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ENVIRONMENTAL MANAGEMENT PROGRAMME FOR STRUMOSA WASTE DROP-OFF CENTRE AND ON-SITE COMPOSTING FACILITY AT STRUMOSA, RUSTENBURG

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PREPARED BY:

BKS (Pty) Ltd
PO Box 3173
Pretoria
0001

CONTACT PERSON

Mr R. Swanepoel
Tel No: 021 950 7500



PREPARED FOR:

Rustenburg Local Municipality
PO Box 16
RUSTENBURG
0300

CONTACT PERSON

Mr WT Senne
Tel No: 014 590 3091



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LIST OF TERMINOLOGY AND DEFINITIONS

Terminology	Explanation
Activity	Any action needed for the design, construction and completion of a project.
Alien species	A species occurring in an area outside of its historically known natural range as a result of intentional or accidental dispersal by human activities.
Applicant	Means a person who has submitted or who intends to submit - <ul style="list-style-type: none"> a) an application for an environmental authorisation; b) an application for an environmental authorisation simultaneously with an application for any right or permit in terms of the Minerals and Petroleum Resources Development Act (Act 28 of 2002).
Environmental aspect	A product's or production process's environmental impact or important issues in the environment that an organisation should take into consideration.
Communication register	A register aimed at tracking all communication activities within the project.
Composting	A closely monitored process with measured inputs of water, air and carbon- and nitrogen-rich materials. The decomposition process is aided by shredding the plant matter, adding water and ensuring proper aeration by regularly turning the mixture. Aerobic bacteria aid the chemical process by converting the compost materials into heat, carbon dioxide and ammonium . The ammonium is further converted by bacteria into plant-nourishing nitrites and nitrates through the process of nitrification . The product is a valuable soil fertiliser. Composting removes organic matter from landfills and consequently reduces methane emissions.
Contaminated water	Water containing pollutants from on or off-site activities; e.g. concrete-laden water and runoff from plant / personnel wash areas. Contaminated water must be treated for appropriate reuse or to ensure that water meets minimum standards and guidelines prior to disposal or being released into the environment.
Department of Environmental Affairs	The national authority responsible for the review and/or approval of an Environmental Management Programme.
Department of Mineral Resources	The national authority responsible for the regulatory framework for equitable access to and sustainable development of the nation's mineral resources and related matters
Department of Water Affairs	The national authority responsibility for and authority over the nation's water resources and their use, including the equitable allocation of water for beneficial use, the redistribution of water, and international water matter's
Drop-off Centre	Centre where recyclable materials are dropped off by consumers without receiving payment for the materials.
Employer	See Rustenburg Local Municipality
Environment	The surroundings in which humans exist and which comprise: <ul style="list-style-type: none"> • the land, water and atmosphere of the earth; • micro-organisms, plant and animal life; • any part or combination and interrelationships; and • the physical, chemical, aesthetic, historical, cultural and economical properties and conditions of the foregoing that can influence human health and wellbeing.
Environmental Audit	Systematic, documented, regular and objective evaluation to see how well an organisation or facility is operating in terms of the Environmental Management Programme and is complying with statutory requirements and the organisation's Environmental Policy.
Environmental Authorisation	The authorisation by a competent environmental authority for commencement of listed activities in terms of the National Environmental

Terminology	Explanation
Environmental Control Officer	Management Act (Act 107 of 1998). An independent person who is responsible for undertaking site inspections to audit and report on compliance with environmental specifications with the Environmental Management Programme.
Environmental impact	Any change to the environment, whether adverse or beneficial, wholly or partially that results from an organisation's activities.
Environmental Impact Assessment	The process of collecting, organising, analysing, interpreting and communicating information in accordance with the environmental legal requirements set out in GNR. No 543, GNR. 544, GNR. 545 and GNR 546, as published in Government Gazette No. 33411 of 2 August 2010, promulgated in terms of Chapter 5 of the National Environmental Management Act (Act 107 of 1998) for the purposes of obtaining an Environmental Authorisation in accordance with Chapter 5 of the National Environmental Management Act.
Environmental Management Inspector	A person designated as an environmental management inspector in terms of Section 31B or 31C of the National Environmental Management Act (Act 107 of 1998).
Environmental Management Programme	A tool used to prescribe management mechanisms or methods for the prevention of undue or reasonably avoidable adverse environmental impacts and for the enhancement of the positive environmental benefits of a development.
Environmental objectives	The overall environmental goal arising from the Environmental Policy that an organisation sets itself to achieve, and is quantified where practicable.
Fauna	All living biological creatures, usually capable of motion, including insects, and predominantly of protein-based consistency.
Fire hazard	The relative combination of fuel, oxygen and heat that could lead to the start and spread of a fire.
Flood line	The line or mark to which a flood could rise every 50 (1:50 year flood line) or 100 (1:100 year flood line) years.
Flora	All living plants, grasses, shrubs and trees typically incapable of easy natural motion and capable of photosynthesis.
Groundwater	Water that fills the natural openings in below-surface rock or unconsolidated sands.
Hazardous waste	Waste that, because of its chemical reactivity, toxic, explosive, corrosive, radioactive or other characteristics, causes danger or is likely to cause danger to health or the environment.
Heritage resources	Any place or object of cultural, archaeological or paleontological significance in terms of the National Heritage Resources Act (Act 25 of 1999).
Induction training	The training provided to new / existing employees to (re)acquaint them with the company structure, their specific job requirements, practical or organisational issues and occupational health, safety and environmental considerations required on the project.
Integrated Environmental Management	Integration Environmental Management is defined as: <ul style="list-style-type: none"> the promotion of the integration of the principles of environmental management, as set out in Section 2 of the National Environmental Management Act (Act 107 of 1998) in making decisions that may have a significant effect on the environment; the identification, prediction and evaluation of the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts and maximising benefits; ensuring that the effects of activities on the environment receive

Terminology	Explanation
	<p>adequate consideration before actions are taken in connection with them;</p> <ul style="list-style-type: none"> ensuring an adequate and appropriate opportunity for public participation in decisions that may affect the environment; ensuring the consideration of environmental attributes in management and decision making, which may have a significant effect on the environment; and identifying and employing the modes of environmental management best suited to ensure that a particular activity is pursued in accordance with the principles of environmental management as set out in Section 2 of the National Environmental Management Act (Act 107 of 1998).
Interested and Affected Parties (I&AP)	Any person or group of people concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, customers and consumers, environmental interest groups, and the general public (after the Environmental Impact Assessment Regulations of September 1997 and Guideline Document: Environmental Impact Assessment Regulations of April 1998).
Landfill Site	Site for the controlled disposal of waste materials.
Land Use	The arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it. This definition establishes a direct link between the land cover and the actions of people in their environment.
Materials	All kinds of items (other than plant) intended to form or forming part of the Permanent Works, including the supply-only materials (if any) to be supplied by the Contractor under the Contract.
Mitigate	The implementation of practical measures to reduce any adverse impacts or to enhance the beneficial impacts of an action.
No-go area	An area where construction activities are prohibited.
Non-compliance	Failure to comply with the requirements of the EMPr.
Non-conformance report	A report outlining a deviation from process, procedure or compliance specifications.
Plant	The apparatus, machinery and vehicles used during the Permanent Works.
Pollution	Any change in the environment caused by substances or noise, malodours, dust or heat emitted from any activity, including the storage or treatment of waste or substances, construction and the provision of services, where that change has an adverse effect on human health or wellbeing or on the composition, resilience and productivity of natural or managed ecosystems, or on materials useful to people, or will have such an effect in the future.
Potentially hazardous substance	A substance that can have a deleterious effect on the environment. Hazardous chemical substances are defined in the Regulations for Hazardous Chemical Substances, published in terms of the Occupational Health and Safety Act (Act 85 of 1993).
Precautionary principle	The basic principle that, when in doubt or when there is insufficient or unreliable information, actions must be undertaken that have minimum risk.
Quality management system	A set of interrelated or interacting elements that organisations use to direct and control how quality policies are implemented and quality objectives are achieved.
Rehabilitation	Re-establishment or restoration to a healthy sustainable capacity or state.
Resource recovery	Recycling of waste or the recovery of energy.

Terminology	Explanation
Solid waste	All solid waste, including construction debris, chemical waste, excess cement / concrete, wrapping materials, timber, steel, drums, wire, nails, food and domestic waste (e.g. plastic bags and wrappers).
Target	The detailed performance requirement, applicable to the organisation, or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives.
Waste	any substance, whether or not that substance can be reduced, re-used, recycled and recovered that is surplus, unwanted, rejected, discarded, abandoned or disposed of; <ul style="list-style-type: none"> a) which the generator has no further use of for (he purposes of production; b) that must be treated or disposed of; or c) that is identified as a waste by the Minister by notice in the Gazette, d) and includes waste generated by the mining, medical or other sector, but— <ul style="list-style-type: none"> (i) a by-product is not considered waste; and (ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste.
Waste disposal facility	any site or premise used for the accumulation of waste with the purpose of disposing of that waste at that site or on that premise.
Waste management activity	any activity listed in Schedule 1 or published by notice in the Gazette under section 19, and includes <ul style="list-style-type: none"> a) the importation and exportation of waste; b) the generation of waste, including the undertaking of any activity or process that is likely to result in the generation of waste; c) the accumulation and storage of waste; d) the collection and handling of waste; e) the reduction, re-use, recycling and recovery of waste; f) the trading in waste; g) the transportation of waste; h) the transfer of waste; i) the treatment of waste; and j) the disposal of waste.
Waste minimisation	The reduction of the volume of waste during construction by means of different processes or clean technology.
Waste prevention	The prevention and avoidance of the production of a waste.
Waste transfer station	Facility where waste is temporarily stored, and ideally sorted, before it is transported more economically to either recycling centres or landfills.
Wastewater	Water containing cement washings, oil, fuel or other contaminants.
Water resource	Includes a watercourse, surface water, estuary or aquifer.
Works	The Permanent Works and the Temporary Works, or either of them as appropriate.

LIST OF ACRONYMS AND ABBREVIATIONS

Acronym / Abbreviation	Explanation
BAR	Basic Assessment Report
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DWA	Department of Water Affairs

EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ECO	Environmental Control Officer
EO	Environmental Officer
EMPr	Environmental Management Programme
FDI	Fire Danger Index
FPA	Fire Protection Association
GNR	Government Notice Regulations
I&AP(s)	Interested and Affected Party(ies)
MPRDA	Mineral and Petroleum Resources Development Act (Act 28 of 2002)
NEMA	National Environmental Management Act (Act 107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act 25 of 1999)
NWA	National Water Act, 1998 (Act 36 of 1998)
NWDEDECT	North West Department of Economic Development, Environment, Conservation and Tourism
PCO	Pest Control Officer
PPE	Personal Protective Equipment
RLM	Rustenburg Local Municipality
QMS	Quality Management System
SAHRA	South African Heritage Resource Agency
SANSOR	South African National Seed Organization
SAPS	South African Police Service
TEM	Transport, Earthmoving and Materials Handling Equipment
WDC	Waste Drop-off Centre

1. INTRODUCTION

This Draft Environmental Management Programme (EMPr) is an environmental management tool used to prescribe management mechanisms or methods for the prevention of undue or reasonably avoidable adverse environmental impacts and for the enhancement of the positive environmental benefits during activities associated with the construction, operation, rehabilitation and closure of the waste transfer station. Thus, this EMPr is based on the findings of the Basic Assessment (BA) process conducted in terms of the EIA Regulations (Government Notice No. R. 543 in the Government Gazette of 18 June 2010) of the National Environmental Management Act (Act No. 107 of 1998) (NEMA).

This Draft EMPr will be submitted with the BA report to the Department: Economic Development, Environment, Conservation and Tourism (NWDEDECT) for Environmental Authorisation.

An EMPr describes the measures that need to be taken to ensure the Duty of Care is bestowed upon those who cause, have caused or may in future cause pollution or degradation of the environment, as per Section 28 (1) of NEMA. Section 28 (1) has been amended to include significant pollution or degradation that occurred before the commencement of NEMA, that arises or is likely to arise at a different time from the actual activity that caused the contamination or that arises through an act or activity of a person that results in a change to pre-existing contamination. Non-compliance to Section 28 (Duty of Care) is a criminal offence and may lead to criminal prosecution.

Although the Draft EMPr forms part of the BA Report that is submitted for Environmental Authorisation (EA), the EMPr is a stand-alone document that is used to guide and regulate environmental performance through all stages associated with the Strumosa Waste Drop-Off Centre (WDC).

This EMPr would need to form part of the tender documentation to the Contractor(s) and becomes legally binding on the Contractor(s) and anyone acting on behalf of the Contractor(s) or the RLM during the construction, operation, rehabilitation and closure activities associated with the WDC.

The *Rustenburg Local Municipality (RLM)* appointed BKS to provide waste management solutions to the various illegal waste disposal sites and poorly managed garden waste sites utilised within the municipality by the local community.

The above appointment sets out to ensure RLM's compliance to the requirements of various waste management principles and policies as accepted by national, provincial and local government.

Once an EA has been received from the NWDEDECT, the Draft EMPr will need to be finalised to include any additional conditions stipulated by the NWDEDECT in the EA. In addition, this Draft EMPr is a dynamic document and may need to be updated on a regular basis, as directed by either the Environmental Control Officer (ECO) or the NWDEDECT.

1.1 DETAILS OF AUTHORS

As per the requirements of the NEMA, the details and expertise levels of the persons who prepared the EMPr are provided below.

Table 1: Authors' Details

EMP Specialist	BKS (Pty) Ltd
Contact Person	Robin Swanepoel
Postal address	PO Box 112, Bellville, 7535
Telephone	021 950 7500
Fax	021 950 7502
Email	robins@bks.co.za
Qualifications	B. Tech Nature Conservation B. Tech Environmental Management
Expertise to carry out preparation of EMPr	Robin has 14 years of experience and has been involved in the compilation and implementation of various EMPrs, <i>inter alia</i> : <ul style="list-style-type: none"> • Komati Water Scheme • Komati Water Scheme Augmentation Project • Environmental Management Programme for the Horizontal Directional Drilling for Installation of a 457mm Diameter Gas Pipeline Across the Mvoti River • Mitchells Plain – Philippi 400kV Transmission Line • Mitchells Plain – Firgrove400kV Transmission Line

Project Director	BKS(Pty) Ltd
Contact Person	Peter MFG Teurlings
Postal address	PO Box 3173, Pretoria, 0001
Telephone	012 421 3500
Fax	012 421 3601
Email	petert@bks.co.za
Highest Qualification	MSc (Biogeography)
Professional membership	South African Council for Natural Scientific Professions (Reg No 400027/95) International Association of Impact Assessments – South Africa (ID No 1398) Founding member of the Environmental Assessment Practitioners Association of South Africa (EAPASA). Member of the Environmental Law Association.
Expertise to carry out review of EMPr	Author, co-author and/or presenter of over 100 reports, presentations and manuals on EIAs, EMPrs, and environmental management and other related studies, including:

	<p>Development of life cycle EMPs for:</p> <ul style="list-style-type: none"> • the new Marondera Sewage Treatment Works in Zimbabwe for the Marondera City Council; • a community water supply scheme in Middledrift, KwaZulu/Natal for the Mhlatuzana Water Board; • the extensions to the Zengeza Sewage Treatment Works in Chitungwiza, Harare, Zimbabwe for the Mitsubishi Corporation, Japan; • the Vlaktefontein Outfall Sewer near Grassmere for Ndodana Consulting Engineers (NCE); • the Rehabilitation of the Highveld Technopark Wetland for the Highveld Technopark Association; • the rehabilitation of road reserves and the upgrading of roads in the Tzaneen area for NCE on behalf of the Roads Agency Limpopo; • the construction of garden waste receiving and waste buy-back centres in Mapetla, Pimville and Orlando East, Soweto for Pikitup Johannesburg; • the Oprah Winfrey Leadership Academy for Girls in Henley-on-Klip for Betts Townsend (Pty) Ltd on behalf of the Gauteng Education Development Trust; <p>Environmental Technical Coordinator for the Gautrain Project for the Gauteng Department of Transport, Roads and Public Works (2007 – present);</p> <p>Environmental Screening Reports and EMPs for the safety rehabilitation of 19 large dams in South Africa for the DWA;</p> <p>EIA Review for the development of Phase 2 of the Mooi Mgeni Transfer Scheme and appurtenant works for DWA;</p> <p>Development of the Cosmo City Township in northern Randburg for Basil Read / Cosmo City Development Company;</p> <p>Development of the Heineken Brewery adjacent to the R25 on the road to Bapsfontein, Kempton Park, for Heineken Supply Company;</p> <p>Development of the Umfolozi-Empangeni 765kV Transmission Lines and Substation for Eskom Transmission;</p> <p>Development of a military installation at the De Aar School of Ammunition for SANABO; and</p> <p>Development of a new landfill site in the Msukaligwa Regional Municipality for the Gert Sibande District Municipality in Mpumalanga.</p>
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1.2 SPECIALIST INPUT DURING BASIC ASSESSMENT

Table 2: Specialist Input during BA Process

Contact Person	Company	Specialist Investigation	Contact Details
A.J. Pelser	Archaetnos Culture & Cultural Resource Consultants	Heritage Assessment	083 291 6104

1.3 BACKGROUND INFORMATION

1.3.1 Historical

The RLM is responsible for refuse removal, refuse dumps and solid waste disposal within the greater Rustenburg area in terms of the Constitution of South Africa (Act 108 of 1996). The Constitution guarantees all citizens the right to an environment that is not harmful to their

health and wellbeing. The implementing policies which bind the RLM to uphold this right include: National Environmental Management: Waste Act (Act 59 of 2008), National Waste Management Strategy, Municipal Structures Act (Act 117 of 1998), Municipal Systems Act (Act 32 of 2000) and the White Paper on Integrated Pollution and Waste Management.

