating of dust

Construction

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 12) and determined that the overall rating for the risk of dust emissions is **medium.**

Operation

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 12) and determined that the overall rating for the risk of dust emissions is **low.**

6.5 Risk Assessment – Contaminated Stormwater

6.5.1 Description of stormwater

The proposed CRC is located within the Pilbara region which is prone to tropical cyclones that bring high levels of rainfall between January and April. Surface water will be generated as a result of rain falling onto the CRC which may cause flooding, damage to infrastructure, contamination to groundwater and overland flow to the neighbouring Crown lands.

6.5.2 Identification and general characterisation of emission

As putrescible waste types are accepted at the CRC, it is anticipated that excessive stormwater, especially during cyclone season may result in flooding onsite with potentially contaminated stormwater carried offsite away from the Premises.

6.5.3 Description of potential adverse impact from the emission

Potential adverse impact from contaminated stormwater include contamination to groundwater, health impacts to native vegetation from overland flow to the neighbouring Crown lands, health and amenity impacts to the residential estate 740m west of the Premises boundary.

6.5.4 Applicant controls

This assessment has reviewed the controls set out in Table 16 below.

Table 13: Applicant's/Licence Holder's proposed controls for stormwater emissions

Description	Reference to issued licence plan (Figure 1)
Controls for stormwater	
A permanent canopy will prevent rainfall entering hook lift bins and mixing with the waste in the Multi-Tiered Drop-off Facility	Multi-Tiered Drop-off Facility
HHW will be stored in a fully enclosed building – avoiding interaction with storm water	HHW
Temporary bin covers will be applied to containers/skips in the Recycling Area during periods of inclement weather	On-Surface drop-off
Contaminated stormwater will be transported to the northern stormwater evaporation pond which will serve the CRC and the remaining catchment of the restored landfill. The north pond will outfall via a culvert to the proposed regional drainage swale in the North Circular road reserve.	Stormwater Catchment North Pond Surface water swales
A southern pond will serve as an evaporation pond and serve the southern catchment of the restored landfill site.	Proposed stormwater catchment South Pond
All stormwater engineering features at the site will be inspected regularly and maintenance works scheduled appropriately	
Surfaces within the CRC will be delineated with kerbs and will utilise suitable slope gradients to guide the flow of surface water to the perimeter drain positioned along the eastern boundary of the CRC	

6.5.5 Key findings

The Delegated Officer has reviewed the information regarding stormwater and has found:

1. *The Works Approval does not permit the acceptance of waste and therefore no controls relating to surface water or groundwater are necessary in the Works Approval.*
2. *The Works Approval does not permit the acceptance of waste, therefore the risk of contaminated stormwater is less during construction vs operation.*
3. *The surfaces within the CRC will be delineated with kerbs and will utilise suitable slope gradients to guide the flow of the uncontaminated stormwater to a perimeter drain positioned along the eastern boundary of the CRC. The perimeter drain will direct the water to the northern stormwater attenuation/ evaporation pond which will service both the CRC and the remaining catchment of the landfill. The north pond will outflow via a culvert to the proposed regional drainage swale in the North Circular road reserve. A southern pond will act as an evaporation pond and serve the southern catchment of the landfill site. All stormwater engineering features will be regularly inspected and maintained.*
4. *The entire CRC will consist of either sealed roads/areas or unsealed hardstand areas.*
5. *Waste storage infrastructure will be constructed in such a way to minimise uncontaminated stormwater coming into contact with stored waste. This infrastructure includes the permanent canopy over the hook lift bins in the Multi-tiered drop-off facility, the HHW will be stored in a fully enclosed building, and temporary covers will be implemented over the containers/skips in the Recycling Area during periods of inclement weather.*

6.5.6 Consequence

If contaminated stormwater occurs, then the Delegated Officer has determined that the impact of contaminated stormwater emissions will present low level on-site impacts, minimal off-site impacts at the local scale and not detectable off-site impacts at a wider scale with specific consequence criteria likely to be met. Therefore, the Delegated Officer considers the consequence of stormwater to be **minor**.

