



**ENVIRONMENTAL PROTECTION LICENCE
369**

**END OF LIFE TYRES
PROCESSING SERVICES**

**CONCEPT PLAN
ENVIRONMENTAL RISK ASSESSMENT
AND MANAGEMENT PLAN
ENVIRONMENTAL MONITORING PLAN
EMERGENCY RESPONSE PLAN**

DOCUMENT INFORMATION AND CONTROL

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ACRONYMS

ABN	Australian Business Number
ACN	Australian Company Number
EoLT	End of Life Tyres
EMP	Environmental Management Plan
EPA	Environmental Protection Authority
EPL	Environmental Protection Licence
KTM	Katherine Tree Maintenance Pty Ltd
NWRS	Northern Waste Reduction Services
NT	Northern Territory

1 INTRODUCTION

Northern Waste Reduction Services (NWRS) is a registered business name held by Katherine Tree Maintenance Pty Ltd (KTM).

NWRS currently holds two Environmental Protection Licences (EPL), which are:

1. EPL 326 – Collection and transport of end-of-life-tyres (EOLT), and the operation of a Mobile Waste Tyre Processing Facility as specified in the definitions section of the licence with permission to store machinery and equipment at 70 Florina Road, Cossack NT (Expires 16 September 2026)
2. EPL 369 – Collection and transport of waste tyres, storage, treatment and recycling (by shredding and crumbing) of waste tyres at 8883 Stuart Highway Emungalan with temporary storage of EoLT at 1180 Stuart Highway Bees Creek NT also permitted.

NWRS is seeking to consolidate the operations of EPL 326 into EPL 369 for the collection, transport, storage, processing and recycling of used tyres throughout the Northern Territory.

The intention of providing this processing service is to continue to deliver a sustainable approach to disposing of used tyres in the Northern Territory (NT). Contemporary experiences identify that recycling used tyres has diverted significant EoLT from landfill and unauthorized storage sites.

It is anticipated that the recycling of used tyres will divert EoLT from landfill and extend the life of affected landfill sites.

Where recycling of EoLT in the more remote locations of the NT is not cost effective, the reduction in volume of treated EoLT will minimise the impact of landfilling shredded rubber on existing landfill sites.

This document provides environmental management, monitoring and reporting practices for the various components of each service. It will be annually reviewed to ensure that best practice management continues to be incorporated into the services. The key plans included in this document are:

- Environment Risk Assessment and Management Plan (Section 5.2);
 - Emergency Fire Response Plan (Section 5.3.2).
- and
- Environmental Monitoring Program (Section 6)
 - Emergency Response Plan (Section 7)

NWRS is committed to implementing best practice environmental management to reduce the potential for environmental impacts, to reduce the risk of any liabilities

associated with environmental impacts and to maintain strong relationships with neighbors, clients, customers and government agencies.

Guidance materials used in the development of this document include:

- Guideline for the Preparation of an Environmental Management Plan (NT EPA, 2015); and
- Best Practice Guidelines for Tyre Storage and Fire and Emergency Preparedness (Tyre Stewardship Australia, 2017).

Mr Mihkel Proos of Connect Environmental (ABN: 31 693 727 483) is recognized as the author of the initial document that forms the basis of this Plan.

The original version of this document has been modified by the management of NWRS to reflect changes in circumstances surrounding the current operations.

2 RELEVANT LEGISLATION

The design of the operation, as described in this document, has been informed by relevant legislation as shown in Table 1.

Table 1: Relevant Legislation

Legislation	Description and Requirements relevant to the Operation
Waste Management and Pollution Control Act (NT)	The governing legislation for the collection, transportation, storing and processing of tyres. This includes the requirement for a license where these activities are undertaken on a commercial basis.
Fire and Emergency Act (and associated Fire and Emergency Regulations 2017; NT)	Section 7A of the Regulations include details of requirements for “storage of whole tyres” such as heights, dimensions and separation distances.
Bushfire Management Act (NT)	Specifies requirements for properties within Fire Protection Zones.

3 CONTACT DETAILS

The details of Northern Waste Reduction Service (NWRS) are shown in Table 2.

Table 2: Company Details

Item	Detail
Applicant Name	Katherine Tree Maintenance Pty Ltd trading as Northern Waste Reduction Services
ABN / ACN	61 108 347 691 / 108 347 691
Registered Business Address	Hardwickes Partners 6 Phipps Close Deakin ACT 2600
Primary Business Address Administration & Operations	70 Florina Road Cossack NT
Addresses (for Storage of Processing and Transport Machinery)	70 Florina Road Cossack NT 8883 Stuart Highway Emungalan NT 1180 Stuart Highway Bees Creek NT
Addresses (for Storage and Processing of EoLT)	8883 Stuart Highway Emungalan NT 1180 Stuart Highway Bees Creek NT
Postal Address	PO Box 569, Katherine NT 0851
Contact Person	Peter Wasley
Telephone Number	0459640022
Email	info@nwrs.au

4 CONCEPT PLAN

4.1 STATIC SERVICE

NWRS operates a service for processing end of life tyres (EoLT) in accordance with the operational details shown in Table 3. The service includes the following main components:

- Collection/Receival of EoLT from a variety of businesses and individuals in the Northern Territory
- Transport of EoLT from customers sites to #8883 Stuart Highway Emungalan NT
- Storage of 500 tonne (maximum) of tyres and treated rubber on #8883 Stuart Highway Emungalan NT
- Treatment of EoLT on #8883 Stuart Highway Emungalan NT, or at other nominated and NT EPA approved sites;
- Recycling of treated rubber for use by other people or organisations in a variety of purposes
- Deliver shredded rubber to Local, interstate and overseas customers; and
- Deliver scrap metal to local scrap metal merchants.