The Constitution consigns accountability for waste removal, collection and disposal to the local government level. In terms of the Municipal Structures Act and the Health Act (Act 63 of 1997), local municipalities have the responsibility for the afore-mentioned activities within their area. The Municipal Systems Act provides the framework for how these functions and powers should be exercised. The local municipality shall be responsible for the passing of applicable by laws on waste management.

The corner stone principles of the National Waste Management Strategy are based on the waste hierarchy of avoidance, re-use and safe disposal. The White Paper on Integrated Pollution and Waste Management sets out principles that support the Strategy. This Strategy executes the policy principles into strategic plans and actions (DEAT, 2004).

One of the potential projects identified in the Rustenburg Integrated Waste Management Plan (IWMP), 2006, is to establish various fully functional WDC's in Rustenburg to effectively minimise waste disposal by means of recovery of recyclable and compostable waste. The area proposed for this development is located 2.9km south-west of Zinniaville, 0.5km east north east of Kremetart and approximately 1.5km north-north-west of the Rustenburg CBD. The need for this WDC is immense as it was stated in the IWMP (2006) that the population growth is increasing rapidly in Rustenburg and surrounding areas, therefore placing pressure on its waste facilities. Furthermore, Zinniaville was classified as a high priority area for a waste transfer station, according to the IWMP (2006).

In response to the IWMP recommendation, the RLM appointed BKS (Pty) Ltd to undertake an Integrated Environmental Impact Assessment for the Strumosa WDC development, located on portion 1 (remaining extent) of the farm Rustenburg Dorp en Dorpsgronde 272 JQ, RLM. This site is different from the site proposed in the IWMP due to a public outcry for the development on the suggested IWMP site.

The WDC facility will also recover organic waste for composting on-site. The recovery of recyclable and compostable materials will reduce the amount of waste going to landfill by an estimated 40%, thus saving scarce and valuable landfill airspace.

1.3.2 Project Description

The RLM identified the need for proper waste management practises to benefit the community. Several small and illegal waste disposal sites operate throughout the municipality and it was decided that these facilities would be closed and rehabilitated necessitating the need for a mini WDC in the Strumosa area. The RLM are developing a Regional Waste Disposal Landfill Site (Waterval Landfill) and all the disposable waste in the RLM will be taken to this site. The Strumosa WDC will in the interim, facilitate the transfer of waste from Rustenburg to the Townlands Landfill.

The facility will be built to facilitate the transfer of disposable waste from the area around Strumosa to the Regional Townlands Landfill site. The facility will also aim to recover as many recyclable waste products as possible and sell them to stimulate the economy of the municipal region and to maximize landfill airspace.

The lack of landfill airspace is one of the largest problems facing South African municipalities. When landfills become too full, the aesthetic and health issues they create impact on the lives of all people in the surrounding community. At the same time, having to deal with illegal waste sites and windblown litter uses up time from officials that could better be spent on the sustainability of municipal infrastructure.

The development of the Strumosa WDC will benefit the community by keeping waste in one manageable place for further transport and disposal.

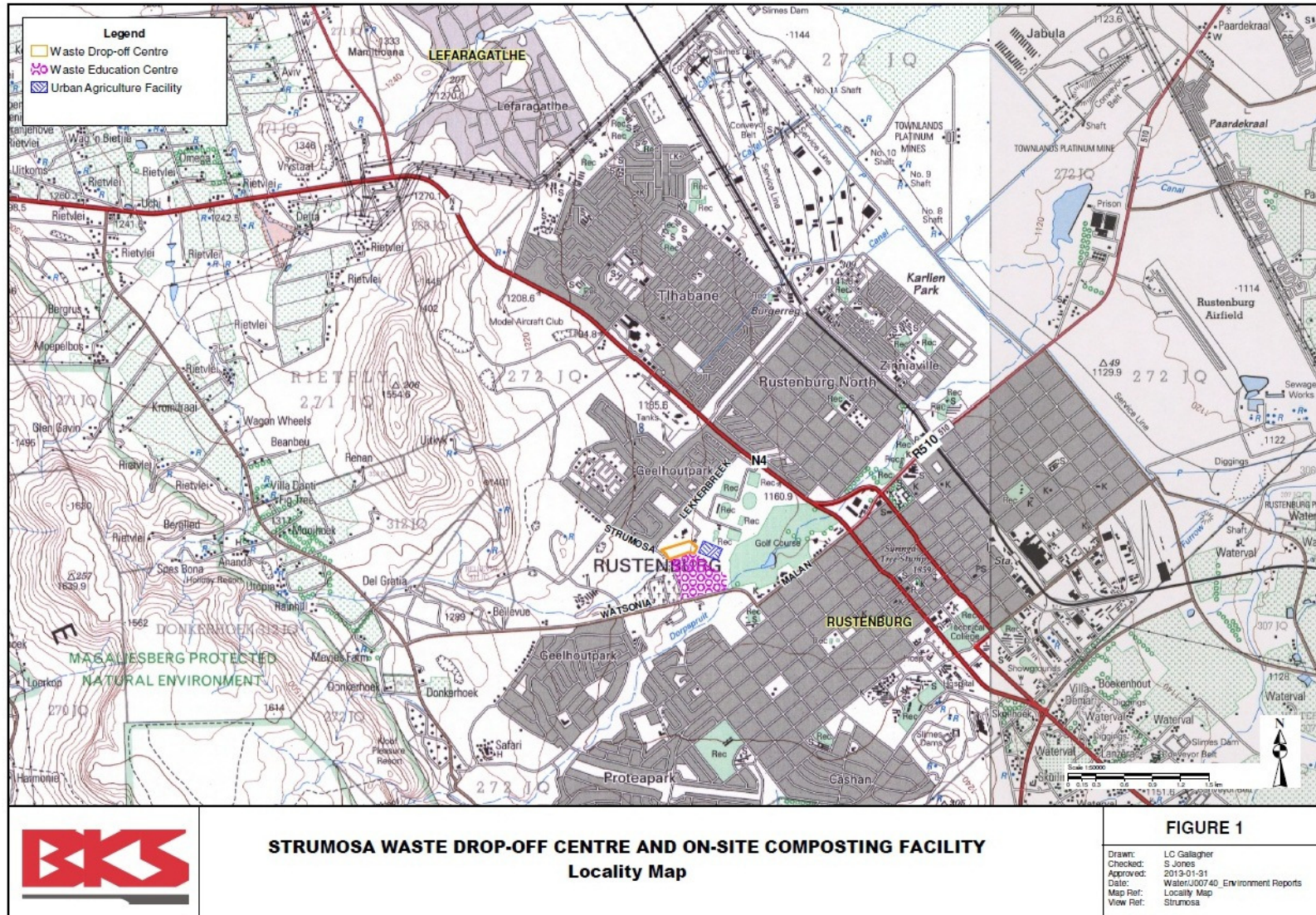


Figure 1: Strumosa WDC

1.3.3 Site Description

The proposed site for the Strumosa WDC is located on portion 1 (remaining extent) of the farm Rustenburg Dorp en Dorpsgronde 272 JQ, Rustenburg Local Municipality. A watercourse cuts the site in north-west to south-east manner.

The site is owned by the Rustenburg Local Municipality and is currently zoned as recreational land. A re-zoning process is underway to change the land use to municipal.

1.3.3.1 Status Quo

A Heritage Impact Assessment was conducted to determine if there are any heritage/cultural resources that may be impacted on by the proposed WDC. The cultural landscape qualities of the region essentially consist of a single component, i.e. a rural area in which the human occupation is made up of a pre-colonial element (Stone Age and Iron Age) as well as a much later colonial (farmer/industrial) component. However, no sites, features or objects of cultural/heritage/paleontological significance were found on the site. No objects, features or sites of cultural heritage (archaeological or historical) origin or significance were recorded at Strumosa, although recent residential and other developments would have extensively disturbed or destroyed any evidence of these if it did exist here in the past. The very dense vegetation in the area also makes archaeological visibility difficult. It should be borne in mind however that the subterranean presence of archaeological and/or historical sites, features or artefacts are always a distinct possibility. Care should therefore be taken during any development activities that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate. This would include the discovery of previously unknown graves.

1.3.4 Waste Volumes

The Strumosa WDC will be licensed to receive general waste only. This includes the following:

- Domestic (Household) Waste ;
- Building and demolition waste;
- Inert Waste;

- Business Waste, except for specific components that due to its nature or composition may be hazardous;
- Waste tyres; and
- Garden Waste ($\pm 20\%$).

The WDC will not be licensed to receive any hazardous waste like health care risk waste, asbestos waste, used oil, etc.

Based on the information obtained, the Strumosa WDC will be designed to handle a maximum of 23.65m³ of general waste per day. This is the maximum rate of deposition based on a 30 year lifetime.

1.3.5 Infrastructure

The following forms the basic infrastructural requirements for the WDC (Refer to Figure 2).

- Access control
- Receiving Building
- Public Drop off Area

1.3.5.1 Access Control

Access to the Strumosa WDC will be via an existing access road on the property. The site will be fenced off and secured by a security gate. The entrance will have a boom gate with a guardhouse and security guard to control the types of vehicles and waste allowed on and to prevent salvagers accessing the site. From the entrance, private and municipal vehicles will be directed either to the public drop-off facility or to the skip site.

The on-site roads will be built with 80mm interlocking heavy duty paving bricks. The paving was designed in order to withstand the load of waste delivery vehicles that will utilise it on a daily basis.

The entire site will be fenced using palisade or similar to prevent illegal salvaging of materials. Fencing will be approximately 1.8 m in height.

1.3.5.2 Public Drop off Area

The Public Drop-Off Area will be a split level paved area. In the middle, the level will be raised for vehicles to drive up and from which waste can be dropped into skips placed on

the lower level on the sides of the Drop-Off Area. Once they are full, the skips will be taken to the Townlands Landfill Site. Certain skips will be marked as dedicated skips for some types of recyclables, in which case these materials will go directly to the baling facility.

1.3.5.3 Stormwater Management

The stormwater infrastructure is aimed at preventing contamination of surface and groundwater. Roof overhangs have been extended to prevent water from falling near surfaces that may come into contact with waste. Water collected from roofs will be directed away from the buildings into swales, which will allow the water to soak into the ground. Rainwater on roads and “clean” paved areas (that do not come into contact with waste) will be diverted away from the road and WDC into swales.

The use of buildings to enclose the WDC is intended to prevent rainwater coming into contact with surfaces contaminated by waste.

1.3.5.4 Provision of Services

a) Water

A water storage tank with booster pumps is necessary as no water connection is available to supply water to the site. Water will have to be supplied from water tankers to fill this tank on a regular basis. The tank capacity required for the WDC will be sufficient for potable water (5 000 litres).

The hot water supply for the staff ablution facilities will consist of 1 x 800 litre storage tank within the ablution area, with 12 solar panel collectors to be installed on a concrete slab outside the building. The solar panel collectors will heat the water and the hot water will then be stored in the storage tanks for use at the WDC.

b) Sewer

A sewage line already exists on the southern half of the site, while another is located at a portion of the northern border to serve the neighbouring municipal parks nursery buildings.

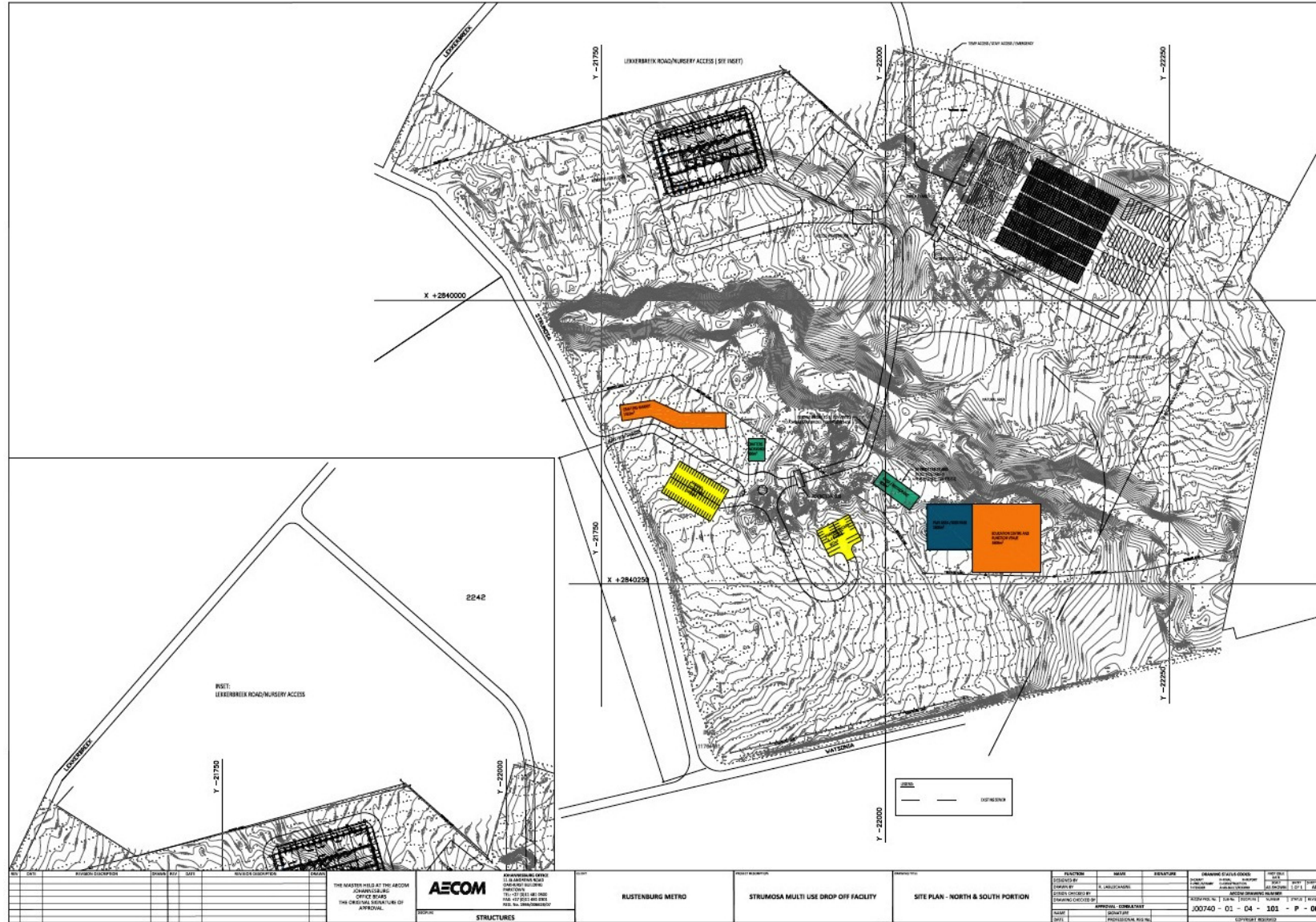


Figure 2:
Conceptual
Layout the
WDC.