6.5.7 Likelihood of stormwater

The Delegated Officer has determined that the likelihood of stormwater occurring will be that the risk event could occur at some time. Therefore, the Delegated Officer considers the likelihood of contaminated stormwater emissions to be **possible**.

6.5.8 Overall rating of Stormwater

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 12) and determined that the overall rating for the risk of stormwater is **medium**.

6.6 Risk Assessment – Litter/ Windblown Waste

6.6.1 Description of litter and windblown waste

Litter or windblown waste may be generated and spread across a large area as a result of waste acceptance and handling on site, especially during windy conditions. This may reduce public

visual amenity, cause health impacts to wildlife, potentially alter local ecosystems and attract vermin to site which may affect surrounding land users. Sources of litter onsite include vehicles transporting waste into the CRC, and the waste storage on site.

6.6.2 Identification and general characterisation of emission

Litter and windblown waste from solid waste depots, especially light items such as paper, plastic film and plastic bags may be spread across a large area by wind movements. The rate of litter borne from waste management activities will be dependent on the waste type, ambient weather and efficiency of litter prevention activities onsite.

6.6.3 Description of potential adverse impact from the emission

Litter and windblown waste may result in potential nuisance impacts including degradation to the aesthetic amenity of local properties as well as potential alteration to the local ecosystems through threat of litter from the solid waste depot, causing health problems to wildlife, and may attract vermin to site which may affect surrounding land users.

6.6.4 Criteria for assessment

There are no specific criteria for the assessment of windblown waste impacts, general provisions of the EP Act apply.

6.6.5 Applicant controls

This assessment has reviewed the controls set out in Table 17 below.

Table 147: Applicant's/Licence Holder's proposed controls for litter and windblown waste

Description	Reference to issued licence plan (Figure 1)
Controls for litter and windblown waste	
The CRC will be closed during high wind and storm conditions.	N/A
Unloaded waste, recyclable materials, and source separated commodities will be confined to the designated drop-off areas.	Reuse Shop; Recycling Area; Multi-tier drop-off facility; After hours drop-off
Temporary bin covers will be applied to waste containers during periods of inclement weather.	Recycling Area; Multi-tier drop-off facility
Waste loads entering and leaving the site will be covered to prevent uncontrolled release of litter.	N/A
A chain-link boundary fence will be installed to prevent litter escaping, the fence will be inspected and maintained regularly to ensure the fence is capable of capturing windblown litter and limiting access by fauna.	Chain-link fence
The fencing around the after-hours drop-off area will be extended.	After hours drop-off area
Any litter generated around the site and along the fence lines will be collected on a regular basis as part of routine procedures. Wind-blown litter	Chain-link fence and general CRC area

Description	Reference to issued licence plan (Figure 1)
will be collected immediately and taken back onsite.	

6.6.6 Key findings

The Delegated Officer has reviewed the information regarding litter and windblown waste and has found:

1. *Separation distance to nearest residential receptor is 750m, the site is adjacent to Crown land and an existing extractive industries operation.*
2. *The construction of a chain-link perimeter fence, along with regular litter pickups, regular fence inspections and maintenance, the extension of the fence around the after-hours drop-off area, the closing down of the facility during times of high wind and storm conditions, and the implementation of temporary covers for waste containers during times of inclement weather are appropriate controls to reduce the amount of windblown waste and litter generated from the Premises.*
3. *A regular litter program should be implemented to remove litter from the fences and surrounding areas.*

6.6.7 Consequence

If litter and windblown waste occurs, then the Delegated Officer has determined that the impact of windblown waste and litter impacting sensitive receptors will present mid-level on-site impacts, low level offsite impacts at a local scale, minimal offsite impacts at a wider. Therefore, the Delegated Officer considers the consequence of litter and windblown waste to be **moderate**.

6.6.8 Likelihood of litter and windblown waste

The Delegated Officer has determined that the likelihood of litter and windblown waste impacting sensitive receptors will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of windblown waste impacting sensitive receptors to be **unlikely**.