NWRS leases:

- 8883 Stuart Highway, Emungalan NT) for the purpose of conducting tyre processing and recycling of processed products; and
- 1180 Stuart Highway, Bees Creek NT for the purposes of temporary storage of EoLT prior to dispatch to the Emungalan facility (once sufficient EoLT are accumulated)

Additional details are provided in the following sections.

Table 3: Operation details on Static site

Aspect	Details
Transporting times	Monday to Saturday, 7:00 am to 5:00 pm, all year (except public holidays)
Combined storage of used tyres and rubber shred (As per existing Licence)	Maximum 500 tonnes (outdoor storage)
Processing volume	Approximately 4,600 tonnes per annum
Operational times (tyre shredder)	Approximately 24 hours per week, Monday to Friday, 7:30 am to 4:30 pm, all year (except public holidays)

4.2 MOBILE SERVICE

Many remote communities and businesses in the Northern Territory (Regional Councils, Cattle Properties, Transport Agencies, etc) accumulate EoLTs within their region / property that are cost prohibitive to return to an urban environment for disposal. As such these EoLT are usually disposed of into landfills at each of the remote sites.

The legacy of stockpiles of used tyres has exposed communities in the NT to a range of environmental risks and health hazards because of existing storage arrangements.

These include:

- Creating pooling water for mosquito breeding sites;
- Creating habitat for vermin;
- Leaching of tyre chemicals and heavy metals;
- Increased risk of toxic fires;
- Waste of space and resources; and
- Local councils and tyre retailers appearing to be irresponsible.

To assist in minimising the volume of EoLT entering remote landfill sites, NWRS provides (on request) a mobile tyre processing/collection service, where the shredding machine and associated personnel, plant & equipment are transported to each landfill / dumping site to conduct volume reduction by shredding EoLTs at the locations. Shredded rubber is then either disposed of in the landfill or can be arranged to be transported to urban centres at more equitable rates.

NWRS will enter into agreements with the relevant managers of each site to access and treat the EoLT.

4.3 SITE LAYOUT

4.3.1 Static Site Layout

The site, as shown in Figure 1, has been configured in a manner that meets all legislative requirements and best practice to minimise the risks of impacts on the environment and human health.

Key considerations have been drawn from the Best Practice Guidelines for Tyre Storage and Fire and Emergency Preparedness (Tyre Stewardship Australia, 2017) and relevant legislation and are described in Table 5.

The anticipated stockpile sizes, their configuration on site and separation distances from other stockpiles, infrastructure and boundaries have all be taken into consideration. See Table 4 for details.