1.4 LEGAL FRAMEWORK

The project must be implemented within the framework of the NEMA and other relevant environmentally related legislation as well as the project specific conditions of the EA. Please refer to **Error! Reference source not found.** below.

Table 3: List of Applicable Legislation and Guidelines

Legislation	Sections	Relates to
The Constitution (Act 108 of 1996)	Chapter 2	Bill of Rights
	Section 24	Environmental rights
	Section 25	Rights in property
	Section 32	Administrative justice
	Section 33	Access to information
National Environmental Management Act (Act 107 of 1998) as amended ¹	Section 2	Defines the strategic environmental management goals, principles and objectives of the government. Applies throughout the country to the actions of all organs of state that may significantly affect the environment.
	Section 24	Provides for the prohibition, restriction and control of activities which are likely to have a detrimental effect on the environment.
	Section 28	Duty of care and remediation of environmental damage. The scheme owner has a general duty to care for the environment and to institute such measures as may be needed to demonstrate such care. The duty of care has been amended to include significant pollution or degradation that occurred before the commencement of the NEMA that arises or is likely to arise at a different time from the actual activity that caused the contamination or that arises through an act or activity of a person that results in a change to pre-existing contamination.
	Section 30	Control of emergency incidents. Responsible person's duties relating to reporting and remediation actions regarding emergency incidents. A criminal sanction may be imposed on the responsible person for failure to comply with the reporting requirements and obligations to address any emergency incidents.
Environment Conservation Act (Act 73 of 1989) and regulations	The Act has been substantially repealed by the NEMA. However, there are certain regulations under the Act which are still in operation, such as the National Noise Control Regulations.	
National	Section 16	General duty in terms of waste management

¹The NEMA 2010 EIA regulations R543, R544, R545, R546 may be relevant for certain activities, such as those that may need to take place in or close to water resources.

Environmental Management: Waste Act (Act 59 of 2008) (NEMWA)	Section 17	Reduction, re-use, recycling and recovery of waste
	Section 26	Prohibition of unauthorised disposal of waste
	Section 27	Littering
National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA)	Sections 65-69	These sections deal with restricted activities involving alien species, restricted activities involving certain alien species totally prohibited, and duty of care relating to alien species.
	Sections 71 and 73	These sections deal with restricted activities involving listed invasive species and duty of care relating to listed invasive species.
National Environmental Management: Air Quality Act (Act 39 of 2004) ²	Section 32	Control of dust
	Section 34	Control of noise
	Section 35	Control of offensive odours
	Schedule 2	Ambient air quality standards
Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act (Act 36 of 1947) and regulations	Sections 3 to 10	Control of the use of registered pesticides, herbicides (weed killers) and fertilisers. Special precautions must be taken to prevent workers from being exposed to chemical substances in this regard. Workers handling these remedies must also be registered in terms of the Act.
Conservation of Agricultural Resources Act (Act 43 of 1983) and regulations	Section 5, 6	Implementation of control measures for alien and invasive plant species
National Heritage Resources Act (Act 25 of 1999)	Section 35	No person may, without a permit issued by the responsible heritage resources authority, destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site.
	Section 36	No person may, without a permit issued by the South African Heritage Resource Agency (SAHRA) or a provincial heritage resources authority, destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority. "Grave" is widely defined in the Act to include the contents, headstone or other marker of such a place, and any other structure on or associated with such place.
	Section 38	This section provides for Heritage Impact Assessments (HIA), which are not covered under the NEMA. The HIA will be approved by the authorising body of the provincial directorate of environmental affairs, which is required to take the provincial heritage resources authorities' comments into account prior to making a

²The National Ambient Air Quality Standards have been published and replace the SANS codes, R1210, GG 32816 of 24 December 2009.

		decision on the HIA.
Occupational Health and Safety Act (Act 85 of 1993) and regulations	General Administration Regulations GN R1449 (Section 7)	Material Safety Data Sheets must be made available at the request of any interested or affected party.
	Section 8	General duties of employers to their employees
	Section 9	General duties of employers and self-employed persons to persons other than their employees
National Water Act (Act 36 of 1998) and regulations	Section 19	Prevention of and remedying the effects of pollution of a water body
	Section 20	Control of emergency incidents
	Chapter 4	Use of water and licensing
Hazardous Substances Act (Act 15 of 1973) and regulations		Provides for the definition, classification, use, operation, modification, disposal or dumping of hazardous substances.
Minimum requirements for storage, handling and disposal of hazardous waste, DWAF guidelines, 1998	Section 10	Temporary hazardous waste storage: time, volume and other requirements
National Road Traffic Act (Act 93 of 1996) and regulations	Section 54	Transportation of dangerous goods
Fencing Act (Act 31 of 1963)	Section 17	Any person erecting a boundary fence may clean any bush along the line of the fence up to 1.5 metres on each side thereof and remove any tree standing in the immediate line of the fence. However, this provision must be read in conjunction with the environmental legal provisions relevant to the protection of flora.
Mineral and Petroleum Resources Development Act (28 of 2002)		To make provision for equitable access to and sustainable development of the nation's mineral and petroleum resources; and to provide for matters connected therewith.
National Veld and Forest Fires Act (Act 101 of 1998)	Chapter 2	Promotes and regulates the formation of fire protection associations which aim to manage and coordinate fire protection and fire services in an area.
	Chapter 4, 5	Organisations are required to make and maintain firebreaks and fire-fighting equipment and personnel should there be a risk that a fire may start or spread from the premises.
DEA Integrated Environmental Management		DEA Integrated Environmental Management Information Series (2004): Environmental Management Plans: DEA Guideline on compiling EMPrs.
Municipal Structures Act (Act		To provide for the establishment of municipalities and their related functions, powers, internal systems and structures..

117 of 1998)	
Municipal Systems Act (Act 32 of 2000)	To provide for the principles, mechanisms and processes to ensure equitable and essential services are provided to all social and economic groups.
Health Act (Act 63 of 1977)	To provide for measures for the promotion of health and the rendering of health services.
SANS 1929	Ambient air quality – limits for common pollutants ³
SANS 10103	The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication.
SANS 10128	Bunding of fuel storage tanks
National Waste Policy	Provides for the identification of and governance arrangements for priority initiatives and measures for performance assessment. The National Waste Management Strategy (NWMS) seeks to systematically improve waste management in South Africa. Therefore, as a legislative requirement of the NEM:WA, the NWMS seeks to ensure sustainable design, resource efficiency and waste prevention practices are implemented (DEA, NWMS Draft, 2010).
North West Environmental Implementation Plan	Provides for the coordination of environmental policies, programmes, plans and decisions within the various national departments that exercise functions that may impact upon the environment. Provision of community participation to ensure sustainable development and environmental integrity. Ensure compliance to relevant co-operative governance and environmental management agreements
Rustenburg Spatial Development Framework	Development for an integrated city which meets sustainable requirements and provides residents with a safe and healthy living environment and increased economic development within the community.
The Rustenburg Local Municipality Integrated Environmental Management Policy	<ul style="list-style-type: none"> ○ Provision of improved housing and service delivery. ○ Provide effective pollution and prevention management activities to improve quality of environment and human health. ○ Reducing amounts of solid, liquid and gaseous waste generated. ○ Prevent continued and future pollution. ○ Effectively regulate waste disposal discharges into water resources. ○ Manage to improve Rustenburg air quality.

1.4.1 Legislation Specific to Waste Transfer Station

The National Environmental Management: Waste Act (Act 59 of 2008) (NEM:WA) regulates waste management in order to protect human and environmental health by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. It also provides for national norms and standards for regulating the management of waste by all spheres of government,

³ Replaced by R1210

providing for specific waste management measures to licensing and the control of waste management activities and remediation activities associated with contaminated land. This legislation provides for compliance and enforcement of the above requirements.

In terms of the National Environmental Management: Waste Act, "waste" means any substance, whether or not that substance can be reduced, re-used, recycled and recovered—

(a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of; 30

(b) which the generator has no further use of for (he purposes of production;

(c) that must be treated or disposed of; or

(d) that is identified as a waste by the Minister by notice in the *Gazette*,

and includes waste generated by the mining, medical or other sector, but—

(i) a by-product is not considered waste; and 35

(ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste;

An application for development has to conform to the requirements of the NEM:WA and the regulations promulgated in terms of Section 19(1) thereof. The regulations promulgated under Section 19(1) are currently listed in GNR No. 718 of July 2009.

All activities listed in the abovementioned regulations shall be subject to a Basic Assessment Process for Category A activities, or an EIA Process for Category B activities, and will require a Waste Management License.

The establishment of the proposed WDC involves the following activities listed under Category A in GN 718, published in terms of the NEM:WA, which may not commence without a waste management licence:

(1) The storage, including temporary storage of general waste at a facility that has the capacity to store in excess of 100m³ of general waste at any one time, excluding the storage of waste in lagoons.

Definition of General Waste in the Minimum Requirements for Waste Disposal by Landfill (DWA, 1998): General waste is a generic term for waste that, because of its composition and characteristics, does not pose a significant threat to public health; or the environment if properly managed. Examples include domestic, commercial, certain industrial wastes and builders' rubble. General waste may have insignificant quantities of hazardous substances dispersed within it, for example, batteries, insecticides, weed-killers and medical waste discarded on domestic and commercial premises.

(4) The storage of waste tyres in a storage area exceeding 500m²

(5) The sorting, shredding and bailing of general waste at a facility that has capacity to process in excess of one ton of general waste per day.

(7) The recycling or re-use of general waste of more than 10 tonnes per month.

(8) The recovery of waste including the refining, utilising, treatment or co-processing of the waste at a facility that has the capacity to process in excess of 3 tons of general waste or less than 500kg of hazardous waste per day, excluding recover that takes place as place as an integral part of an internal manufacturing process within the same premises.

(18) The construction of facilities for activities listed in Category A of this schedule (not in isolation to associated activity).

2. BACKGROUND TO ENVIRONMENTAL MANAGEMENT PROGRAMME

2.1 NATURE OF EMPr

The EMPr is a legally required document in the same manner as a licence or EA is required prior to undertaking an activity. The document is RLM's response to ensure that it complies with the requirements of reasonable protection of the environment as imposed by Section 28 of NEMA in particular, which refers to duty of care. The EIA Regulations, 2010, are used as a guideline for the content of the EMPr.

The mitigation measures required in terms of Section 28, subsection (1) may include measures to –

- investigate, assess and evaluate the impact on the environment;
- inform and educate employees about the environmental risks of their work and the manner in which their tasks must be performed to avoid causing significant pollution or degradation of the environment;
- cease, modify or control any act, activity or process causing the pollution or degradation;
- contain or prevent the movement of pollutants or the cause of degradation;
- eliminate any source of the pollution or degradation; or
- remedy the effects of the pollution or degradation.

This EMPr, as a standalone document, shall be used to guide and regulate environmental performance of the project through the construction, operation, rehabilitation and decommissioning phases. It contains the following elements:

- goal setting and performance measurement;
- compliance management;
- an assessment and management system;
- community relations;
- roles, responsibilities and accountabilities;
- risk management;
- emergency preparedness and response; and
- incident reporting and investigation.

To achieve these environmental management requirements, a defined and implementable system must be in place. This system comprises the *what* and the *how*.

- The *what*: The EMPr indicates to the RLM what is required by setting objectives with measurable targets in place for the successful management of the construction, operation, rehabilitation and decommissioning of the transfer station.

- The how: The RLM is required to formulate procedures and/or guideline documents in compliance with its Quality Management System (QMS) requirements on how the objectives will be met.

2.2 OBJECTIVES OF EMPR

The main objective of the EMPr is to ensure the implementation of environmental practices that are aimed at the best form of environmental protection. The aim is to ensure that the RLM takes reasonable measures to protect the environment and to remedy impacts to the environment, as required by the Duty of Care introduced by the NEMA, Section 28. The EMPr draws the RLM's attention to the monitoring, auditing and corrective actions needed during the construction, operation, rehabilitation and decommissioning of the garden transfer station. Therefore, the other objectives⁴ of the EMPr are to:

- avoid, minimise or correct the disturbance of ecosystems and loss of biodiversity;
- avoid, minimise or correct pollution and degradation of the environment;
- avoid or minimise waste, to reuse or recycle waste where possible and to dispose of waste in a responsible manner;
- apply a risk-averse and cautious approach; and
- anticipate and prevent negative impacts on the environment and on people's environmental rights. Where impacts cannot be prevented, such impacts must be minimised and mitigated.

2.3 SCOPE OF EMPR

The EMPr outlines the impacts and mitigation measures for the construction, operation, rehabilitation and decommissioning of the transfer station. The roles, responsibilities and reporting procedures have been identified in the EMPr.

The EMPr also contains a series of environmental specifications designed to avoid, minimise and, ultimately, manage the potential environmental impacts associated with the construction, operation, rehabilitation and decommissioning of the transfer station.

2.4 THE CONTINUOUS IMPROVEMENT APPROACH

The approach adopted for this EMPr is derived from the Deming Cycle (Refer to Figure 3), a cycle of continuous improvement that entails the reiterative actions of plan, do, check and act.

2.4.1 Plan

The EMPr for the construction, operation, rehabilitation and decommissioning works communicated the Environmental Policy (Section 3.1 and 3.2) and intended

⁴As defined by the National Environmental Management Act (No. 107 of 1998).

environmental governance of the RLM to all parties. The project will be implemented under this policy, and all parties acting on behalf of the RLM will adhere to this policy. The organisational relationships required have been illustrated and the roles and responsibilities of each “organisation” have been clearly defined (Section 3.2).

Project-specific planning for the construction, operation, rehabilitation and decommissioning works involved listing activities associated with the works and the environmental aspects that may be impacted on. This provided a starting point from which aspect-specific environmental management objectives were established.

Environmental performance indicators were determined for these objectives and measurable targets were prescribed to monitor the environmental performance of the project.

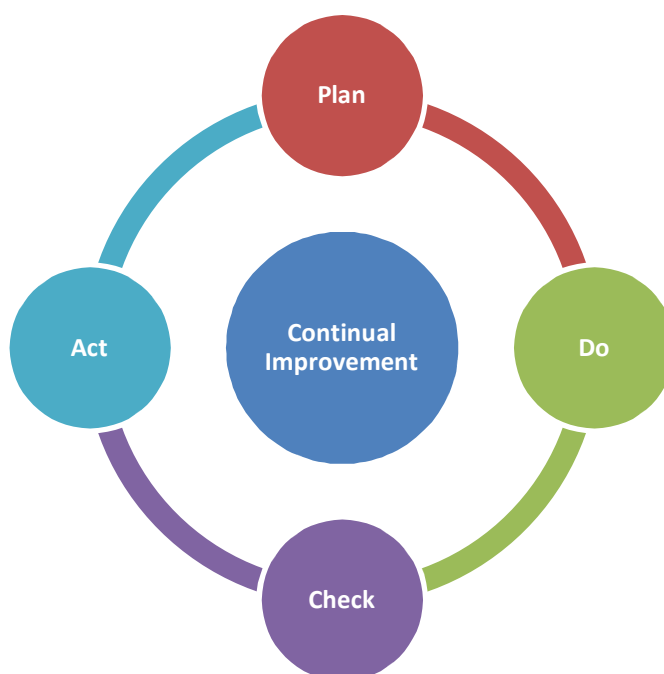


Figure 3: The Deming Cycle

Achieving the targets depends on compliance with this EMPr and the legislative requirements that underpin it.

2.4.2 Do

Throughout the construction, operation, rehabilitation and decommissioning of the transfer station, the RLM will be required to develop and maintain a QMS that is designed to ensure that best management practices are implemented in day-to-day management

related to the construction, operation, rehabilitation and decommissioning activities. Such a QMS should at least include the following information:

- location and extent of associated infrastructure;
- associated activities, such as the transportation of people and equipment;
- resources and experience required (staffing);
- materials and equipment to be used;
- management actions;
- human resources used;
- construction, operation, rehabilitation and decommissioning-monitoring activities;
- emergency / disaster incident and reaction procedures; and
- rehabilitation procedures for the impacted environment.