6.6.9 Overall rating of litter and windblown waste

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 12) and determined that the overall rating for the risk of litter and windblown waste impacting sensitive receptors is **medium**.

6.7 Risk Assessment – Vermin and Feral Animals

6.7.1 Description of vermin and feral animals

Vermin such as rats, mice, birds and insects may be attracted to waste management facilities particularly when poor housekeeping practices are implemented and exposed waste and waterbodies are present on site. If uncontrolled, vermin can present a health risk carrying diseases, and affect amenity for staff and surrounding land users.

6.7.2 Identification and general characterisation of emission

Solid waste depots may become habitat for pests and feral animals that may act as disease vectors and affect the amenity of the site and surrounding land uses. Typical vermin found on

Solid waste depots include rats, mice, flies, mosquitos and feral cats, foxes, birds and cockroaches which are attracted by food wastes and still waters. These pests and feral animals could arise from existing vermin living in and around the area and vermin may also be transported into the site within accepted waste material. If uncontrolled, these pests can affect public health and surrounding ecosystems.

6.7.3 Description of potential adverse impact from the emission

If uncontrolled, dispersion of windblown litter from solid waste depots can lead to an increase in rodent populations, injury and death of domestic and wild animals and reduction in visual amenity and human welfare. Sensitive receptors may be exposed to airborne (mosquitos and flies) or land borne (rodents and insects) disease vectors. If uncontrolled, vermin can present a health risk and amenity impacts to staff and surrounding land users.

6.7.4 Criteria for assessment

There are no specific criteria for the assessment of vermin/pathogen impacts, general provisions of the EP Act apply. The main mechanisms for the control of disease vectors at solid waste depots are, eliminating any waterbodies that are not required for fire or stormwater control, sites may also the use scare devices and traps to reduce or control infestations. The Delegated Officer considers it appropriate that waste stored onsite is removed from site regularly to reduce potential food and shelter for vermin and pests at the Premises.

6.7.5 Applicant controls

This assessment has reviewed the controls set out in Table 18 below.

Table 15: Applicant's/Licence Holder's proposed controls for vermin and feral animals

Description	Reference to issued licence plan (Figure 1)
Controls for vermin and feral animals	
Regular litter collections onsite	Throughout the CRC
All waste loads are to be covered during transport	N/A
A perimeter fence will be installed, monitored and maintained on a regular basis	Chain link fence
Any suspected and/ or known shelters or breeding grounds for vermin on the site will be eliminated	Throughout the CRC
Should any vermin issues be experienced, professional services will be utilised to eradicate vermin at the CRC	Throughout the CRC
Refuse waste from the Multi-tier Drop Off Facility will be regularly disposed of to landfill and covered and compacted to best practice standards.	Multi-Tier Drop-off Facility Landfill

6.7.6 Key findings

The Delegated Officer has reviewed the information regarding vermin and feral

animals and has found:

1. *The construction of the fence will help retain windblown waste on site to be collected and returned to site – limiting potential vermin habitat as well as helping keep most feral animals out of the Premises. The fence will be monitored and maintained regularly.*
2. *Any suspected shelters or breeding grounds for vermin or feral animals will be eliminated.*
3. *Refuse waste from the Multi-tier Drop -off Facility will be regularly disposed of to the landfill, covered and compacted to meet best practice standards.*
4. *Professional services will be hired to eradicate any infestations or vermin/ feral animal issues onsite.*

6.7.7 Consequence

If vermin or feral animals/pests occur, then the Delegated Officer has determined that the impact will present low level on-site impacts, minimal off-site impacts at the local scale and not detectable off-site impacts at a wider scale with specific consequence criteria likely to be met. Therefore, the Delegated Officer considers the consequence of stormwater to be **minor**.

6.7.8 Likelihood of vermin and feral animals

The Delegated Officer has determined that the likelihood of vermin or feral animals/pests occurring on site will be that the risk event could occur at some time. Therefore, the Delegated Officer considers the likelihood of contaminated stormwater emissions to be **possible**.