(a) Site



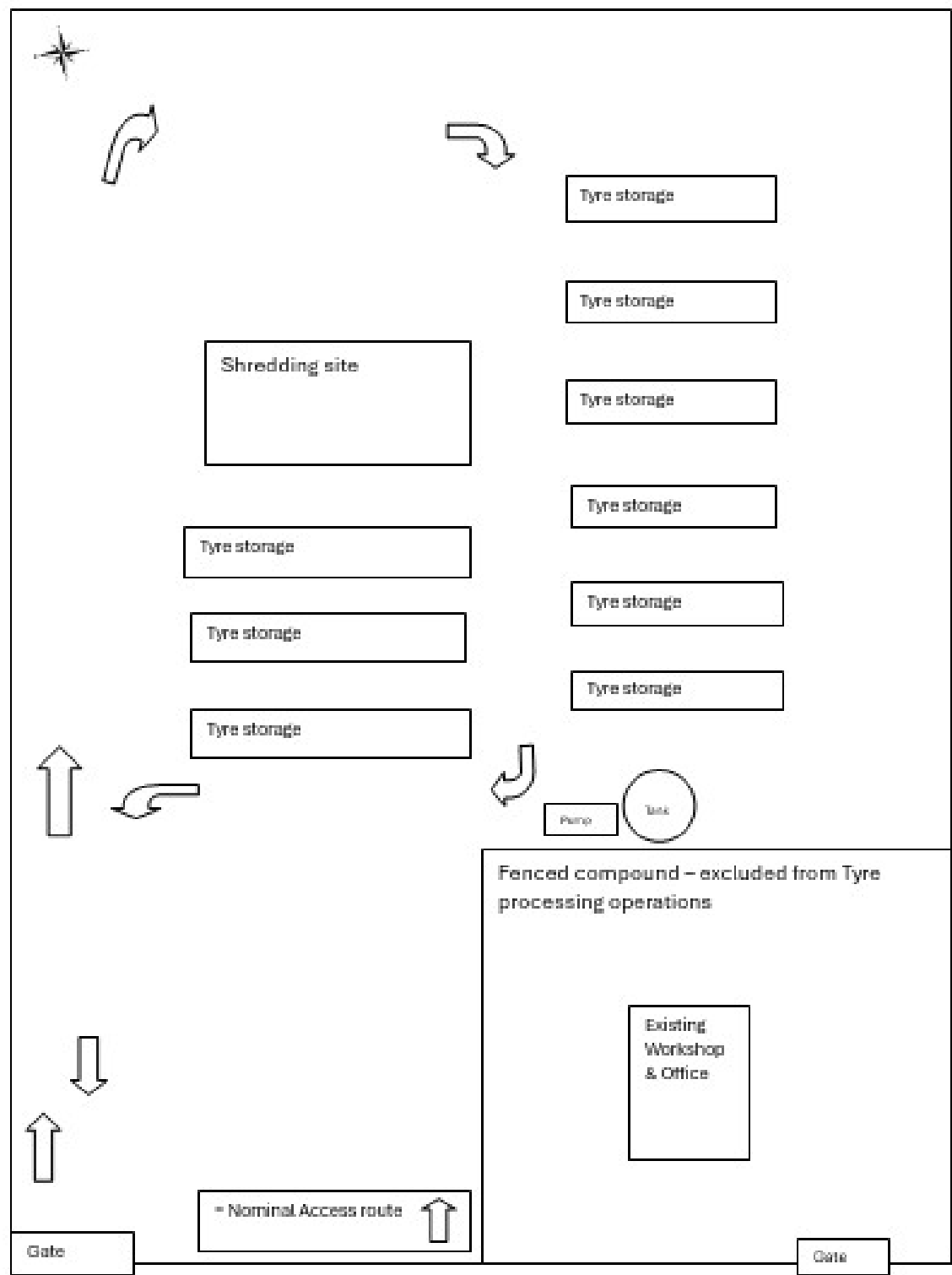
(b) Details



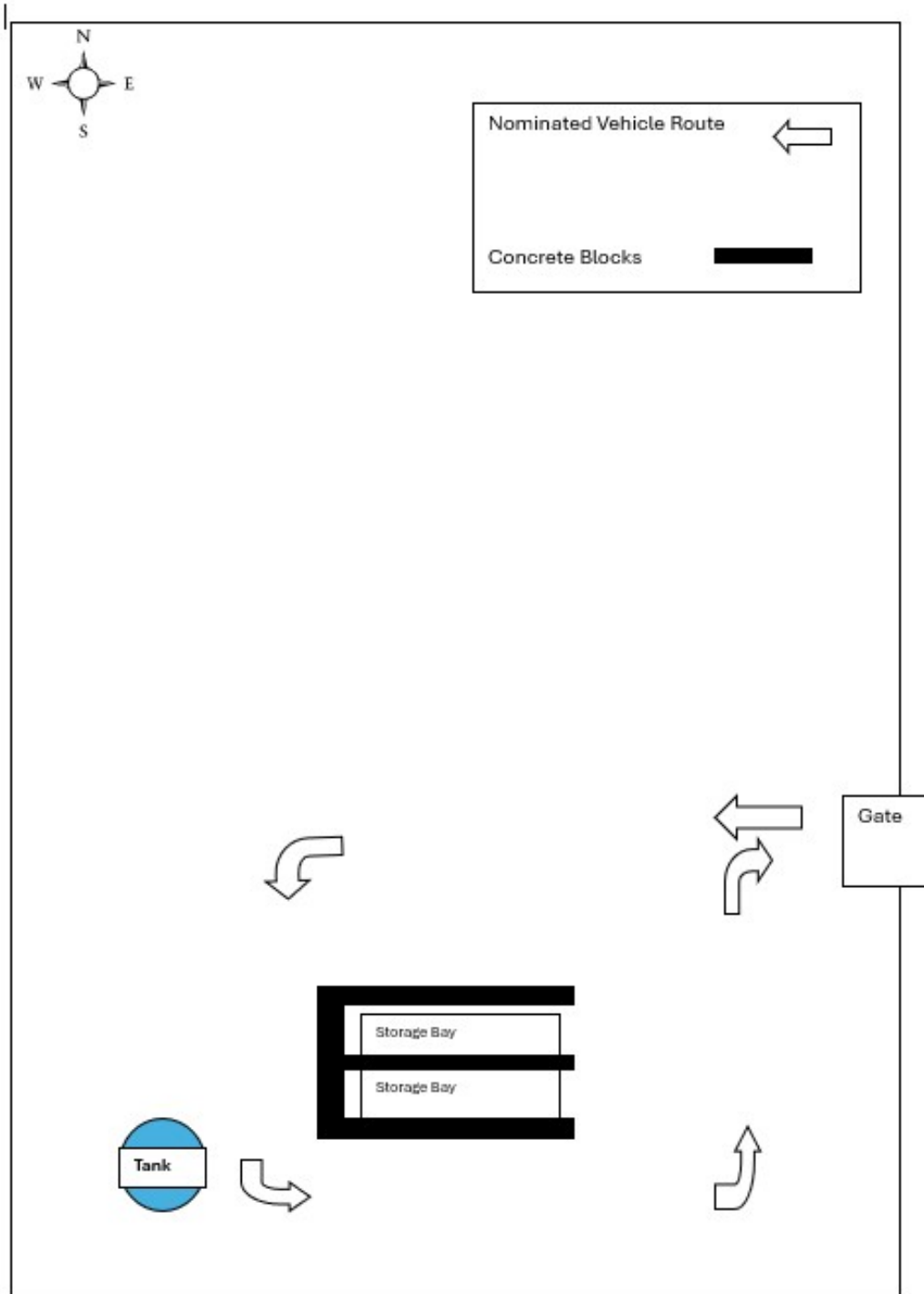
(c) Site Layout

SITE PLAN 8883 Stuart Highway Emungalan

Not to Scale



Not to Scale



Operational requirements may require the layout of EoLT and rubber shred storage areas to be varied from the layout above. Where this occurs all separation distances and heights will be maintained in accordance with those nominated on the Licence.

4.3.2 Mobile Site Layout

For each site, the layout will be configured in a manner that meets all legislative requirements and best practice. The anticipated stockpile sizes, their configuration on site and separation distances from other stockpiles, infrastructure and boundaries will be taken into consideration. See Table 4 for details.