Including these information topics in the Contractor's procedures and/or guideline documents will ensure that aspect-specific environmental management (based on this EMPr) forms an integral part of the construction, operation, rehabilitation and decommissioning of the transfer station. It is, therefore, important for the Contractor to integrate the environmental management requirements into the construction, operation, rehabilitation and decommissioning activities by way of set procedures that are set out in its QMS.

The incorporation of the how and what (Refer to Section 2.1) will ensure that the RLM understands what is required of it and that it allows systems to be put in place to ensure that the execution of the requirements is monitored. The RLM should also develop a programme for monitoring aspect-specific indicators in terms of the targets provided in the EMPr.

2.4.3 Check

A system of assessing monitoring results has been developed (Section 3.2) to check the RLM's environmental management performance. Continuous assessment facilitates proactive management of environmental issues. Mitigation measures can then be successfully implemented on an ongoing basis to keep environmental indicators within their target thresholds. Moreover, the assessment system also enables the assessment of the efficacy of the EMPr.

Regular auditing of environmental performance (Section 3.2) is prescribed to prove and preserve accountability in a legislative context.

2.4.4 Act

The assessments and monitoring of the results and findings of the regular audits must be documented within a reporting system (Section 3.2). Precautionary mitigation measures and corrective actions will be prescribed and instructions will be given in order to implement these in the field.

The findings of monitoring and auditing programmes can also be used to update the EMPr. Although the EMPr is a project-specific document, it is dynamic and should be updated regularly to address the changing circumstances of the scheme.

3. EMPr FRAMEWORK

3.1 RLM'S ENVIRONMENTAL POLICY

Still to be provided by RLM

3.2 INSTITUTIONAL AND FUNCTIONAL ARRANGEMENTS⁵

The institutional and functional arrangements indicate the role players and institutional linkages in the construction, operation, rehabilitation and decommissioning of the Strumosa Waste Drop-Off Centre (refer to Sections 3.2.1 – 3.2.5). The details are explained in this section.

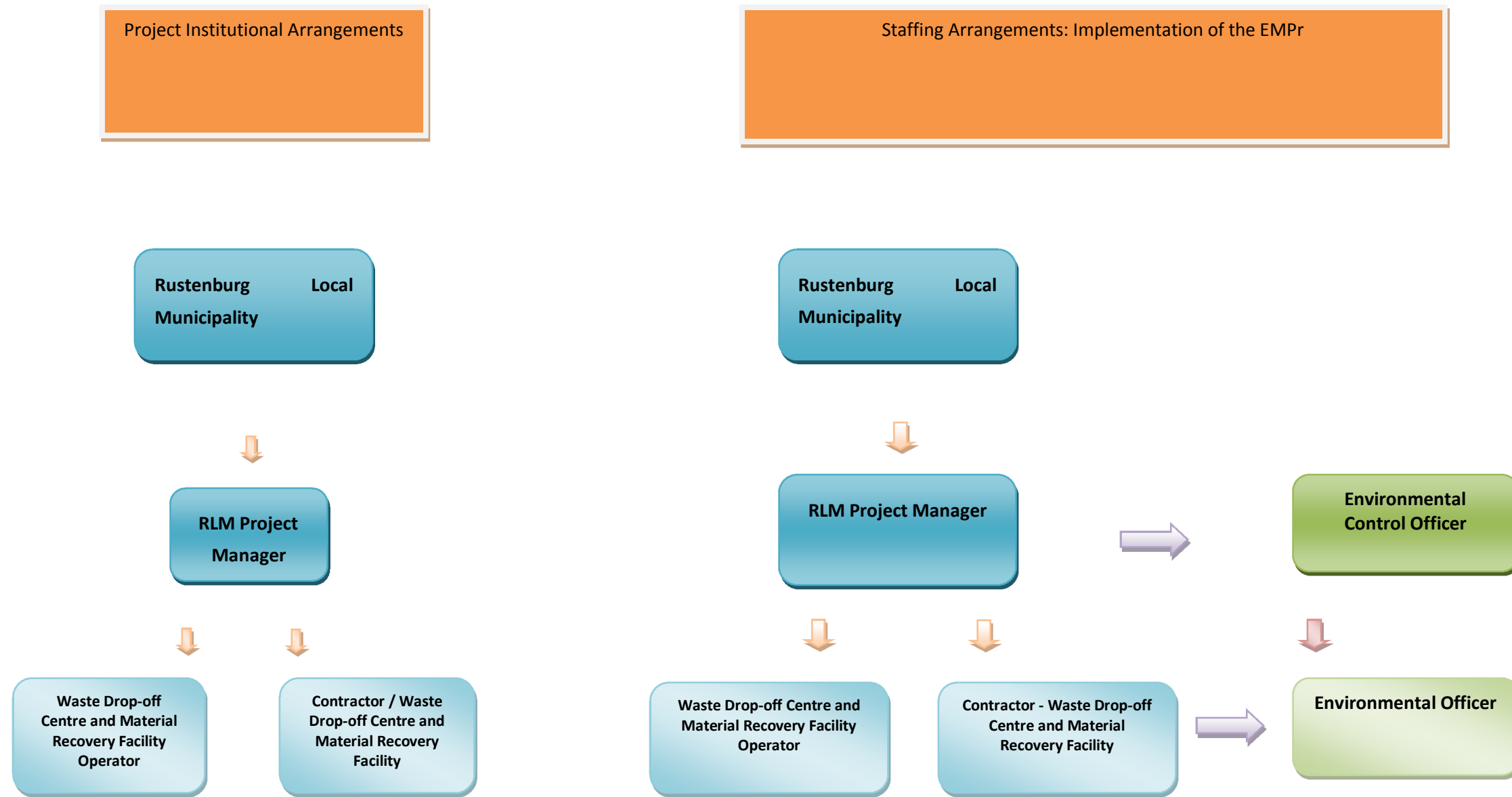


Figure 4: Institutional arrangements

⁵ In the context of the Strumosa Waste Drop-off Centre.

The following paragraph should be read using Figure 4 as a reference.

During the construction, operation, rehabilitation and decommissioning phases it is RLM's responsibility to ensure that the Contractors involved in undertaking the works receive a copy of the EMPr and ensure compliance with it. The EMPr is to be included as part of all tender documents. The appointed Contractor will be required to comply with the management regulations set out in this Draft EMPr. The RLM will be responsible for ensuring that all staff adhere to the Draft EMPr specifications. A copy of the EMPr and EA from the NWDETECT will be kept on site during all works and made available to all Contractor staff, regulatory authorities and I&APs upon request.

The roles and responsibilities of all role players are presented below.

3.2.1 RLM

The RLM (Applicant) will be responsible for the overall environmental control on the project site during the construction, operation, rehabilitation and decommissioning phases. The RLM's responsibilities will include:

- Appointing an independent ECO for the duration of the Contract;
- Being fully familiar with the BA Report, EA conditions and the EMPr;
- Forwarding audit reports (prepared by the ECO) to the NWDETECT;
- Notifying the NWDETECT of changes in the developments that result in significant environmental impacts;
- Notifying the NWDETECT within 30 days of change of ownership/Applicant;
- Notifying the NWDETECT of any change of address of the owner/developer;
- The overall implementation of the EMPr;
- Ensuring compliance, by all parties, and the imposition of penalties for non-compliance through the RLM Project Manager and ECO;
- Implementing corrective and preventive actions, where required;
- Preventing pollution and actions that will harm or may cause harm to the environment;
- Ensuring the activity does not commence within 30 days of the EA being issued;
- Notifying the NWDETECT within 30 days prior to construction, operation, rehabilitation and decommissioning activities commence;
- Notifying the NWDETECT in writing within 24 hours if any condition in the EA cannot be or is not adhered to; and
- Notifying the NWDETECT 14 days prior to commencement of the operational phase.

3.2.2 RLM Project Manager

The RLM Project Manager will be responsible for the implementation of the EMPr throughout the construction, operation, rehabilitation and decommissioning phases and will report directly to the RLM (or its appointed representative). The responsibilities of the RLM Project Manager will include:

- Being fully familiar with the BA Report, EA conditions and the EMPr;
- Ensuring that all Contractors and Sub-Contractors adhere to the EMPr;
- Maintaining a register of complaints and queries;
- Responding to any project-related complaints; and
- Maintaining an environmental incident book of all incidents occurring on site.

3.2.3 Contractor

The Contractor(s) will:

- be responsible for the construction, operation, rehabilitation and decommissioning activities for the duration of the contract(s) (so will Sub-Contractors and contract workers);
- be responsible for ensuring work conducted is done within the framework of the EA, EMPr and applicable legislation;
- ensure that all Sub-Contractors have a copy of and are fully conversant with the contents of the EMPr;
- be required to provide Method Statements setting out, in detail, how management actions contained in the EMPr will be implemented;
- be required to monitor construction, operation, rehabilitation and decommissioning related impacts upon the surrounding environment as per the Environmental Monitoring Method Statement; and
- appoint an Environmental Officer (EO).

3.2.4 Environmental Control Officer

The construction, operation, rehabilitation and decommissioning activities must be monitored by an independent Environmental Control Officer (ECO). The ECO must be well versed in environmental matters and have a minimum of two years of relevant on-site experience. The ECO should have a relevant environmental degree or other relevant tertiary qualification. The ECO should be a mature, level-headed and firm person with above-average communication and negotiating skills, and be able to handle and address conflict management.

The ECO's responsibilities include:

- Monitoring compliance with the environmental requirements set in the EMPr and EA;
- Reviewing a weekly environmental monitoring report that is submitted by the EO during the construction, operation, rehabilitation and decommissioning phases of the project;
- Advising the RLM and RLM Project Manager about the interpretation, implementation and enforcement of the EMPr;
- Liaising with an archaeologist or heritage resources practitioner in the case of unearthing of artefacts and/or graves;
- Undertaking unannounced audits of adherence to the EMPr for the duration of the contract (i.e. weekly for the first and last month of construction, bi-weekly during the remainder of the construction period) and ensuring the audits are at least two hours long;
- Recommending rectification of non-compliances with the EMPr before significant impacts occur;
- Ensuring the Communications Register is maintained and all such complaints are dealt with within 14 days;
- Reporting any significant environmental incidents to NWDEDECT or other relevant regulatory authorities as may be required;
- Ensuring an environmental incident book of all incidents occurring is maintained and that corrective measures have been undertaken;
- Reviewing and approving Environmental Method Statements;
- Inspecting and reporting on the efficiency of the method statements' management and mitigation programme; and
- Ensuring environmental awareness training is offered to all personnel.

The ECO is responsible for providing an independent evaluation of compliance with the EMPr and not for enforcement of conditions of the EMPr. The RLM is responsible for enforcement of the conditions of the EMPr.

The Contractor and the Environmental Officer are accountable to the ECO for non-compliance with the EMPr. The ECO provides feedback to the RLM Project Manager who, in turn, reports to the RLM and I&APs, as required. Issues of non-compliance raised by the ECO must be taken up by the RLM Project Manager and resolved with the Contractor as per the conditions of his/her contract.

The ECO will remain employed for the full duration of the contract until all snag items have been resolved, rehabilitation measures have been completed, and the WDC is finally handed over to the RLM, thereby indicting the start of the operational phase.

4. SUMMARY OF IMPACTS

All construction activities will be limited to the WDC footprint. All activities outside this area need to be approved by the RLM Project Manager prior to the commencement of construction works.

All interactions between the Contractor and I&APs will be via the RLM Project Manager. The Contractor may not enter into agreements with I&APs or undertake work on private property *in lieu* of favours, payment or any other means where either party may benefit from the activities/permissions of the other party.

If the Contractor requires changes to the construction programme, these must be communicated via the RLM Project Manager to the affected I&APs.

The identification and summarisation of impacts and risks associated with the WDC are set out in this section.

4.1 CONSTRUCTION: DIRECT IMPACTS

- Loss of Biodiversity – clearing of vegetation and topsoil resulting in loss of vulnerable/endangered species or displacement of faunal species, destruction of rocky outcrops.
- Loss of vegetation cover - clearing of vegetation resulting in increased stormwater velocity and erosion.
- Expansive clays –potential for cracking and distortion of buildings when clays expand and contract.
- Water pollution – stormwater coming into contact with construction materials, oil spills, construction waste.
- Soil pollution–contamination by construction material, oil spills including mismanagement and loss of biological integrity.
- Dust generation – due to movement of construction vehicles on site, stockpiling of soils.
- Visual – unsightly placement of construction material and vehicles, bad housekeeping.
- Noise – due to construction activities and movement of construction vehicles.

- Safety and fire – open excavations and movement of construction vehicles cause a safety risk to people using footpaths in the area. Risk of fire due to construction activities and unauthorised fires on site (during cooking for example).
- Traffic – movement of construction vehicles on Strumosa Road, Lekkerbreek Road, and the access road to the site from the golf course side.
- Employment and income generation – local labour will be sourced (\pm 25 people).
- Skills development – employees may learn new construction skills.

4.2 OPERATIONAL: DIRECT IMPACTS

- Landscaping– landscaping with indigenous plants will increase indigenous species diversity and provide habitat to terrestrial fauna and birds
- Water pollution – stormwater coming into contact with waste.
- Soil pollution – due to waste or contaminated stormwater coming into contact with soil.
- Dust generation - due to movement of vehicles accessing the site via the private road.
- Malodours – from stored waste on site.
- Litter – windblown litter from the site entering the surrounding environment.
- Visual – establishment of WDC buildings in an area that is generally open veld.
- Noise – emanating from the vehicles.
- Security – risk of salvagers attempting illegal access to the site, risk of criminal activity and vandalism.
- Safety and fire – the facility includes heavy machinery (skip loader). Handling of waste is a health risk. Accumulation of combustible materials, increase the risk of fires spreading.
- Traffic – movement of vehicles on Strumosa Road, Lekkerbreek Road, and the access road to the site from the golf course side.
- Employment and income generation - local people will be employed during operation (\pm 25 people). A tariff system will be put in place for private individuals/companies using the site.
- Increase in pests (flies, rodents) – storage of waste on site attracts pests.

- Prevention of illegal dumping – provision of a facility where people can legally drop off waste, reducing illegal dumping at the Strumosa site and in Rustenburg generally, which is a problem across the whole RLM.
- Waste information system and integrated regional waste management – meeting the requirements of the IWMP (2006) and enabling the RLM to start monitoring waste generation in the town of Rustenburg for use in managing landfill space requirements. Better provision of waste services due to better knowledge of the waste stream.

4.3 OPERATIONAL: INDIRECT IMPACTS

- Reduced transport costs, reduced carbon production, resource conservation – central collection and waste minimisation reduces transportation requirements from source to landfill, thus reducing transport costs and fuel consumption/carbon production.

4.4 DECOMMISSIONING AND CLOSURE: DIRECT IMPACTS

- Landscape Scarring – due to poor rehabilitation should the site ever be decommissioned.
- Employment and income generation – redundancy of staff if the WDC is ever decommissioned.

5. ENVIRONMENTAL DOCUMENTATION, REPORTING AND COMPLIANCE

5.1 DOCUMENTATION

The following documentation must be kept on the project site for the full duration of the contract:

- Environmental Management Programme approved by the NWDEDECT;
- Environmental Authorisation issued by the NWDEDECT;
- Environmental Policy of the Contractor;
- Environmental Method Statements compiled by the Contractor;
- minutes and attendance of all environmental meetings;
- Environmental Incident Book;
- Communications Register;
- Register of Audits;
- Non-Conformance Reports (NCR);
- Waste manifests; and
- Relevant legislation referred to in Table 3.

5.2 RESPONSIBILITY MATRIX AND ORGANOGRAM

The Contractor must have a Responsibility Matrix and Organogram displayed in an appropriate location. This will identify responsible parties, their contact details, and highlight their roles and responsibilities. This document must be updated on a regular basis to ensure that information is correct.

5.3 ENVIRONMENTAL INSPECTIONS AND AUDITS

The ECO shall undertake environmental audits on the following basis: weekly for the first month of construction, thereafter bi-weekly audits, and weekly audits for the last month of construction. These audits will be conducted to monitor compliance with the EMPr and EA conditions. Photographic records of the WDC will support the visual assessment. The ECO will submit all audits to the RLM Project Manager. These findings will be kept on file on the WDC.

External auditing may take place at unspecified times by the NWDEDECT and/or other relevant authorities. The NWDEDECT may, from time to time, also ask to view copies of audit reports drafted by the ECO.