6.7.9 Overall rating of vermin and feral animals

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 12) and determined that the overall rating for the risk of vermin and feral animals is **medium.**

6.8 Risk Assessment – Fire (Smoke)

6.8.1 Description of fire

Fire may occur at the Premises through faulty equipment, machinery, waste acceptance, or arson. Fire may cause damage to infrastructure and pose a threat to staff, customers and surrounding land users including residents of South Hedland, fauna in neighbouring Crown land, and the neighbouring quarry through the toxic fumes that may arise from the smoke.

6.8.2 Identification and general characterisation of emission

Smoke and fire emissions are not anticipated during normal operations at the Premises. Waste material accepted at the Premises provide a fuel source if ignited and there is the potential for spontaneous combustion of some waste streams accepted and stored. There is a risk of fire originating both on and offsite (bushfire).

6.8.3 Description of potential adverse impact from the emission

Fires at waste management facilities have the potential to pose a threat to staff, customers and surrounding land users including residents of South Hedland, the neighbouring quarry site, and vegetation and fauna from the adjacent Crown land. Fires at waste management facilities have the potential to emit toxic smoke which can cause detrimental health impacts to receptors due to the inhalation of particulate matter and other substances such as volatile organic compounds,

dioxins and polycyclic aromatic hydrocarbons which can penetrate deep into the lungs and cause irritation of the eyes, nose and throat.

In addition, fire has the potential to damage site infrastructure including containment infrastructure. Fire originating on site also has the potential to spread beyond the confines of the Premises and impact flora and fauna in the area triggering a grass or bushfire, increasing the threat to surrounding land users including the residents of South Hedland.

6.8.4 Criteria for assessment

There are no specific criteria for smoke emissions, the general provisions of the EP Act make it an offence to cause or allow unreasonable emissions that unreasonably interfere with the health, welfare, convenience, comfort or amenity of any person.

6.8.5 Applicant controls

This assessment has reviewed the controls set out in Table 19 below.

Table 16: Applicant's/Licence Holder's proposed controls for fire

Description	Reference to issued licence plan (Figure 1)
Controls for fire	
The existing landfill perimeter fence will be extended around the CRC, and all access gates will be locked securely outside of operational hours to keep unauthorised people from entering, therefore preventing arson. The perimeter fence will be monitored and maintained on a regular basis.	Chain link fence
Fire extinguishers and hose reels will be located at strategic locations throughout the CRC, a 600L firefighting trailer and 2 water tanks with camlock fittings are also situated onsite.	Firefighting Trailer, Water tanks. Note: exact location of fire extinguishers and hose reels is still to be determined based on a Building Management System for each building.
The CRC's building design will comply with DFES guidance for Site Planning and Fire Appliance Specifications (DFES,2015)	Buildings on Site Map
The CRC will be closed during high wind and storm events.	N/A

6.8.6 Key findings

The Delegated Officer has reviewed the information regarding fire and has found:

1. *The CRC's building design should comply with the Department of Fire and Emergency Services guidance for* Site Planning and Fire Appliance Specifications (DFES 2015).
2. *The inclusion of a 600L firefighting trailer onsite and two water tanks with camlock fittings and fire extinguishers situated around the Premises are*

appropriate controls to reduce the risk of fire emissions occurring at the Premises.

3. *The Premises will be closed down in periods of high wind or storm conditions.*
4. *DFES has approved the Sites* Fire Management Plan 2019 – Ver 3
5. *The Applicant is required to adhere to the applicable legislative requirements such as the Bush Fires Act 1954 which includes the maintenance of fire breaks*.

6.8.7 Consequence

If fire/smoke emissions occur, then the Delegated Officer has determined that the impact of fire/ smoke emissions on health, amenity, and surrounding flora and fauna will present high-level onsite impacts, mid-level offsite impacts at the local scale, and low level offsite impacts at the wider scale. Therefore, the Delegated Officer considers the consequence of fire to be **major**.