Table 4: Key Site Layout Characteristics

Factor	Best Practice / Legislative requirements	Conforms to best practice	Further information
Site area / size	The site is large enough to accommodate necessary infrastructure including a tyre storage area with adequate separation distances between stockpiles, truck access and all required plant and equipment.	Yes	
Slope	Flat and level ground	The site has a slope of less than 1% (according to Google Earth elevation profiling)	The site has a slope of less than 1% (according to Google Earth elevation profiling)
Zoning of the site	Allowable land use / zoning purpose	The site is zoned LI (Light Industry)	Not addressed elsewhere
Quantity of tyres and separation distances	Tyres to be stored in accordance with the requirements of the EPL # 369	Yes	4.1.4
Sensitive receptors	Avoid situating the site within 500 m of schools, residences, water bodies, major transportation routes and other sensitive receptors	The static site is located in the industrial suburb of Emungalan, that services industries of a similar nature. Remote sites will be established in accordance with Appendix 1 - Site Selection Parameters Checklist	5.2.1 (Fire)

Factor	Best Practice / Legislative requirements	Conforms to best practice	Further information
Access to utilities (primarily for firefighting)	Site entry points should have at least 4 m clearance with access roads designed for large emergency vehicles and their weight limits, including: • Access points on opposite ends of the site (ideally either side of the likely path of a potential smoke plume); • A rapid entry feature to access points to allow quick access for emergency services. • Adequate hardstand areas to prevent emergency vehicles becoming bogged and unable to access the site; and • Vegetation close to the site is managed on a regular basis.	There is currently one entry point (see Figure 2): 1. The primary access point is from the service road connected to Emungalan Road. It is ~6 m wide, which is adequate for emergency vehicles to enter. 2. There are adequate hardstand areas to ensure vehicles do not get bogged 3. The site is devoid of vegetation	This Section (4.1.1) and 5.2.1 (Fire).
Adequate storage space	Meets requirements of the NT's Fire and Emergency Regulations	Yes	4.1.5
Control of runoff water for fire control	Containment should be in the form of bunds or catchment pits. In the NT, the Fire and Emergency Regulations state that stockpiles must either be separated from each other, and from the boundary of the site, by 10 m, or by walls.	Partly – the site will not have bunds however there will be 10 m between each stockpile, and between stockpiles and the site's boundary.	4.1.5

Factor	Best Practice / Legislative requirements	Conforms to best practice	Further information
Ignition sources	Separation distances should consist of: • For non-combustible boundaries – at least 6 m from perimeter; and • For combustible boundaries or public roads – at least 20 m from perimeter if the stockpile's long sides face the boundary and 12 m from perimeter if the stockpile's narrow ends are facing the boundaries.	Partly, the separation distance between the stockpile and (combustible) boundaries are minimum 10 m, in line with the NT Fire and Emergency Regulations.	4.1.5
Site surfaces	Adequate hardstands should be provided to prevent site and emergency vehicles becoming bogged.	Access points to the site, as well as turnaround and parking areas, will be graveled surfaces.	Not addressed elsewhere

Each site (other than #8883 Stuart Highway Emungalan NT) will be assessed on their own merits in accordance with the attached Site Selection Parameters Checklist (Appendix 1)

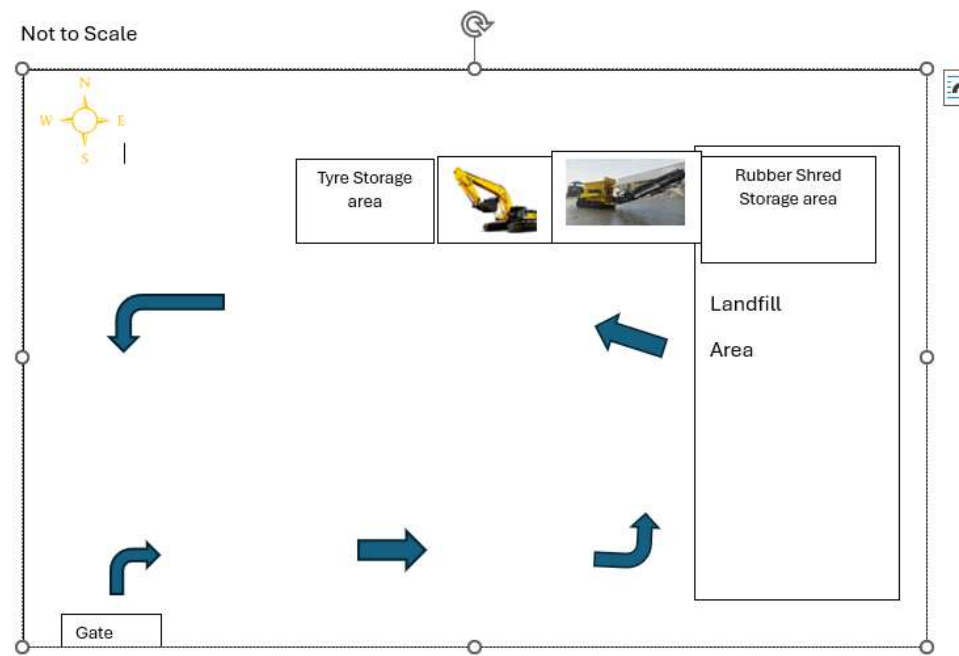
Appendix 1 – Site Selection Parameters Checklist



Mobile Sites
Shredding Assessment

Figure 2 demonstrates a potential design layout that could be used for each site visited.

EXAMPLE SITE LAYOUT DESIGN CONCEPT



4.4 SUPPLY OF USED TYRES

NWRS currently collects and receives used tyres from land fill centres, tyre retailers, trucking companies and other private sources where stockpiles are located.

NWRS has processes in place with each provider to access and remove the used tyres.