5.4 ENVIRONMENTAL SITE MEETINGS

An Environmental Site Meeting shall take place on a biweekly basis. This meeting shall be chaired by a RLM Project Manager with the ECO, EO and Contractor(s) in attendance.

5.5 NON-CONFORMANCE REPORT

A Non-Conformance Report (NCR) will be issued to the Contractor as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be requested by the ECO and issued via the RLM Project Manager to the Contractor in writing. Preceding the issuing of the NCR, the Contractor will be presented with an opportunity to rectify the outstanding issue.

Preceding requirements to the submitting of the NCR will entail an issue that has been highlighted to the Contractor in the audits for corrective action. Should this issue not be corrected or completed to the satisfaction of the RLM Project Manager and ECO, the issue is escalated to an NCR.

Should the ECO assess an incident / issue and find it to be significant (e.g. non-repairable damage upon the environment), it will be reported to the NWDETECT and immediately escalated to the level of an NCR. This will be done in consultation with the RLM Project Manager.

The following information should be recorded in the NCR:

- Details of non-conformance.
- Any plant or equipment involved.
- Any chemicals or hazardous substances involved.
- Work procedures not followed.
- Any other physical aspects.
- Nature of the risk.
- Actions agreed to by all parties following consultation that should adequately address the identified non-conformance. This may take the form of specific control measures and should take the hierarchy of controls into account. This must accompany the NCR for filing purposes.
- The agreed timeframe by which the Contractor should have implemented the actions documented in the NCR.
- The ECO should verify that the agreed actions have taken place on or soon after the agreed completion date. Where the actions are complete, the ECO and Contractor should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

5.6 ENVIRONMENTAL EMERGENCY RESPONSE

The Contractor's environmental emergency procedures must ensure that there will be an appropriate response to unexpected or accidental actions or incidents that could cause environmental impacts. Such incidents may include:

- Accidental discharges to water (i.e. into the river) and land;
- Accidental spillage of hazardous substances (typically oil, petrol, and diesel);
- Accidental toxic emissions into the air; and
- Specific environmental and ecosystem effects from accidental releases or incidents.
- The Environmental Emergency Response Plan is separate to the Health and Safety Plan as it is aimed at responding to environmental incidents and must ensure and include the following:
 - Construction employees shall be adequately trained in terms of incidents and emergency situations;
 - Details of the organisation (manpower) and responsibilities, accountability and liability of personnel;
 - A list of key personnel and contact numbers;
 - Details of emergency services (e.g. the fire department, spill clean-up services) shall be listed;
 - Internal and external communication plans, including prescribed reporting procedures;
 - Actions to be taken in the event of different types of emergencies;
 - Incident recording, progress reporting and remediation measures to be implemented; and
 - Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

The Contractor(s) will comply with the environmental emergency preparedness and incident and accident-reporting requirements, as required by the Occupational Health and Safety Act (Act No. 85 of 1993), the National Environmental Management Act (Act No. 107 of 1998), the National Water Act (Act No. 36 of 1998), and/or any other relevant legislation listed in Table 3

5.7 ENVIRONMENTAL METHOD STATEMENTS

It is a statutory requirement to ensure the wellbeing of employees and of the environment. Therefore, the Contractor must submit Environmental Method Statements to the RLM Project Manager and the ECO for approval prior to the commencement of construction works.

A Method Statement is a document detailing how a particular process will be carried out. It should detail the possible dangers/risks associated with the particular part of the project and the methods of control to be established and to show how the work will be managed in a safe and environmentally responsible manner. The Method Statement shall also include the following applicable information:

- the type of activity;
- timing and location of the activity;
- implementation procedures;
- materials and equipment to be used;
- transportation of the equipment to and from the site;
- how the equipment/material will be moved while on site;
- location and extent of site office and storage areas;
- identification of impacts that might result from the activity;
- methodology and/or specifications for impact prevention or containment and for environmental monitoring;
- emergency/disaster incident and reaction procedures (required to be demonstrated); and
- rehabilitation procedures and continued maintenance of the impacted environment.

The Contractor will be accountable for all actions taken in non-compliance of the approved Method Statements. The Contractor shall keep all the Method Statements and subsequent revisions on file, copies of which must be distributed to all relevant personnel for implementation.

The Contractor will be required to submit, as a minimum, the Method Statements listed in Table 4 for approval by the RLM Project Manager and the ECO (refer to Annexure D) prior to the start of construction activities.

Table 4: List of Method Statements Required Prior to Construction

Method Statement	Objective	Target	Criteria
Access	Institute adequate access agreements and measures to ensure the safety of landowners and integrity of the gates/fences.	No damage to existing gates and fences. All gates equipped with locks to prevent unauthorised access. No complaints about open gates. Compliance with regulatory requirements.	Access agreements between Contractor and landowner. Implementation of suitable access and fencing requirements.
Aesthetics	Reduce construction impacts upon the aesthetics of the surrounding environment.	No complaints from I&APs.	Implementation of measures to reduce impacts upon the aesthetics of the surrounding landscape.
Bunding	Contain and manage all hazardous substance releases into the environment.	Zero (0) spills No environmental pollution occurring. Management according to agreed procedures.	Method of bunding and covering for static and mobile plant
Construction Camp and Office Establishment	Ensure site infrastructure, plant, materials and equipment are contained within a suitably secure locality that is adequately zoned and authorised in terms of regulatory requirements.	No complaints from landowners No damage to private property Compliance to regulatory requirements. No unplanned disturbance to construction related activities.	Site office/yard layout and preparation Method of installing fences required for no-go areas, working areas and construction areas Preparation of the working area Removal of vegetation
Cement Mixing / Concrete Batching / Bentonite Mixing	Provide measures to contain cementitious products impacting upon the surrounding environment.	All cementitious mixing to occur within demarcated localities. No indiscriminate spoiling of cementitious products in non-designated areas. No impacts upon receiving water resources.	Location, layout and preparation of cement / concrete batching facilities, including the methods employed for mixing concrete and the management of run-off water from such areas.
Contaminated Water	Ensure no contamination or pollution of water impacted upon by construction related activities.	All waste and contaminated water must be monitored and comply with regulatory requirements.	Contaminated water management, including the containment of run-off and polluted water

Method Statement	Objective	Target	Criteria
Dust	Reduce construction related dust impacts on the surrounding environment. Prevent dust nuisance and health impacts on people and animals in the area.	No complaints from I&APs. Dust emissions must be monitored and comply with regulatory requirements.	Dust control and monitoring measures
Environmental Monitoring	Implement a programme whereby impacts upon the surrounding can be monitored and implement measures to mitigate such impacts.	Compliance with regulatory requirements. Ensure no incidents or accidents occur which negatively impact upon the surrounding environment.	Monitoring construction-related impacts upon the surrounding environment is kept within the environmental specifications and applicable legislation. The following variables are to be monitored: <ul style="list-style-type: none"> • Dust (e.g. by using reused water) • Noise (increase of 7dB above ambient is considered disturbing noise) • Contaminated water (through dewatering operations, etc.) • Waste: waste manifests for waste disposal including waste sent for recycling
Erosion control	Prevent erosion and reduce potential impacts upon the surrounding environment.	Slopes > 1:1 must have additional anti-erosion mechanisms. No evidence of erosion. No evidence of disturbance outside of project area.	Method(s) of erosion control, including erosion of spoil material
Fire, Hazardous and Poisonous Substances	Impose a “no fire” rule on the entire project unless otherwise indicated in writing by the RLM Project Manager. Reduce potential impacts in the event of a fire incident. Manage, mitigate and control the potential occurrence of an incident / accident involving hazardous and poisonous substances.	Zero (0) fires. Proof of annual update and approval of the fire management Method Statement. Proof of management review of fire preparedness and response before onset of the fire season. Storage of hazardous/flammable materials and substances to comply with national, provincial and local regulatory requirements	Handling and storage of hazardous substances Emergency spillage procedures and compounds to be used Fire management plan and emergency procedures in case of fire Use of herbicides, pesticides and other poisonous substances Methods for the disposal of hazardous building materials Material Safety Data Sheets to be included where applicable
Fuels and Fuel Spills	Manage and contain all refuelling activities to prevent and mitigate potential impacts.	All refuelling to occur within designated areas. All hydro carbons to be contained within approved	Methods of refuelling vehicles Details of methods for fuel spills and clean-up operations

Method Statement	Objective	Target	Criteria
		bunded facilities. Identified staff to undergo suitable spill clean-up training.	
Heritage	Limit and mitigate potential heritage impacts on chance findings should they occur.	No damage to heritage structures, unless proof of consultation with a heritage specialist and approval from the SAHRA is in place. Records of chance finds must be kept. Where chance finds are unearthed, proof of work being stopped immediately and proof of consultation with a heritage specialist and the SAHRA must be kept on site.	Measures to be implemented to identify, manage and protect "chance finds" and known items of historical or cultural value.
Noise	Reduce construction related noise affecting the surrounding environment.	Noise levels shall be monitored to ensure they comply with regulatory requirements. Noise generating activities shall not increase by more than 7dB above ambient noise levels. No complaints from I&AP's	Implement measures to reduce noise impacts generated through construction related
Rehabilitation	Rehabilitate impacted areas to a suitable land capability class similar to that of the surrounding environment. Rehabilitation will take existing land uses into consideration. Rehabilitation should start on sections of the route immediately after work is completed.	Reinstatement of areas affected through construction related activities. Proof of monthly removal of alien invasive species re-establishing on cleared areas. The final placement of layers of soil on the wetland bed must match the pre-construction profile. A 50% grass cover shall be achieved within 1 month of the onset of the next growing season following hydro seeding and 80% cover within 2 months thereafter. <ul style="list-style-type: none"> • Minimum of 60% mature vegetation cover being achieved during the first growth season. • Minimum of 80% mature vegetation cover achieved at the end of the maintenance period. 	Rehabilitation of disturbed areas and re-vegetation after completion of construction related activities.

Method Statement	Objective	Target	Criteria
Solid and Liquid Waste Management	Implement measures to reduce, monitor and manage waste generation, whilst maximising recycling efficiency.	<p>Ensure all waste products are disposed of at a registered waste landfill site designed to cater for said waste product.</p> <p>Proof of waste generated, reused, recycled and disposed of, including disposal certificates, must be kept on site.</p> <p>Contain all waste within approved designated areas and stored in marked containers.</p> <p>Containers of hazardous waste and waste oils must be stored in a bunded, covered area.</p> <p>No evidence of contamination by waste.</p> <p>Bins provided at regular intervals.</p> <p>No evidence of litter.</p>	<p>Solid and liquid waste control and removal of waste from site.</p> <p>Methods for the disposal of vegetation, paper and plastics and/or building materials</p> <p>Methods for the recycling of oils etc.</p>
Social	Maximise social benefits and minimise negative social impacts	<p>No complaints from affected landowners</p> <p>No project delays due to landowner interference</p> <p>All landowners signing release forms within 1 month of completion of the contract.</p>	Methods for avoiding danger and causing the least possible inconvenience to the public (including pedestrians), traffic and vehicle traffic
Sources of Materials	Source materials which have been legally mined or manufactured.	Provision of all Material Safety Data Sheets (MSDSs) for all products used on site.	Details of materials imported to the site. MSDSs are to be included.
Topsoil and Subsoil Management	Manage the removal and stockpiling of topsoil and subsoil during the contract for use during rehabilitation.	<p>Soil horizons (stockpile separately). Stockpiles should not be higher than 2 m.</p> <p>Stockpiles will be kept free of alien invasive species.</p> <p>No stockpiles shall be located within the 1:100 flood lines.</p> <p>No stockpiles shall be located outside of areas indicated in the construction servitude diagrams.</p>	<p>Removal of topsoil and subsoil.</p> <p>Storage of topsoil and subsoil, including erosion prevention methods</p>

Method Statement	Objective	Target	Criteria
Traffic	Minimise the impacts and extent of construction related traffic on the surrounding road network and environment, whilst maximising road user safety.	<p>No accidents or incidents.</p> <p>No complaints from the public.</p> <p>Proof of notification of landowner for closure of access roads.</p> <p>Alternative access roads always provided at partial road closures and other traffic disruptions.</p> <p>Compliance with regulatory requirements.</p>	<p>To ensure construction related transport activities do not impact upon landowners and the surrounding environment.</p> <p>Activities associated with the transport of materials and staff are not negatively upon by construction related requirements.</p>
Training	Foster construction related skills transfer, environmental awareness, health and safety awareness, and materials and equipment skills.	<p>Proof of training provided, including training materials that meet the requirements of the RLM Project Manager.</p> <p>Proof of attendance of staff at training.</p> <p>Records of training evaluation results.</p> <p>Results must reflect that training has been effective.</p>	Logistics for the environmental awareness course for all of the Contractor’s employees and temporary labour, as well as for the Contractor’s management staff.
Wash Areas	Ensure plant and equipment used on site is kept clean whilst containing and preventing the release of potential contaminants into the receiving environment.	<p>No contamination of the receiving environment through the washing and cleaning of equipment and plant.</p> <p>Compliance with regulatory requirements.</p>	<p>Location, layout, preparation and operation of all wash areas, including vehicle washing, workshop washing, paint washing and clearing</p> <p>Method for the treatment of wastewater prior to discharge</p>

5.8 COMMUNICATIONS REGISTER

All complaints or communications that are received from I&APs or any other stakeholder must be recorded in a Communications Register. These complaints and communications will be brought to the attention of the RLM Project Manager, whereupon it will be investigated and a response to the Complainant, I&APs or stakeholder will be given within 14 days.

The Communications Register shall include the following information:

- Record the time and date of the complaint/communication;
- A detailed description of the complaint/communication;
- Action and resources used to correct the complaint;
- Photographic evidence of the complaint (where possible);
- A written response to the Complainant indicating rectification of the complaint; and
- Information regarding the relevant authority that was contacted or notified in writing (person, time and date).

The relevant authorities include:

- Department of Environmental Affairs' Environmental Management Inspectorate (e.g. undertaking and ensuring compliance monitoring during construction, operation, rehabilitation and decommissioning);
- Department of Water Affairs (e.g. for any incidents involving the contamination of water resources);
- Department of Agriculture, Forestry and Fisheries (e.g. uses of appropriate herbicides for eradication of alien invasive species, and permits for trees of special concern);
- Department of Health (e.g. for incidents such as contamination of water resources, accidental spill of hazardous substances);
- Department: Public Works, Roads and Transport (e.g. for the diversion of traffic due to construction, operation, rehabilitation and decommissioning activities);
- Department of Labour (e.g. for labour disputes);
- Bojanala Platinum District Municipality (e.g. issues pertaining to the management of RLM)
- RLM Disaster Management Services (e.g. for fire prevention); and
- RLM Environmental Health Department (e.g. for control of nuisances).

5.9 PHOTOGRAPHIC RECORD

The ECO will be required to compile a photographic record of all activities on site prior to construction starting, during the construction process and on completion of the works. This will include photographs for:

- Monthly environmental audit reports;
- Corrective action;
- Progress of environmental works; and

- Non-conformance reports.

5.10 WASTE MANIFESTS

The Contractor shall ensure that all solid (including any hazardous) waste, after the recyclable component has been removed, is removed from site and disposed of at a registered landfill site with capacity to accept the project generated waste. The waste manifest shall be kept on record for auditing purposes.

All recyclable waste shall be recycled.

5.11 GOOD HOUSEKEEPING

The Contractor is to practice good housekeeping throughout the construction, operation, rehabilitation and decommissioning. This should eliminate disputes about responsibility, facilitate efficient and timeous running of the project. Over and above practising accepted methods in accordance with SANS 10120, this should include measures to preserve the environment inside the work area. Records of such actions taken to ensure the maintenance and management of housekeeping must be recorded.

5.12 FINAL ENVIRONMENTAL COMPLIANCE REPORT

A Final Environmental Compliance Report will be compiled by the ECO for submission to the RLM at the end of the construction, operation, rehabilitation and decommissioning phase. The report will include details of:

- the completion of all environmental conditions and mitigation measures listed in the EMPr and the EA;
- NCR's issued;
- any suspension of works;
- all environmental incidents and completed corrective actions;
- the findings of the Environmental Audits;
- conclusions as to whether environmental constraints, guidelines, norms and stipulations have been met and, if not, reasons why they have not been met;
- an indication of the outcomes of the environmental monitoring conducted;
- all monthly environmental reports (as an attachment);
- a copy of all Environmental Method Statements (as an attachment);
- a copy of the Environmental Incident Book (as an attachment); and
- a copy of the Communications Register.