6.8.8 Likelihood of fire

The Delegated Officer has determined that the likelihood of fire emissions occurring will be that the risk event will probably not occur in most circumstances. Therefore, the Delegated Officer considers the likelihood of fire emissions to be **unlikely**.

6.8.9 Overall rating of fire

The Delegated Officer has compared the consequence and likelihood ratings described above with the risk rating matrix (Table 12) and determined that the overall rating for the risk of fire is **medium**.

6.9 Summary of acceptability and treatment of Risk Events

A summary of the risk assessment and the acceptability or unacceptability of the risk events set out above, with the appropriate treatment and control, are set out in Table 20 below. Controls are described further in section 7.

Table 17: Risk assessment summary

	Description of Risk Event			**Applicant controls**	**Risk rating**	**Acceptability with controls (conditions on instrument)**
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
1.	Fugitive Dust (construction)	Vehicle movements and construction activities	Air/wind to sensitive receptors causing amenity impacts from dust observation or health impacts from inhalation of dust particles.	Dust management measures including the use of a water cart where appropriate will be implemented during the construction works.	Minor consequence Unlikely likelihood **Medium Risk**	Acceptable subject to regulatory controls

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
2.	Fugitive Dust (Operation)	General waste acceptance, handling and storage	Air/wind to sensitive receptors causing amenity impacts from dust observation or health impacts from inhalation of dust particles.	Water cart where necessary, Vehicles speed limited to 10km/hr, all waste loads covered during transport, roads will be sealed and maintained, excess soils and dust forming material removed from waste service vehicles in the vehicle wash down area.	Slight consequence Unlikely likelihood **Low Risk**	Acceptable subject to the *Environmental Protection (Unauthorised Discharge) Regulations 2004*.
3.	Contaminated Storm-water (Operation)	Waste materials and contaminated stormwater	Waste to surface water causing contamination of surface water, surrounding Crown land and potentially affecting South Hedland residential estate.	Infrastructure controls including hardstand areas, sealed roads and public access areas, kerbing, stormwater swales, stormwater infrastructure.	Minor consequence Possible likelihood **Medium risk**	Acceptable subject to regulatory controls
4.	Litter/ Windblown waste (Operation)	Waste materials	Air/wind dispersion to sensitive receptors causing amenity impacts from waste observation.	Infrastructure and management controls including the construction of the perimeter fence and regular litter collections.	Moderate consequence Unlikely likelihood **Medium Risk**	Acceptable subject to regulatory controls
5.	Vermin/ Feral animals (Operation)	Waste materials	Pests and Vermin attracted to waste materials causing health and amenity impacts.	Infrastructure and management controls	Minor consequence Possible likelihood **Medium Risk**	Acceptable subject to regulatory controls
6.	Fire (Operation)	Arson, spontaneous combustion, bushfire, accidental ignition	Spread of fire from waste to surrounding vegetation causing damage to flora and possibly fauna. Spread of smoke from fire via air moving	Infrastructure and management controls	Major consequence Unlikely likelihood **Medium Risk**	Acceptable subject to regulatory controls

	Description of Risk Event			Applicant controls	Risk rating	Acceptability with controls (conditions on instrument)
	Emission	**Source**	**Pathway/ Receptor (Impact)**			
			with direction of wind to sensitive receptor causing health an amenity impacts from smoke.			

7. Regulatory controls

7.1 Works Approval controls

- Condition 1 allows construction of the infrastructure as per Table 2 in the Works Approval
- Condition 2 allows for minor deviations from the proposed construction.
- Condition 3 requires a compliance document to be submitted to the CEO, to confirm all infrastructure has been constructed as required.
- Condition 4 requires the construction compliance document to identify any departures for works consistent with condition 2.
- Condition 5 relates to authorised emissions from the proposed works as covered by conditions 1-4.
- Conditions 6 and 7 requires accurate record keeping and outlines that a Works Approval Holder must comply with a Department Request within 14 days.