4.5 TRANSPORT OF USED TYRES TO THE SITE

Used tyres are transported from suppliers to the site in an enclosed-bodied truck on a weekly or as-needs basis. Tyres are also occasionally delivered to the site by the supplier in their own vehicles.

4.6 STORAGE OF TYRES

Tyres will generally only be stockpiled upon delivery and whilst awaiting weekly shredding, or when the operation is shut down due to plant and equipment maintenance or severe weather conditions.

In accordance with Section 7A of the NT's Fire and Emergency Regulations 2017, and the licence conditions currently in EPL 369, tyre stockpiles will adhere to the following:

- Maximum width of base – 5 m;
- Maximum length of base – 45 m;
- Maximum height – 3 m;
- Minimum distance between stacks and boundary – 10 m; and
- Maximum side slope (i.e. no steeper than) – 1:1.

Tyres will be stored on their sides and not stacked on their treads.

Figure 1 (c) shows the site's layout, which meets the above requirements.

4.7 PROCESSING OF USED TYRES

The shredding machine can process approximately 3 tonnes of used tyres per hour. Using an average of 24 hours per week over 40 weeks per year, this equates to an estimated:

- 72 tonnes per week; or
- 2,880 tonnes per year.

The facility will operate Monday to Saturday for estimated average of 3 days per week, for 40 weeks per year (except public holidays). Variations to this are expected when:

- Maintenance or repair of any plant and equipment is required;
- Demand for processed products reduces;
- Supply of used tyres reduces;
- Any other unexpected event (e.g. extreme weather event).

If any plant or equipment becomes inoperable, or during times of shut down, collection of tyres will be deferred and un-processed used tyres already on-site will be stored in the areas shown in Figure 1.

Used tyres will be transported to the site by customers body trucks or KTM walking floor truck or Prime Mover and walking floor trailers. Used tyres stored on the site will be picked up by an excavator or loader and loaded into the shredder.

Tyres will be shredded into approximately 150 mm shred. As used tyres contain steel wire, the wire is pulled from the rubber through the shredding process then separated by an over band magnet. The wire will be collected and compressed into cube blocks using an electric baling machine. The rubber shred will be loaded into side tipper trucks, bulka bags or enclosed shipping containers.

The shredding process is contained within the shredding chamber and eliminates any possibility of flying debris.

4.8 TRANSPORT OF PROCESSED PRODUCTS OFF-SITE

Rubber shred will be dispatched to rubber recyclers (e.g. Road resealing organisations, local industry, or overseas, as markets present).

4.9 PERSONNEL

NWRS currently has three permanent employees, however it is expected that the remote locality activities will require extra part-time personnel at each of the sites. NWRS will engage these workers from local resources for the period that is necessary for the shredding to be completed at each site

4.10 PLANT & EQUIPMENT

The plant and equipment available to be engaged in each operation is summarized in Table 5

Table 5: Plant and Equipment

Operation / Task	Plant & Equipment
Tyre shredding	Tana Shark 440DT shredder with a Cummins 535Hp Tier III diesel engine Excavator Hydraulic Shears with quick hitch coupler for Excavator 5 Finger Grapple with quick hitch coupler for Excavator
Transport of shredded rubber product (where necessary)	25 tonne heavy rigid truck with walking floor body Prime Mover with 2 x walking floor trailers

5 ENVIRONMENTAL RISK ASSESSMENT AND MANAGEMENT PLAN

5.1 PRELIMINARIES

The following environmental risk assessment (in accordance with Australian and New Zealand Risk Management Standard AS/NZS ISO 3100:2009) will be conducted for the identified environmental aspects considered relevant to the operations.

This is based on the data and information that has been gathered during the planning and preceding operational stages of the assessment, that have been presented in Sections 1 to 4. The risk assessment systematically qualifies and quantifies the potential environmental impacts and applies impact mitigation measures to ensure all potential impacts are minimized to an acceptable level.

Only those aspects of the environment that are considered relevant have been included in this risk assessment (i.e. aspects of the environment where there is potential for impact).

The potential significance of an impact is based on the likelihood and consequence of the impact on that aspect of the environment. The definitions used to determine likelihood are shown in Table 6. The definitions used to determine the consequence of an impact on environmental aspects are shown in Table 7. Following the assessment of likelihood and consequence of the impact, the level of threat can be determined by the matrix shown in Table 8.

Table 6 Impact Likelihood Definitions

	Likelihood	Definition
1	Rare	The outcome is not expected to occur; no record of occurring but not impossible; may occur in exceptional circumstances
2	Unlikely	The outcome will only occur in a few circumstances; uncommon but known to occur elsewhere
3	Possible	The outcome may occur; some evidence to support that it will happen
4	Likely	The outcome will occur in most circumstances
5	Almost Certain	The outcome is expected to occur

Table 7 Impact Consequence Definitions for Relevant Environmental Aspects

Aspect	Consequence				
	Insignificant	Minor	Moderate	Major	Critical
General Biodiversity	Negligible effect	Small to medium scale native vegetation / habitat loss; habitat fragmented	Medium to large scale native vegetation loss / habitat fragmented.	Significant impact. Recovery measured in years to decades.	Severe impacts; recovery period decades
Water Quality	Negligible effect	Temporary low-level effect on water quality	Sustained impact on sensitive environmental features	Significant impact. Recovery measured in years to decades.	Extensive off-site contamination; sustained damage to the environment; remediation not possible.
Air Quality	Impacts below detectable levels	Impacts within allowable limits	Temporary impact on local air quality exceeds allowable limit	Significant remediation works required	Long-term damage to local or regional air quality
Social	Very few people indirectly affected, insignificant concern	Very few people directly affected, some concern	Several people directly affected	Large number of people directly affected; significant concern	Long-lasting health or social effects

Table 8 Level of Threat Matrix

Likelihood	Consequence				
	Insignificant	Minor	Moderate	Major	Critical
Almost Certain	Low	Medium	High	Severe	Severe
Likely	Low	Medium	Medium	High	Severe
Possible	Low	Low	Medium	High	Severe
Unlikely	Low	Low	Low	Medium	High
Rare	Low	Low	Low	Medium	High

5.2 RISK ASSESSMENT AND MANAGEMENT MEASURES

Table 9 contains the Environmental Risk Assessment and associated impact mitigation measures recommended to reduce risks to acceptable levels.