6. MANAGEMENT OF ENVIRONMENTAL REQUIREMENTS

The Contractor shall record and report upon environmental management measures undertaken to mitigate impacts upon the environment.

6.1 MANAGEMENT AND CONTROL

The Contractor is to implement environmental management in a reasonable manner and should such management not prove effective, shall implement measures to the satisfaction of the RLM Project Manager.

Appropriate measures shall include:

- Appointment of necessary resources to monitor and manage environmental requirements.
- Implement aspect specific method statements to deal with emergency situations.
- Provision of adequate emergency response equipment to mitigate and manage an incident or emergency.
- Provision of specific training related to implementation of environmental management requirements.

6.2 RECORDING AND REPORTING

The Contractor shall maintain detailed records of parameters monitored. These detailed records shall demonstrate the effectiveness of the management actions implemented to mitigate potential impacts.

The Contractor shall submit a monthly database/report of management works implemented to the RLM Project Manager, as part of the Contractor's monthly report.

6.3 MONITORING

The Contractor shall submit an Environmental Monitoring Method Statement which details the scope, nature, process, schedule and templates for environmental monitoring.

The monitoring results shall be used to determine the effectiveness of the management programme.

All complaints, compliments or other comments relating to environmental management parameters are to be recorded in the site issues register of the Contractor for inclusion in the project issues register held by the RLM.

Monitoring results and the associated required management and mitigation actions for the coming monitoring period are to be presented in the monitoring section of the Contractors

Monthly Report. The report is to detail observations and information relating to requested management actions and their effectiveness.

The Contractor shall monitor and maintain the following on an ongoing basis:

- Re-growth of alien invasive vegetation
- Validity of the Pest Control Officer certificate
- Fire break requirements around the site clearing operations
- Stormwater systems
- Topsoil and backfill volumes
- Access road condition
- Dust generated from construction, operation, rehabilitation and decommissioning works
- Noise
- Water Quality
- Erosion prevention
- Landscaping requirements for rehabilitation
- Spoil management

All complaints, compliments or other comments relating to construction, operation, rehabilitation and decommissioning are to be recorded in the site issues register of the receiving party for inclusion in the project issues register.

Construction, operation, rehabilitation and decommissioning monitoring results and the associated required management and mitigation actions for the coming monitoring period are to be presented in the monitoring section of the Contractors Monthly Report.

The weekly report and daily reports are to detail observations and information relating to requested management actions and their effectiveness.

7. TRAINING AND INDUCTION OF EMPLOYEES

The RLM Project Manager and Contractor are to take responsibility for the management of staff on the site during the construction, operation, rehabilitation and decommissioning phases and supervise them closely at all times. The onus is on the RLM Project Manager and the Contractor to make sure that all staff and Sub-Contractors fully comprehend the contents of the EMPr. The environmental awareness training programmes should, therefore, be targeted at the two levels of employment: management and labour. Environmental awareness training programmes need to be formulated for these levels and must comprise:

- A record of all names, positions and duties of staff to be trained;
- A framework for the training programmes;

- A summarised version of the training course(s); and
- An agenda for the delivery of the training courses.

Such programmes will set out the training requirements, which need to be conducted prior to any construction works occurring and will include:

- Acceptable behaviour with regard to flora and fauna;
- Management and minimising of waste, including waste separation;
- Maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, lubricants, cement, mortar and other chemicals;
- Responsible handling of chemicals and spills;
- Environmental emergency procedures and incident reporting; and
- General code of conduct towards I&APs.

The ECO may be requested to provide additional training (in a first language) on-site regarding environmental aspects that are unclear to the Contractor's personnel. A translator may be required and requested to assist in this additional training. The cost for the translator will be borne by the Contractor.

8. SUSPENSION OF WORKS

If the Contractor has not complied with one or more of the clauses of the EMPr the ECO may recommend the suspension of works to the RLM Project Manager and the RLM. This may be conducted after having served the Contractor with a NCR and until the Contractor complies with the clauses of the EMPr. All delays resulting from such suspension shall be at the Contractor's expense.

9. RESOURCE ALLOCATIONS

Financial implications for items and activities mentioned in the EMPr must be recognised by the RLM (for the operation and maintenance phases) and the Contractor (for the construction, operation, rehabilitation and decommissioning phases) and provision for these costs must be made. Such costs can include (but may not be limited to) mitigation actions, environmental awareness training, monitoring and auditing requirements and measures for rectification and rehabilitation, management of archaeological / heritage findings unearthed during site construction, operation, rehabilitation and decommissioning works, including any equipment or specialists required for these items.

10. IMPLEMENTATION OF THE EMPR

The EMPr provides an integrated approach to environmental management. This approach is designed to guide the appropriate allocation of human resources, assign responsibilities, develop procedures and ensure project compliance with regulatory and best practice requirements.

10.1 ASPECT AND ACTIVITIES MATRIX

Environmental aspects identified during the site visit, literature review and EIA process, as well as aspects generally associated with construction-related activities have been identified and listed in Section 11.

Construction-related activities could have an impact on one or more of the aspects identified, as indicated by a tick mark in Table 5. The RLM will be required to check which aspects may be affected by which construction-related activity and to put measures in place to mitigate or reduce the impacts on each aspect.

The Contractor will have to monitor, implement and demonstrate to its performance in environmental management and impact mitigation. Thus, aspect-specific performance measures (indicators and targets) have been provided in the implementation tables in Section 11, to which the Contractor must adhere.

Table 5: Aspects / Activities

ACTIVITY	ASPECT	Aesthetics	Dust	Earthworks	Erosion	Fauna and flora	Fire	Hazardous materials	Heritage	Land use	Noise	Rehabilitation	Soil management	Traffic	Training	Waste management	Water management
Access tracks/roads				✓						✓							
Basic environmental awareness training		✓	✓	✓		✓	✓		✓		✓			✓			
Dust management		✓	✓	✓			✓			✓	✓			✓	✓	✓	✓
Emergency response			✓	✓	✓	✓			✓	✓	✓			✓	✓		
Erosion management		✓	✓	✓			✓			✓	✓			✓	✓	✓	✓
Fauna and Flora			✓		✓	✓	✓					✓	✓				
Fire management			✓			✓				✓	✓			✓	✓		
Hazardous substances		✓	✓	✓		✓	✓	✓			✓		✓	✓	✓	✓	✓
Monitoring, auditing and incident reporting			✓	✓			✓	✓	✓	✓	✓			✓	✓		
Noise management		✓	✓	✓	✓	✓						✓			✓	✓	✓
Rehabilitation		✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Social			✓	✓		✓		✓	✓	✓	✓	✓	✓		✓	✓	✓
Storm water management		✓		✓			✓	✓		✓		✓	✓	✓	✓	✓	✓
Traffic management			✓	✓	✓			✓		✓		✓			✓	✓	✓
Waste and effluent management		✓	✓	✓	✓	✓		✓		✓		✓	✓		✓	✓	✓
Water management				✓	✓	✓		✓		✓		✓	✓		✓	✓	✓

11. ENVIRONMENTAL SPECIFICATIONS – CONSTRUCTION ACTIVITIES

11.1 ENVIRONMENTAL SPECIFICATIONS - CONSTRUCTION ACTIVITIES - PLANNING AND DESIGN PHASE

Activity/Issue	Action required	Responsible Party
1. Appointments	Appointment of an independent ECO.	RLM
2. Aspects to be included in the design	<p>Development activities must be included within the design to ensure environmental resources are not unduly impacted upon during construction. An experienced ECO shall review all designs prior to design finalisation.</p> <p>All construction activities are to be completed within the NWDEDECT approved footprint as per the agreed designs. The design of construction-related works associated with the project implementation shall aim to minimise the loss of environmental functioning and integrity.</p> <p>Planning and design shall take cognisance of current and future developments and any such considerations being included within the planning and design of the WDC.</p> <p>Existing services shall not be impacted upon. All buildings, poles, fences or services shall be placed a minimum of 1.5 metres away from all existing services.</p>	RLM
3. Employment creation	<p>Ward councillors and officials from the RLM could assist in determining local sub-contractors and/or labourers that should be considered for possible employment e.g. those sub-contractors residing in the affected areas with the necessary skills, local labourers who are on the Indigent List or who have family members on the local Indigent Lists.</p> <p>The tender documentation should stipulate the use of local labourers or enterprises.</p> <p>The use of local labour should be maximised. Where local skills are not available for the operation and maintenance of the WDC, the RLM should consider capacity building and training to ensure that locals are employable.</p> <p>It is recommended that the RLM should implement a skills audit and develop a skills database.</p> <p>It should be ensured that contractors use local skills, or train semi-skilled people or re-skill appropriate candidates for employment purposes where possible.</p> <p>On-site training should focus on the development of transferable skills (technical, marketing of their own skills and entrepreneurial skills) to ensure long term benefits to the individuals involved.</p>	RLM Project Manager, Contractor, ECO, EO,
4. Inflow of workers	<p>Maximise the use of local labour and contractors where possible by developing a strategy to involve local labour in the construction process</p> <p>The recruitment process and the use of contractors should be clearly communicated to the local communities</p> <p>The communication strategy should ensure that unrealistic employment expectations are not created.</p> <p>A representative of RLM could liaise with the local councillors to either attend key community meetings arranged</p>	RLM Project Manager, Contractor, ECO, EO,

Activity/Issue	Action required	Responsible Party
	<p>within the various wards to discuss the employment and recruitment process; or liaise with the local councillors to ensure that the correct information regarding this issue is portrayed to the communities via the councillors.</p> <p>RLM personnel should preferably not access private properties without prior notification of the property owners.</p> <p>RLM maintenance personnel should be in possession of the required identification documents when undertaking maintenance work.</p> <p>RLM personnel should behave properly at all times.</p> <p>Local labourers should be employed, where possible.</p> <p>Before construction commences, representatives from the RLM and community leaders (e.g. councillors) and community-based organisations, should be informed of the details of the contractors, size of the workforce and construction schedules.</p> <p>Should a large number of temporary workers not form part of the local community members, the contractor should make certain that the “outside” workforce carry identification tags or uniforms to be easily identifiable. It should furthermore be ensured that the inflow of workers and their presence in the high density settlements do not create conflict within these surrounding communities.</p> <p>Local community organisations and policing forums / neighbourhood watches must be informed of the presence of an outside workforce (where relevant).</p>	
<p>5. Tender process</p>	<p>The Final EMPr will be included in the tender documents for contractors.</p> <p>The appointed Contractor should use local labour unless specific skills are required that are not available locally. The Contractor should indicate in the tender bidding process which skills are not available within the area.</p>	<p>RLM</p>

11.2 ENVIRONMENTAL SPECIFICATIONS – CONSTRUCTION ACTIVITIES – PRE–CONSTRUCTION

Activity/Issue	Action required	Responsible Party
1. Defining works procedures	The Contractor shall compile method statements for all activities / tasks to be undertaken during the implementation of the required works.	Contractor
2. <i>Pre-construction survey</i>	<p>The pre-construction survey must be conducted prior to the commencement of the construction works. It must be attended by the Land owner (or designated representative), the ECO and the Contractor. The following must be established, agreed and recorded.</p> <ul style="list-style-type: none"> • communication protocol for future communication between the parties (introduce all parties, roles and functions) • contact details • sensitive receptors immediately adjacent/close to the waste transfer station. • impacted services e.g. telephone, electricity, water supply lines and others, and the protection of these services • fire protection and fighting measures • fencing and gate requirements (any special requirements for special livestock, type of stock proof fencing, no of wire strands, location of gates, opening and closing of gates etc.) • security issues (collection of firewood, access to potable water, toilet facilities etc. will not be allowed on private properties by construction staff) 	Contractor, EO, ECO.
3. <i>Daily living and movement patterns</i>	<p>RLM should keep the construction of access roads to a minimum and rather use the existing infrastructure, as the construction and maintenance of these roads is very costly, impact on the residents’ daily living and movement patterns, and create a potential for erosion.</p> <p>Rehabilitation of new access roads for construction vehicles should be undertaken as soon as the construction process allows.</p> <p>There should be strict adherence to speed limits when using local roads and when travelling through residential areas.</p> <p>Access routes and access points for heavy construction vehicles should be indicated to warn motorists of the movement of these vehicles.</p> <p>Limit the movement of construction vehicles to off-peak periods (where possible).</p> <p>Limit the movement of construction vehicles in areas where sensitive receptors are situated e.g. schools and pedestrians.</p> <p>Construction activities must adhere to all relevant legislation.</p> <p>Construction activities should be limited to normal working hours and should preferably not be undertaken during weekends.</p>	RLM Project Manager, Contractor, EO, ECO

Activity/Issue	Action required	Responsible Party
<p>4. <i>Local economic benefits</i></p>	<p>Local procurement should be aimed at local businesses as far as possible.</p> <p>Local sourcing of materials would assist in providing more economic and employment opportunities for the local people.</p> <p>Local procurement could result in indirect economic spin-offs and benefits such as increased income, and expansion of other local economic sectors.</p> <p>Maximise the use of local labour even if the number of locals that would be employed would be limited.</p> <p>Accommodate, but regulate the activities of vendors in the vicinity of the construction areas and at the construction camps.</p>	<p>Contractor</p>
<p>5. <i>Training and induction of employees</i></p>	<p>The Contractor must ensure that all people involved (including Sub-Contractors, casual labour, etc.) are aware of and familiar with the environmental requirements. The Contractor’s EO is responsible for providing at least one hour of environmental training to each member of the construction staff. If required, further training may be conducted by the ECO.</p> <p>The Contractor’s EO must monitor the performance of the construction staff to ensure that the training and induction have been understood and is being followed.</p> <p>RLM, in conjunction with the contractors, should continue and extend HIV/AIDS awareness and support programmes amongst the contractors and sub-contractors.</p>	<p>Contractor, EO, ECO, SO</p>

11.3 ENVIRONMENTAL SPECIFICATIONS - CONSTRUCTION ACTIVITIES - SITE OFFICE ESTABLISHMENT

Activity/Issue	Action required	Responsible Party
<p>1. Construction site office/yard and site</p>	<p>The Contractor will require a site office / yard for the duration of the contract period. The Contractor’s site office shall be located within the WDC footprint, or on a site appropriately zoned and/or authorised for such use and approved by the ECO. The Contractor shall select a location that has easy access and which has already been cleared or disturbed by previous human activity (e.g. previous construction camps or stockpile areas). All construction activities, materials, equipment and personnel will be restricted to within the area specified.</p> <p>The site office / yard selected will minimise nuisance impacts on neighbours (e.g. visual intrusion, lights at night, noise, dust, movement of people and vehicles, safety and security risks). The perimeter will be clearly demarcated with fences to prevent site creep. The Contractor must fence off its construction camp areas with 1.8 m high diamond mesh fence. All temporary fencing must be removed on completion of the Contract.</p> <p>The camp may be used for the working hours activities of the Contractor’s and the RLM’s personnel and for all related facilities required by the Contractor and the RLM. The Contractor shall take all necessary steps required to comply fully with public legislation and regulation and all specification clauses governing the environment, health, transport, safety and public disturbance impacts. Accommodation of labour at camp sites will not be allowed.</p> <p>Should at any stage of the Contract the RLM and/or the RLM Project Manager be of the opinion that the camp site of the Contractor is causing disturbance or inconvenience to land or lease owners or to nearby residents, then the authority granted by this clause for the Contractor may be withdrawn, either partially or entirely.</p> <p>The Contractor shall at all times conform to all requirements contained in law or bylaws, as well as any other requirements set by the controlling land and local authorities.</p> <p>The Contractor shall water all access roads to the construction camp, as well as working areas used by vehicles inside camps, as required or as may be directed by the RLM Project Manager, to prevent dust being churned up by vehicles or wind.</p> <p>At completion of construction work the Contractor must break and remove all concrete slabs etc. in construction camps and at batching plants (as and where required), remove to approved spoil sites only all rubble from camp sites and depots and hand over the sites in a clean and tidy condition.</p> <p>No Taking-Over-Certificate shall be issued for the Works unless the site cleaning is done to the satisfaction of the RLM Project Manager. Rehabilitation of impacted areas shall be done in accordance with the specifications included in the EMPr.</p> <p>The Contractor shall submit a method statement for the establishment of his camp site, including a drawing with the position, layout and type of facilities.</p>	<p>Contractor, EO, ECO</p>