8. Determination of Works Approval conditions

The conditions in the issued Works Approval in Attachment 1 have been determined in accordance with the *Guidance Statement: Setting Conditions*.

Table 21 provides a summary of the conditions to be applied to this works approval.

Table 18: Summary of conditions to be applied

Condition Ref	Grounds
Infrastructure and Equipment 1 - 4	These conditions are valid, risk-based and contain appropriate controls.
Authorised Emissions 5	These conditions are valid, risk-based and consistent with the EP Act.
Record Keeping 6 and 7	These conditions are valid and are necessary administration and reporting requirements to ensure compliance.

DWER notes that it may review the appropriateness and adequacy of controls at any time and that, following a review, DWER may initiate amendments to the works approvals under the EP Act.

9. Applicant's comments

The Applicant was provided with the draft Decision Report and draft issued Works Approval on 29 January 2020. The Applicant provided comments which are summarised, along with DWER's response, in Appendix 2.

10. Conclusion

This assessment of the risks of activities on the Premises has been undertaken with due consideration of a number of factors, including the documents and policies specified in this Decision Report (summarised in Appendix 1).

Based on this assessment, it has been determined that the Issued Works Approval will be granted subject to conditions commensurate with the determined controls and necessary for

administration and reporting requirements.

Stephen Checker

Digitally signed by Stephen Checker
Date: 2020.02.07 18:18:39 +08'00'

Steve Checker

MANAGER WASTE INDUSTRIES

REGULATORY SERVICES

Delegated Officer

under section 20 of the *Environmental Protection Act 1986*

Appendix 1: Key documents

	Document title	In text ref	Availability
1.	Licence L6917/1997/8 – South Hedland Landfill	L6917/1997/8	accessed at www.der.wa.gov.au
2.	DER, July 2015. Guidance Statement: Regulatory principles. Department of Environment Regulation, Perth.	DER 2015a	accessed at www.dwer.wa.gov.au
3.	DER, October 2015. Guidance Statement: Setting conditions. Department of Environment Regulation, Perth.	DER 2015b	
4.	DER, May 2016. Guidance Statement: Publication of Annual Audit Compliance Reports. Department of Environment Regulation, Perth.	DER 2016a	
5.	DER, August 2016. Guidance Statement: Licence duration. Department of Environment Regulation, Perth.	DER 2016b	
6.	DER, September 2016. Guidance Statement: Environmental Standards. Department of Environment Regulation, Perth.	DER 2016c	
7.	DER, November 2016. Guidance Statement: Environmental Siting. Department of Environment Regulation, Perth.	DER 2016d	
8.	DER, February 2017. Guidance Statement: Land Use Planning. Department of Environment Regulation, Perth.	DER 2017a	
9.	DER, February 2017. Guidance Statement: Risk Assessments. Department of Environment Regulation, Perth.	DER 2017b	
10.	DWER, June 2019. Guideline: Decision Making. Department of Water and Environmental Regulation, Perth.	DWER 2019a	
11.	DWER, June 2019. Guideline: Industry Regulation Guide to Licensing. Department of Water and Environmental Regulation, Perth.	DWER 2019b	

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Condition	Summary of Licence Holder comment	DWER response
Condition 4, Table 2	Corrected wording around stormwater drainage infrastructure, stormwater catchment basin, and firefighting equipment.	DWER has accepted and incorporated the requested wording changes.
Decision report section 6.4.2	Provided proposed construction hours – limited to the Environmental Protection (Noise) Regulations 1997.	Incorporated the suggested construction hours into the decision report.
Section 6.8.5, Table 16	Advised DWER that the exact locations of all firefighting equipment, including fire extinguishers and hose reels, will be determined when a Building Management System is established for each building infrastructure during the Detailed Design phase of the project. The Applicant also indicated the location of the firefighting trailer and the water tanks on the site layout map.	The location of the firefighting trailer and water tanks have been included on the site layout maps and a note has been made in the decision report that the exact location of other firefighting equipment is yet to be determined.

Attachment 1: Issued Works Approval W6289/2019/1