It is expected that the environmental aspects addressed in Table 9 are relevant to both the operation at the Katherine site as well as when operating remotely.

Table 9 Environmental Risk Assessment and Associated Impact Mitigation

Serial	Environmental aspect		Likelihood	Consequence	Rating		Likelihood	Consequence	Rating
1	Waterways	Contamination of surface waters from water used for firefighting purposes in the event of a tyre fire (in the tyre stockpiles on the site)	Possible	Moderate	Medium	• Stockpiles are separated from each other, and from the boundary of the site, by not less than 10 m at any point. • Ensure that stockpiles are located on flat and level parts of the site.	Rare	Minor	Low
2		Contamination of surface waters from oil, fuel and lubricant spills	Unlikely	Moderate	Low	• Designated spill tray will be incorporated in the refueling procedure. • Regular inspection and maintenance of all machinery, plant and vehicles. • Used oils and lubricants to be disposed of appropriately through licensed site.	Rare	Moderate	Low
3		Dust from the shredding machine (as it shreds any dirty tyres)	Possible	Minor	Low	• If required, dust suppression using water sprays.	Possible	Insignificant	Low

4	Air quality	Dust from trucks entering and exiting the site	Likely	Minor	Medium	• All trafficked areas to be concrete, bitumen or gravel hardstand. • Adjust driving behavior to match current environmental and weather factors. • Enforce 5 km/hr speed limits on the site to reduce dust.	Possible	Minor	Low
5		Exhaust emissions from machinery, equipment and vehicles	Possible	Minor	Low	• Maintain appropriate services on vehicles, machinery and equipment • Enforce 5 km/hr speed limits on the site to reduce dust.	Possible	Minor	Low
6		Toxic smoke from tyre fire affecting air quality	Likely	Moderate	Medium	• Several smaller stockpiles will be established, rather than a large one, to minimise the volume of tyres that could burn in a fire. • Stockpiles are also to be separated by a minimum of 10 m.	Possible	Minor	Low

7	Noise	Increase noise levels from increased traffic to and from site (engine noise, exhaust brakes and reversing alarms from trucks resulting in disturbance to neighbouring residents)	Possible	Moderate	Medium	• Avoid driving trucks before 7 am and after 8 pm on Monday to Saturday and before 8 am and after 6 pm on Sundays and public holidays. • Enforce 5 km/hr speed limit of trucks driving on the site. • All trucks to be fitted with efficient exhaust mufflers. • Regular maintenance of vehicles.	Possible	Minor	Low
8		Increased noise levels from operation of the shredder resulting in disturbance to neighbouring residents. Highest peak noise level is measured at 116 LWA (107 dB(A)) at the machine	Possible	Minor	Low	• Avoid using shredder before 7.00 am and after 5.00 pm on Monday to Friday. • Shredder will not be used on Saturdays, Sundays and public holidays. • Avoid using machines substantially more than 35 hours per week.	Possible	Minor	Low

9	Fire	Fire spreading to neighbouring properties, Fire causing air, water and soil pollution	Possible	Major	High	• Execute the Emergency Fire Response Plan in the event of a fire emergency. • Tyres will not be stockpiled long term – tyres will be regularly shredded. • Maintain a fire break (minimum 4 m wide). • Maintain a minimum distance of 10 m between the tyre stockpiles, and between any stockpile and the boundary of the site. • Maintain a water access point with flow rate of minimum 2 L/s. • Maintain fire extinguishers on all vehicles and the shredder. • Keep vegetation within site boundary to a minimum. • Maintain regular surveillance of fires / smoke of the site, neighbouring properties and the local area. • Tyre shredder and yard maintenance equipment (e.g. lawn mowers, whipper snippers) will not be used on the site on days of total fire ban. • Designated smoking areas on site will be established. These areas will be in areas away from any vegetation or flammable materials. • Hot work (e.g. welding, oxy cutting) will take place on the site after establishing suitable fire prevention measures. • Regular inspection and maintenance of all on site electrical appliances	Rare	Moderate	Low
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10	Soils	Contamination of soils from oil, fuel and lubricant spills	Unlikely	Moderate	Low	• Designated spill tray will be incorporated in the refueling procedure. • Regular inspection and maintenance of all machinery, plant and vehicles. • Trucks to be driven appropriate to weather conditions and stick to enforced speed limits on site (to prevent accidents). • Used oils and lubricants to be disposed of appropriately through licensed site.	Rare	Moderate	Low
11		Contamination of soils from water used for firefighting purposes in the event of a tyre fire (in the tyre stockpiles on the site)	Possible	Moderate	Medium	• Stockpiles are separated from each other, and from the boundary of the site, by not less than 10 m at any point. • Contaminated soil, as a result of a tyre fire, will be excavated and appropriately disposed or remediated on site with approval and consultation from the NT EPA.	Rare	Minor	Low
12		Leaching of tyre chemicals and heavy metals	Possible	Minor	Low	• Regular shredding of tyres so that tyres are not left in stockpiles for long periods.	Unlikely	Minor	Low
13		Rubbish / waste contaminating soils	Possible	Minor	Low	• Only used tyres will be accepted for treatment (no other waste / rubbish) • Maintain the site in a neat and tidy fashion.	Possible	Minor	Low
14	Climate Change	Greenhouse gas emissions	Almost certain	Insignificant	Low	• All machinery and vehicles to be switched off when not in use • Conduct regular inspections of all machinery, plant and vehicles	Almost certain	Insignificant	Low
15	Mosquitoes	Creating breeding sites for mosquitoes causing local social and environmental issues	Possible	Minor	Low	• Regular shredding of tyres so that tyres are not left in stockpiles for long periods.	Possible	Minor	Low

5.3 KEY RISKS

Key risks (i.e. those with an inherent risk rating of 'Medium' or higher) associated with the operation are noted in the risk assessment (Table 9).