2.	<u>Accommodation of employees</u>	<p>The Contractor shall make his own arrangements to house his employees and to transport them to site. No accommodation at camp sites will be allowed.</p> <p>No informal housing or squatting will be allowed. All accommodation shall be within appropriately zoned areas within the urban fringe.</p> <p>The standard of the accommodation provided by the Contractor shall be subject to the approval of the RLM Project Manager.</p>	Contractor, EO, ECO
3.	<u>Power supply, water and other services</u>	<p>The Contractor shall make his own arrangements regarding the supply of electrical power, water and all other services. No direct payment will be made for the provision of electricity, water and other services. The cost thereof shall be deemed to be included in the rates and amounts tendered for the various items of work for which these services are required, or in the Contractor's preliminary and general items. The Contractor will not obtain water from third parties without the permission of the RLM Project Manager.</p> <p>The Contractor shall pay all consumption charges, and at his cost provide all connections, consumption meters, pipe work, storage tanks, transformers, cables, transport and other items associated with the supply of water and electricity for the Works. All connections to services of obtained from RLM shall be at points and to standards approved by the RLM Project Manager and the municipality or designated provider.</p>	Contractor, EO, ECO
4.	<u>General</u>	<p>The Contractor will not be permitted to paint / mark or deface natural features in an attempt to demarcate the site. Hazard tape may not be used to demarcate the external boundaries, as this easily breaks, littering the surrounding environment. The Contractor shall be required to use orange day glow netting instead.</p> <p>The site office / yard and construction footprint will be kept clean, neat and tidy at all times, and all construction materials will be stored in a neat and organised manner.</p> <p>Security guards are to be provided for after hours.</p> <p>Residents close to the site office / yard shall be informed of the procedure for lodging complaints with regard to the Contractor's behaviour.</p> <p>Local police services should be kept informed of the planned developments to ensure that they are able to adequately deal with any disruptive behaviour.</p> <p>All natural veld (including the rocky outcrops) outside the WDC footprint shall be marked as no-go areas during the construction.</p> <p>Should construction start at the end of the year and construction activities be stopped for the festive season in December, the construction camp should not be left vacant to avoid security risks and possible unauthorised entry.</p>	Contractor, EO, ECO
5.	<u>Designated vehicle and plant cleaning and maintenance</u>	<p>All vehicles and equipment requiring maintenance and servicing shall be taken off site and must be parked on an impermeable surface. Alternatively, drip trays must be placed below all vehicles / plant. Plastic sheets are not to be used as drip trays.</p>	Contractor, EO, ECO

areas	<p>Maintenance of vehicles may be done at the construction site office / yard. Leaking equipment shall be repaired immediately or removed from the site. Spills from such leaks or breakages (e.g. hydraulic pipe bursts etc.) shall be reported to the RLM Project Manager and treated immediately.</p> <p>Washing of vehicles may not be done at the construction site, and all vehicles requiring washing and servicing must be taken off site to a car wash / service station.</p>
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11.4 ENVIRONMENTAL SPECIFICATIONS - CONSTRUCTION ACTIVITIES - SITE MANAGEMENT

Activity/Issue		Action required	Responsible Party
1.	Aesthetics Management		
	<i>Aesthetics</i>	<p>The Contractor will ensure all components associated with site establishment are designed and positioned to limit the nuisance factor affecting surrounding land owners/users. All walls and roofs of buildings will be painted with a non-reflective matt paint of which the colour will be approved by the RLM Project Manager. Lighting will be of a downward facing spill off type to a maximum height of 3 m and should be so positioned to provide adequate lighting for Health and Safety requirements, without being a nuisance to adjacent neighbours.</p> <p>No natural features may be defaced. Shade-cloth shall be placed on perimeter fencing to reduce visual impact of camp sites. Waste should be removed regularly to the Townsend Landfill site. Daily litter patrols must be conducted and record of these patrols kept. Bins must be provided at intervals agreed with the ECO within the camp and construction areas.</p>	Contractor, EO, ECO.
2.	<i>Visual intrusions</i>	All portable toilets shall be screened from public view with a shade cloth enclosure.	Contractor, EO, ECO.
	Dust Management		
	<i>Air quality</i>	<p>Vehicles and machinery will be maintained in good running condition.</p> <p>Stockpiles (e.g. soil) should be maintained for as short a time as possible and should be enclosed by wind-break enclosures of a similar height to the stockpile. Stockpiles should be situated as far as possible from the construction works for re use in rehabilitation and away from the site boundary, water resources and nearby receptors, and should take the predominant wind direction into account.</p> <p>During the transfer of material to stockpiles, the drop heights should be minimised to control the dispersion of materials.</p> <p>The Contractor will solely be responsible for the management and mitigation of dust generation.</p> <p>The Contractor shall routinely spray all dust-generating surfaces with water, a dust suppressing agent or similar substance to prevent dust generation. Potable and contaminated water will not be used as a dust-suppressing agent and only recycled and/or rain water is to be used, when available.</p>	Contractor, EO, ECO.

3.	Earthworks Management	All vehicles transporting material that can be blown off (e.g. soil and rubble) must be covered with a tarpaulin. Handling of soils is not to be conducted during winds in excess of 35 km/h.	
	<i>Transport, earthmoving and materials handling equipment (TEM)</i>	The Contractor shall ensure compliance with the Occupational Health and Safety Act and the relevant regulations for the operation and maintenance of TEM equipment. The Contractor shall ensure all TEM, vehicles and equipment are maintained in good working condition to maximise efficiency and minimise pollution. Soil / gravel material being transported to site by trucks will be covered to ensure that dust is not blown off the material. The Contractor shall inform all suppliers that all materials are appropriately secured to ensure safe passage to and from site.	Contractor, EO, ECO.
	<i>Excavations and trenches</i>	The Contractor must take all necessary precautions, as per the requirements of the Occupational health and Safety Act, to prevent injuries or fatalities of people or animals occurring when working within excavations and trenches. The Contractor shall ensure all areas are adequately sign-posted and fenced, to prevent unauthorised access to the site. Trenches may not be left open during the builder’s holidays. Safe trench-crossings shall be provided where required.	Contractor, EO, ECO.
4.	Erosion Management		
	<i>Erosion</i>	The Contractor shall be responsible for the prevention of erosion in areas impacted upon by their activities. All erosion repairs must be implemented at the first signs thereof. The Contractor must present the site in an erosion-free state before the issuing of the Performance Certificate.	Contractor, EO, ECO.
5.	Fauna and Flora Management		
	<i>Flora and fauna</i>	The ECO must be informed of all animals found on site in order to ensure proper capture, translocation and release. Trapping, collection, poisoning and/or shooting of any animals by construction personnel is forbidden. The Contractor shall not keep domesticated animals on site and shall take every possible precaution to prevent domesticated animals belonging to I&APs from entering the site. Permits must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF) prior to the removal and pruning of or damage to any nationally protected trees. A comprehensive alien vegetation eradication programme must be implemented, with the removal of all alien vegetation from within the WDC footprint (as legally required). Care must be taken during the alien vegetation removal process to ensure that no unnecessary fires are created	Contractor, EO, ECO.

		<p>through the stacking of biomass.</p> <p>Imported materials must be free of alien vegetation species.</p> <p>Rehabilitation of areas disturbed during project activities (and other rehabilitation or replanting as may be specified) shall be undertaken to reinstate natural flora and prevent the expansion of weeds and invasive alien species. All material brought in must be from a reliable source and free of alien seeds or grass runners.</p> <p>The Contractor shall ensure all areas rehabilitated are kept weed free during the defects notification period.</p>	
	<i>Vermin</i>	<p>The site must be kept clean and tidy at all times to ensure no vermin is attracted to it.</p> <p>The use of pesticides is prohibited unless approved through the submission of an Environmental Method Statement to the RLM Project Manager and the ECO.</p>	Contractor, EO, ECO.
	<i>Environmental Auditing</i>	<p>During construction, activities will be monitored and recorded by the EO and audited against the EMPr by the ECO. Monitoring and incident information will be communicated to the relevant authorities. Any complaints will be recorded and investigated. After construction, the site needs to be inspected and monitored to ensure that the rehabilitation activities have been successful and are maintained.</p>	Contractor, EO, ECO.
	<i>Ecologically sensitive areas</i>	<p>If existing access roads are present, these must be used during construction to minimise the construction of new roads.</p> <p>All areas of natural vegetation, including the rocky outcrops, outside the immediate construction footprints shall be regarded as no-go areas. These areas may not be accessed by people or vehicles.</p> <p>No ancillary activity, such as temporary housing, temporary ablution, storing of equipment or waste disposal may be permitted outside of the WDC footprint.</p>	Contractor, EO, ECO.
6.	<i>Fire and Emergency Management</i>		
	<i>Safety and Security</i>	<p>Construction property and equipment are to be clearly marked with identification tags.</p> <p>Access to the construction site must be restricted and guarded.</p> <p>Construction workers will wear clothing marked with the logo of the construction company and will carry identification cards.</p> <p>The Contractor will maintain a consistent workforce that is familiar with the rules, practices and attitudes towards the misappropriation of property.</p> <p>Personal protective equipment (PPE) and clothing shall be given to workers and the usage thereof shall be enforced to avoid construction-related accidents.</p> <p>The Contractor shall implement measures to ensure the safety of pedestrians crossing the roads used by construction vehicles.</p> <p>Potential hazardous areas must be demarcated and clearly marked.</p> <p>No unauthorised firearms or dangerous weapons are permitted on site.</p>	Contractor, EO, ECO.

<p><i>Health Risks</i></p>	<p>A Health and Safety Officer is to be appointed for the duration of the construction period, and his contact details are to be made available to the adjacent land owners and the ECO.</p> <p>The Contractor shall provide awareness campaigns addressing the risk of the spread of HIV/Aids.</p> <p>Adequate water supply and sanitation-related facilities shall be provided to the workers at the construction sites. This shall typically include 1 toilet to every 15 workers. The toilets shall be located no more than 50 m away from any work front.</p> <p>Emergency response processes should be in place, and communities and adjacent land owners adjacent the site should be notified of the correct procedures for dealing with serious emergencies.</p>	<p>Contractor, H&S Officer</p>
<p><i>Environmental emergency response</i></p>	<p>In the event of actions that may result in significant environmental damage, an environmental emergency response plan must be in place to limit the extent of environmental damage. Procedures and policies will be established to ensure that an incident does not recur.</p> <p>Incidents will be reported immediately to the responsible person. All incidents will be documented in the Environmental Incident Book. The relevant authority will be informed after an incident.</p>	<p>Contractor, EO, ECO.</p>
<p><i>Incident management</i></p>	<p>The Contractor shall identify the types of environmental incidents that are likely to occur on site and ensure measures are put in place to prevent or mitigate the effects of such incidents.</p> <p>The Contractor is required to put in place an effective management system that will prevent or mitigate the occurrence of an incident. The Method Statement for this must be submitted to the RLM Project Manager for approval prior to the commencement of the works. This Method Statement must be reviewed and updated on a six-monthly basis.</p> <p>All the SHE incidents must be reported to the Contractor. The Contractor shall immediately report the incident to the RLM Project Manager and put into place management mechanisms to deal with the incident as quickly as possible.</p> <p>A formal report must be submitted within seven days to the RLM Project Manager, including all remediation measures undertaken to repair any damage caused and to prevent the incident from recurring.</p> <p>Once the incident has been stabilised, and initial notifications have been issued to the relevant parties, a full incident investigation is required complete with detailed corrective and preventive measures. The Contractor is required to provide an incident report to the RLM Project Manager, which, as a minimum, must include the following:</p> <ul style="list-style-type: none"> • Nature of incident. • Damages, injuries or fatalities sustained and the parties involved. • Any risks such incident poses. • Toxicity of the substances involved. • Steps taken to avoid or minimise the effects of the incident and any future incidents. 	<p>Contractor, EO, ECO.</p>

Fire management

- Clean-up procedures, remedial actions and assessment of immediate and long term effects.

The Contractor shall prepare and implement a Fire Management Method Statement to reduce fire-associated risk and thereby maintain a safe working environment and reduce negative impacts on the natural and social environment. This Method Statement shall be cognisant of the requirements as contained within the RLM documents of Table 4. The Contractor shall prepare the Method Statement for approval by the RLM Project Manager within the first month of site establishment. The Method Statement is to include the following as a minimum:

- Measures to reduce the risk of fires starting and spreading.
- Details on how the Contractor is to manage and control fires during construction.
- Fire prevention equipment and where it will be located
- The format and means for recording and reporting on fire mitigation, management and monitoring.

The Contractor will, ultimately, be responsible for fires that break out as a result of his activities during the implementation of the project, as well as the containment thereof. The RLM's liability with regards to fire is transferred to the Contractor for the duration of the Contract. The Contractor shall take reasonable measures to reduce the risk of fires during construction. The Contractor shall limit the risk of fires through a combination of the methods below:

- The Contractor shall assign the position of Fire Officer to one of its staff members who are competent and adequately trained to fulfil the position of Fire Officer. The Fire Officer shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedures to be followed.
- All perimeter boundaries adjoining neighbouring properties must have fire breaks in place. The fire break width maintenance requirements and responsibilities will be determined by the Contractor in conjunction with the land owner. Fire breaks shall be monitored by a Professional Services Provider or by the local Fire Protection Association. The fire management method statement must include but not be limited to the following:
 - A list of the major workplace fire hazards,
 - Proper handling and storage procedures,
 - Potential ignition sources (such as welding and smoking),
 - Control procedures, and
 - Type of fire protection equipment or systems to be used for control.
- The current Fire Danger Index shall be displayed prominently on site at all times.
- All staff shall receive training on fire hazards as a part of the site induction training by the Contractor before commencing work on the site.

Contractor, EO, ECO.

		<ul style="list-style-type: none"> Suitable fire fighting resources must be placed at all fronts. <p>The Contractor shall ensure compliance with the Occupational Health and Safety Act and the relevant regulations regarding fire-fighting equipment.</p> <p>In the event of a fire on site, the Contractor shall mobilise all nearby personnel and do everything possible to extinguish or contain the fire until the RLM Fire Brigade arrives.</p> <p>Proof of construction workers' training on fire hazards and fire fighting is to be kept on file and shown to the ECO on request.</p> <p>Any fires that occur shall be reported upon discovery to the RLM Project Manager and to the relevant authority.</p> <p>No open fires shall be permitted on or off the site or for the preparation of meals within designated eating areas.</p> <p>No on-site burning of waste materials, litter or refuse shall be permitted.</p> <p>Smoking shall not be permitted on site, except in designated smoking areas. Designated smoking areas are not to include those areas where there is a fire hazard. Fire hazard areas include the workshop and fuel storage areas and any areas where the material supports the rapid spread of an initial flame.</p> <p>The Contractor shall be required to monitor the following on an ongoing basis:</p> <ul style="list-style-type: none"> Regular drills, at least twice per year, should be performed to ensure adequate response by all the Contractors' staff. Annual revision of Fire Management Method Statement. 	
7.	Hazardous Substance Management		
	<i>Cement / concrete mixing</i>	<p>The Contractor will submit a Method Statement for the mixing of cementitious and related products, and this must include remedial actions for spillages of cement and concrete, the cleaning of concrete mixers / truck-mounted cement mixers, recycling of cementitious products and management and the disposal of waste / spoil.</p> <p>Used cement bags shall be disposed of in weather-proof bins on site to prevent the generation of windblown cement dust and to prevent the bags from blowing away.</p> <p>During construction, the Contractor(s) must ensure that concrete is mixed in appropriate structures to prevent the contamination of the surrounding environment. All visible remains are to be removed and disposed of as waste and all surplus material is to be removed. Plastic sheets and the bare ground are not to be used for mixing purposes.</p> <p>Inert concrete can be disposed of at a Townsend Landfill Site only after approval has been obtained from the RLM Project Manager. Waste manifests must be obtained by the Contractor for the disposal of inert concrete to a registered waste landfill site.</p> <p>All visible remains of excess concrete shall be physically removed and disposed of on completion of construction.</p> <p>Concrete spoil from foundation pours, shall not be discarded into the surrounding environment.</p>	Contractor, EO, ECO
	<i>Chemical spill control</i>	If a spill of any kind occurs, corrective action will be taken (notification of incident, isolation of contaminated	RLM Project