Key risks have been identified as:

- Contamination of soils and surface waters from water used for firefighting purposes in the event of a tyre fire;
- Dust from trucks driving on the site;
- Toxic smoke from tyre fire affecting air quality;
- Elevated noise levels from increased traffic to and from the site; and
- Fire spreading to neighbouring properties and causing air, water and soil pollution.

It is expected that, through the implementation of the mitigation measures listed in Table 9, the risk ratings are each reduced to 'low'. The following sections provide contextual information of these risks

5.3.1 Noise

New noise sources may be from:

- Engines, exhaust brakes and reversing alarms from trucks, loaders and other plant associated with the proposed operation; and
- Operation of the shredder.

It is not possible or practicable to calculate the number of estimated vehicle movements generated by the proposed operation as each site will need to be assessed in accordance with the Site Selection Parameters Checklist (Appendix 1).

5.3.2 Fires And Associated Air Quality, Water Way And Soil Impacts

Tyres stored on site could burn if set alight, releasing toxic smoke into the air. The most likely causes of a tyre fire are:

- If the tyres are deliberately or unintentionally lit by a person;
- By a neighbouring vegetation fire that spreads to the tyre stockpile;
- By a fire from within the site.

Vegetation fires in the northern parts of the Northern Territory are more likely to occur during the dry season (April to October).

NWRS will maintain the properties at 8883 Stuart Highway Emungalan and 1180 Stuart Highway Bees Creek in accordance with the requirements of legislation and guidelines that are in force at the time.

For remote site operations, NWRS will be reliant on the Customer to provide sufficient fire fighting capacity at each of the remote sites visited.

These requirements have been incorporated into the design and maintenance of the site and impact mitigation measures for the operation.

Groundwater is unlikely to be affected by a tyre fire, however localised contamination of the surface soils and water from firefighting foams and water may result. Tyres may also release oily compounds when burnt.

In the event of a fire, an inspection of the localised area will be undertaken. Any contaminated soil, resulting from a tyre fire, will be excavated and appropriately disposed or remediated on site with approval and consultation from the NT EPA.

The range of impact avoidance and mitigation measures because of a tyre fire are shown in Table 9.

In addition, an Emergency Fire Response Plan has been developed and includes procedures to be used for fire emergencies. A copy of the Plan will be in each NWRS vehicle being used at each site

Appendix 2 – Emergency Fire Response Plan



Emergency Fire
Response Plan (Mot

5.4 HAZARDOUS MATERIALS AND CHEMICALS

No hazardous materials or chemicals will be used or stored on the site, except for a small quantity of oils and lubricants required for minor maintenance for plant and equipment.

If any EoLT sourced from providers are contaminated with any possible hazardous substance or chemicals, NWRS will refuse collection until contamination has been resolved.

Minor maintenance of the shredder may occur on site by NWRS employees and will require minimal oils and lubricants. Major maintenance and servicing of it will be undertaken by an external contractor. Oils and lubricants for a major service will be provided by the contractor and not stored on-site.

Re-fueling of the shredding machinery will be conducted on site, or maintenance of vehicles associated with the operation is not anticipated to be carried out within the site.

5.5 EMPLOYEE INDUCTIONS AND TRAINING

Employee inductions will be conducted for all staff. The inductions will include the impact mitigation measures contained within Table 11 as well as the fire safety and emergency procedures contained in the Emergency Fire Response Plan. If considered necessary, Safe Work Procedures may also need to be developed for staff.

Annual training for all staff will also be undertaken for the Emergency Fire Response Plan.

6 ENVIRONMENTAL MONITORING

6.1 PURPOSE AND SCOPE

Given the environmental risks identified in the preceding section (Environmental Risk Assessment and Management Plan), a monitoring program has been developed to ensure that any issues are identified as early as possible and rectified in order to minimise the risk of environmental incidents / issues. See Table 10 following.

All inspections required are the ultimate responsibility of the Site Supervisor / Manager.

Table 10: Environmental monitoring schedule

Environmental Aspect	Potential Impact	Inspection Required	Inspection Frequency	Performance Criteria	Corrective Action
All	Public complaints	Check with Staff / Emails	Daily	No Public Complaints	Immediately respond to complainant and address complaint
Waterways	Contamination from oil, fuel and lubricant spills	Check for signs of leaks / spills	Daily	No leaks / spills	Clean up leaks / spills and remedy source.
Noise	Increased noise levels	Check for hours of operation Check for truck speed on site	Daily	No excessive noise	Ensure activities are within allowable hours of operation Ensure speed limits are followed Remediate noisy vehicles and/or equipment

	Dust from shredder	Check for obvious dust plumes during operation or build-up of dust in immediate vicinity of shredder	Daily	No dust plumes from shredder	Apply water sprayers as necessary
Air quality	Dust from trucks	Assess dust levels from trucks when driving on site. Check for dust build up on vegetation adjacent to access path and around site Check truck drivers are observing speed limits	Weekly	No dust build-up on adjacent vegetation No excessive dust generation	Apply water sprayers as necessary Discipline truck drivers, as necessary
	Exhaust emissions	Check for exhaust smoke	Daily	No exhaust smoke	Get vehicle / machine serviced and repaired
		Check equipment / vehicle service records	Monthly	All equipment / vehicles are in service	
Soils	Contamination from oil, fuel and lubricant spills	Check for signs of leaks / spills	Daily	No leaks / spills	Clean up leaks / spills and remedy source.
	Leaching of tyre chemicals and heavy metals	Check how long tyre stockpiles have been present and untouched	Monthly	Stockpiles remaining for longer than one month	Shred tyres in stockpiles that have been there for longer than a month

Fire	Fire spreading to neighbouring properties	Check weather conditions and local fire observations	Daily	No fires No smoking outside allowable smoking area No yard maintenance equipment or hot work being used on total fire ban days	Shut down site and become emergency ready if a fire is observed in local area (as per Emergency Fire Response Plan (Section 6)) Enforce smoking areas Counsel / discipline staff, as necessary.
	Tyre fire resulting in air quality, soil and waterway impacts	Check smoking areas are enforced Check that yard maintenance equipment or hot work is not being undertaken on days of total fire ban			
Climate Change	Greenhouse gas emissions	Check that equipment and vehicles are turned off when not in use	Daily	Equipment and vehicles are only used when in use.	Turn off when not in use.

7 EMERGENCY RESPONSE PLAN

7.1 PURPOSE AND SCOPE

This plan details the procedure to be followed in the event of an emergency on, or near to, the site.

Safe Work Method Statements will also include emergency response actions specific to the task being undertaken.

7.2 PROCEDURE

Each emergency will be unique in its' own way however the following principles will generally apply to any emergency.

Immediate Action Steps

- Stop all work in proximity to the emergency
- Assess the scene: Check if the area is safe for you to approach.
- Alert authorities: Call 000 or notify on-site emergency wardens.
- Evacuate: Leave the building or area quickly and calmly.
- Assembly point: Gather at the designated safe zone and wait for the all-clear.

Medical Emergencies

- Call for help: Dial 000 for severe injuries, chest pain, or breathing trouble.
- Provide first aid: Use CPR or basic first aid only if trained to do so.
- Clear access: Keep pathways open for arriving paramedics

Table 11 describes a process to respond to a potential or real fire threat.

7.3 EQUIPMENT

Fire safety and emergency equipment required on site always is shown in Table 12.

Table 11: Action Plan for Fire Emergency

Serial	Tasks	
1	Determine the type of fire	Determine whether the fire is a: • A fire on/in the machinery you are operating; or • A bush / grass fire; or • Another <i>nearby</i> fire (e.g. vehicle or building).
2	Assess its location and severity / threat level	Determine where it is and how serious it is (i.e. minor, moderate or major).
3	Alert all personnel in vicinity	- Contact the Site Supervisor by radio or mobile telephone; - Advise of the Emergency and - Request attendance of a Water Truck/Fire Fighting Trailer - Inform everyone to implement emergency response procedures - Check that everybody is safe and ensure there is immediate access to PPE and first aid supplies.
4	Call 000	Regardless of the type or severity of the fire, contact the Fire Brigade on 000. Tell them what type of fire it is, who is there and the address of the property
5	Contact Peter Wasley or Mark Hagger	0459 640 022. 0408 803 919 to inform them of the situation
6	If it's a <u>moderate or major</u> tyre fire, consider using earthmoving machinery to remove non-burning tyres IF SAFE TO DO SO Where able use earthmoving machinery to cover the burning tyres with soil	Only attempt this if the risk of injury / damage is low, <u>otherwise leave it to the fire brigade.</u> Spray removed tyres with water to cool down and prevent further ignition.
7	If it's a grass fire, attempt to extinguish the flames using whatever ever means are available (eg extinguisher, rake, shovel) IF SAFE TO DO SO	Only attempt this if the risk of injury is low. Try with a shovel or rake. Check for windblown embers and extinguish if possible.
8	Wait for Fire Brigade to arrive and follow their instructions	Assist where possible.

Table 12: Fire Safety and Emergency Equipment Requirements

Requirement	Description
Appropriate equipment for moving tyres	Excavator or loader can be used to move tyres quickly in the event of a fire (if safe to do so) and potentially lessen the size and severity of the fire.
Adequate water supply and accessibility	The site has direct access to a 10,000 litre Water Tank which is connected to a water bore on the property
Containment of water used in fire fighting	Sediment control and bunding along the boundary of the property to contain water within the property. In accordance with the NT <i>Fire and Emergency Regulations</i>, storage cells will be constructed using concrete blocks and sited beyond 15 metres to the property boundary of the site.
Adequate fire hydrant system and fire fighting capability	1 x 10,000 Litre Water Supply Tank and fire fighter pump with hose reel installed in close proximity to the proposed tyre storage area.

8 REVIEWS OF THIS DOCUMENT

An important aspect of best practice is adaptive management, which includes the need to regularly review management documentation associated with the operation. This involves analysis of all information, practices and risks described in this document against best practices and taking steps to improve the content over time.

This document, including the Risk Assessment and Management Plan and the Emergency Fire Response Plan, will be reviewed annually.

9 REFERENCES

NT EPA (Northern Territory Environment Protection Authority), 2015. Guideline for the Preparation of an Environmental Management Plan. NT EPA.

Tyre Stewardship Australia, 2017. Best Practice Guidelines for Tyre Storage and Fire and Emergency Preparedness.