	<p>material and safe disposal).</p> <p>Spills shall be controlled with the following actions:</p> <ul style="list-style-type: none"> • A Method Statement will be developed for potential hydrocarbon and chemical spill incidents. • Spillage control will be provided by impervious bunding or collecting spills to a sump for disposal or controlling by absorbent material on standby. • Capacity of impervious bund structures should be 110% of the capacity of the largest tank within the bund structure. • Spill containment facilities, such as impermeable or lined bunds (concrete is not impermeable) or drip trays will be provided in oil and chemical storage sites and vehicle maintenance areas. • Material from lined bunded areas will not be buried during rehabilitation. • Re-fuelling and handling of chemicals will occur only in a designated area. • Spill kits will be available on site and staff will be trained in their use. • The spill will immediately be cleaned up and disposed of at a Holfontein hazardous waste landfill site. • All spills and actions will be reported in the site Environmental Incident Book. • Where cement powder has been spilled onto the bare soil, the contaminated soil shall be removed, placed into an appropriate container and disposed of at a registered hazardous landfill site. • Leakages must be repaired on mobile equipment and containment / drip trays must be placed underneath immobile equipment until the leakage has been repaired. The drip tray will have a small spill sock placed in it to capture small spills. • All generators will be permanently placed on drip trays to contain any spillages that may occur. • A spill response team should be brought onto the site to clean the affected area in the event of a spill greater than 100 litres. 	<p>Manager, Contractor, EO and ECO</p>
<p><i>Chemical storage</i></p>	<p>Hazardous materials include diesel, petroleum, oil, cement, bentonite, solvent-based paints, drilling fluids, pesticides, herbicides and LPG.</p> <p>All chemicals will be stored in specifically designed, lockable and lined storage areas where reactive substances are classed and segregated.</p> <p>All hazardous substances must be stored in a lined bunded area and sufficient spill absorbent material must be provided for the type of hazardous substance stored. The chemicals will not be stored within 100 meters of water resources.</p> <p>The chemicals will be labelled according to the chemical hazard rating and, as such, adequate signage must be displayed indicating the appropriate management measures to be implemented in the event of a spill / fire. Material Safety Data Sheets of chemicals used must be kept on file on site at all times.</p> <p>The Contractor must use the least environmentally harmful chemical in undertaking specific duties /</p>	<p>Contractor, EO, ECO</p>

8.	Heritage Management	<p>requirements. Storage of diesel / petrol in excess of 200 litres requires approval from the RLM Fire Chief. The letter approving the storage of 200 litres shall be made available to the ECO upon request.</p>	
	<i>Heritage resources/human remains</i>	<p>The Contractor and workers should be notified that archaeological finds may be exposed during the construction work. Should a find of heritage importance be unearthed, construction activities will stop immediately at the site of discovery. The area will be fenced off with a radius of 20m around the unearthed item, demarcated as a no-go area and access will be prohibited. Should there be a risk of the find being violated, whether intentionally or inadvertently, the Contractor shall be required to appoint a guard to enforce the no-go area policy. The ECO and RLM Project Manager shall be notified immediately. The ECO will contact an archaeologist to undertake further studies and determine the importance of such a find. All related activities will be undertaken by the archaeologist, or under his/her supervision, to ensure no unnecessary damage takes place on the site. During this period, work will not take place in the demarcated area. Work will be continued further along the site at a distance which is clearly well out of the area that may be affected by the findings. Should the findings be clearly limited to a particular area the ECO and RLM Project Manager, in consultation with the archaeologist, will be free to determine what can reasonably be deemed a safe no-work distance, which will be kept clear of activities. Work will only recommence on the written consent of the archaeologist and/or the SAHRA. Finds containing human remains shall immediately be reported by the RLM Project Manager to the South African Police Services (SAPS). All parties concerned shall respect the potentially sensitive and confidential nature of the heritage resource, particularly human remains. Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on site. The Contractor and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or paleontological artefacts, as set out in Section 51(1) of the NHRA. Any extension to the project footprint shall require assessment by a qualified heritage practitioner prior to commencement of works.</p>	Contractor, EO, ECO
9.	Infrastructure Management		
	<i>Storage facilities</i>	<p>The Contractor will provide storage facilities for equipment, plant and materials in such a way as to prevent damage to either the environment or to the stored item.</p>	Contractor, EO, ECO

	<p>Such items stored will be in a damp and weather-proof, well ventilated and bunded facility that is raised sufficiently above ground level to prevent the ingress of storm water.</p> <p>All chemicals, lubricants and fuels will be stored in secondary containment units that are capable of storing 110% of the contents stored. These secondary containment units will be impermeable, fire proof and constructed to approvals as obtained from the RLM Project Manager.</p>	
<p><i>Eating areas</i></p>	<p>The Contractor shall provide staff with suitable eating areas that are weather-proof and away from construction related nuisances e.g. dust and noise. These designated eating areas must be for normal working hours only. The Contractor is to provide refuse bins and lids which are cleaned on a daily basis. The Contractor must ensure staff do not leave food items laying around after breaks. The Contractor shall ensure a dedicated cleaning function at the eating areas after every meal.</p> <p>Fires will not be allowed anywhere in construction and associated project areas.</p>	<p>Contractor, EO, ECO.</p>
<p><i>Lay-down areas</i></p>	<p>The Contractor shall set aside suitably sized areas for the storing of materials. These areas must have a firm substratum and adequate drainage to ensure rapid drying out of the areas. The Contractor shall be responsible for keeping all areas of the site for which he is responsible in a neat, clean, sanitary and orderly condition in accordance with the specifications.</p>	<p>Contractor, EO, ECO.</p>
<p><i>Temporary site closure</i></p>	<p>In the event of temporary site closure (e.g. during pay weekends and annual shutdown period), the Contractor shall check the site, ensure that the following conditions pertain and report on compliance with this clause:</p> <p><u>Fuels / flammables / hazardous materials stores</u></p> <ul style="list-style-type: none"> • Every effort should be made to ensure that fuel stores are as low in volume as practicable. • There are no leaks. • The outlet is secure and locked. • The bund is empty. • Fire extinguishers are serviced and accessible. • The area is secure from accidental damage through vehicle collision and the like. • Emergency and contact numbers are available and displayed. • There is adequate ventilation in enclosed spaces. • There are no stores or containers within the 1:100 year flood line. <p><u>Erosion</u></p> <ul style="list-style-type: none"> • Wind and dust mitigation measures such as brush packs, irrigation are in place. • Excavated and filled slopes and stockpiles are at a stable angle and capable of accommodating normal expected water flows. • There are sufficient detention ponds or channels in place. <p><u>Water contamination and pollution</u></p>	<p>Contractor, EO, ECO.</p>

10.	<i>Sourcing of materials</i>	<ul style="list-style-type: none"> • Hazardous fuel stores are secure. • Cement and materials stores are secure. • Toilets are empty and secured. • Refuse bins are empty and secured. • Bunding is clean and treated with appropriate material that will absorb/ breakdown and where possible be designed to encapsulate minor hydrocarbon spillage. • Drip trays are empty and secure. 	Commercial sources for concrete will be used. Permits received from suppliers must be kept at the construction camp office.	Contractor, EO, ECO
	Land Use			
	<i>I&APs relations</i>	The Contractor shall erect and maintain information boards in the position, quantity, design and dimensions specified by the RLM Project Manager. Such boards shall include general information of the activity and contact details for complaints by I&APs in accordance with details provided by the RLM Project Manager.		Contractor, ECO.
	<i>Landowner interactions</i>	<p>All interactions with Landowners/Residents must be recorded in a Communications Register, which shall be made available to the RLM Project Manager on a monthly basis. The Contractor shall respect the property and rights of landowners and communities at all times and shall treat all such persons with courtesy.</p> <p>The Contractor shall ensure disruptions to Land owners/Residents and I&APs affected shall be minimised.</p> <p>The Contractor shall ensure private property adjoining the site is not damaged due to construction related activities. Access to and from private property shall also not be affected by construction related activities. The Contractor shall absolve the RLM Project Manager of any and all risk and liability in this regard.</p> <p>The Fencing Act (Act 63 of 1963) regulates activities associated with fencing and gates. Therefore, in terms of this Act, it is critical for the Contractor and the land owner to agree on fences and gates that need dismantling/erection.</p> <p>Where existing fences have to be dismantled and re-erected, they shall be erected to the same design as the original and to the satisfaction of the landowner, but with such modifications as may be required by the RLM Project Manager.</p> <p>All incidents occurring during the completion of the Contractors duties shall be reported to the RLM Project Manager in writing, by the Contractor. The RLM Project Manager will then assess the incident, concern or claim with the assistance of the ECO and determine the compensation/corrective action required by the Contractor.</p> <p>The Contractor will take all actions required to ensure no re-occurrence of the incident/claim or concern occurs again.</p> <p>The Contractor shall adhere to the timeframes for dealing with Land owner/I&AP concerns below:</p>		Contractor, ECO.

		<ul style="list-style-type: none"> Record concern in the Communications Register and verbally notify the ECO – immediate. Respond to the concern – within 1 day of concern being raised. Rectify/mitigate concern – within 3 days of concern being raised. Respond in writing on “close out” of concern – within 5 days of concern being raised. Submit to the RLM Project Manager a detailed report – within 7 days of concern being raised. 		
	<i>Communications Register</i>	All complaints received will be investigated and a response given to the complainant within 10 days. Complaints and positive feedback received from I&APs must be recorded in the Communications Register. The complaint will be brought to the attention of the RLM Project Manager, who will respond accordingly.	RLM Project Manager, Contractor, EO, ECO	
	<i>Safety and security</i>	<p>The movement of construction vehicles through the local communities should be limited to off-peak periods (if possible) to minimise adverse impacts on the movement of pedestrians (schoolchildren and individuals walking to and from work) and to a lesser extent on private vehicular traffic.</p> <p>Signs must be erected at strategic locations throughout the area, warning residents and visitors about the hazards around the construction site and the presence of heavy vehicles.</p> <p>Employing local community members could minimise the potential for criminal activity or perceived perception of an increase in criminal activity due to the presence of an outside workforce.</p> <p>Screening of workers that apply for work could be useful to lessen perceived negative perceptions about the outside workforce.</p>	RLM Project Manager, Contractor, EO, ECO	
11.	Noise Management			
	<i>Noise</i>	<p>Noise sources include construction machinery, power tools and compressors, vehicle movements, general construction activity and drilling. To limit noise levels, the following actions will be taken:</p> <p>Vehicles and machinery will be kept in good working order and equipped with silencers.</p> <p>Noisy activities will only be undertaken only during normal working hours: 07h00 to 18h00 on weekdays, Saturdays from 07h00 to 13h00 and no work on Sundays or public holidays. Work may not be conducted outside this period without the written authorisation of the RLM Project Manager (if this not a condition of the environmental authorisation).</p> <p>The speed of delivery and construction vehicles in construction areas will be limited to 25km/h.</p> <p>Any complaints will be investigated and corrective action implemented and documented.</p>	Contractor, EO, ECO.	
12.	Rehabilitation Plan			
	<i>Rehabilitation</i>	See Environmental Specifications - Rehabilitation Activities (10.2.5)		
13.	Social			

	<i>Inflow of workers</i>	<p>Maximise the use of local labour and contractors where possible by developing a strategy to involve local labour in the construction process</p> <p>The recruitment process and the use of contractors should be clearly communicated to the local communities</p> <p>The communication strategy should ensure that unrealistic employment expectations are not created.</p> <p>A representative of RLM could liaise with the local councillors to either attend key community meetings arranged within the various wards to discuss the employment and recruitment process; or liaise with the local councillors to ensure that the correct information regarding this issue is portrayed to the communities via the councillors.</p> <p>The Contractor’s personnel should preferably not access private properties without prior notification of the property owners.</p> <p>The Contractor’s maintenance personnel should be in possession of the required identification documents when undertaking maintenance work.</p> <p>The Contractor’s personnel should behave properly at all times.</p> <p>Local labourers should be employed, where possible.</p> <p>Before construction commences, representatives from the RLM and community leaders (e.g. councillors) and community-based organisations, should be informed of the details of the contractors, size of the workforce and construction schedules.</p> <p>Should a large number of temporary workers not form part of the local community members, the Contractor should make certain that the “outside” workforce carry identification tags or uniforms to be easily identifiable. It should furthermore be ensured that the inflow of workers and their presence in the high density settlements do not create conflict within these surrounding communities.</p> <p>Local community organisations and policing forums / neighbourhood watches must be informed of the presence of an outside workforce (where relevant).</p>	<p>RLM Project Manager, Contractor, EO, ECO</p>
14.	Soil Management		
	<i>Soil management</i>	<p>Compaction by vehicles or poor storage methodology or careless handling of topsoil can cause erosion or contamination.</p> <p>The objective is to prevent compaction and the loss of soil structure, the following soil handling techniques shall be employed:</p> <p>Soil stockpiles should not be higher than 1m with slopes of 1m vertical to 2.5m horizontal</p> <p>Soil will not be handled during windy conditions (else it will be dampened to reduce dust production)</p> <p>All stripped soil will be stockpiled for use in rehabilitation</p> <p>The soil will be stockpiled:</p> <ul style="list-style-type: none"> • at a sheltered site protected from wind erosion; • outside the working area where it will not be compacted by traffic; 	<p>Contractor, EO, ECO</p>

15.	Traffic Management	<ul style="list-style-type: none"> away from any watercourses so there is no risk of wash-away; and to promote runoff, soil stockpiles will be rounded off (convex) at the top. <p>Repeated handling of soil will be avoided. Overburden must be removed and stockpiled separately from topsoil stockpiles. Overburden stockpiles may not be permitted to overflow and contaminate topsoil stockpiles. All polluted soils shall be replaced by the Contractor(s) at his own cost.</p>	
	<i>Traffic management</i>	<p>The Contractor shall provide safe points for pedestrian and vehicular crossing at designated points. These points will be “stop-and-go” systems manned by flag persons. Orange safety fencing / netting must be utilised by the Contractor to keep pedestrians away from the construction work area. Danger tape must not be used, as this breaks easily and could litter the surrounding environment. Appropriate notification signs shall be erected by the Contractor at entrances to the construction site to warn visitors and pedestrians about the hazards around the construction site and the presence of heavy vehicles, where appropriate. Construction vehicles are to keep to the speed limits (25km/h on the construction site).</p>	Contractor, EO, ECO.
	<i>Access</i>	<p>Residents shall be allowed access to their properties at all times. In cases where property owners have no vehicular access to their properties, safe parking shall be arranged. All access roads for construction vehicles shall be properly rehabilitated. Advertising boards displaying road safety messages focused on pedestrians shall be erected. Proactive warning signs shall be erected in the case of traffic disruption or diversion and along access roads.</p>	Contractor, EO, ECO.
16.	Training Programmes		
	<i>Construction personnel information posters</i>	<p>The Contractor shall erect and maintain information posters for the information of his employees depicting actions to be taken to ensure compliance with aspects of the EMPr. Such posters shall be erected at the site access area, eating areas, and any other locations specified by the RLM Project Manager.</p>	Contractor, EO, ECO.
17.	Waste Management		
	<i>Waste management</i>	<p>A waste sorting facility will be established at the construction site office / yard. Solid waste will be separated into recyclable and non-recyclable waste. Timber, metal, oil, paper, bricks, tyres, batteries and any other major recyclable wastes will be stored in safe, secure areas prior to disposal. Proof of disposal must be kept on file and presented to the ECO on request. General non-recyclable refuse will be collected in appropriate bins with secure lids to be disposed of at a registered Landfill Site or at the nearest transfer station with capacity to accept the waste generated by the</p>	Contractor, EO, ECO

<p>18. Water Management</p>	<p>project. Proof of disposal must be kept on file and presented to the ECO on request. The Contractor will provide weather- and vermin-proof bins, which shall be cleaned on a daily basis. The Contractor must ensure that staff do not leave food lying around after breaks. A separate oil container will be used to ensure that oil wastes are contained. All chemical drums will be transported to a designated and lined bunded area when full, empty or when the contents of the drum are unusable or unknown. All drums will be appropriately disposed of at a registered hazardous waste landfill site. Proof of disposal must be kept on file and presented to the ECO on request. No burning, burying or dumping of any solid waste materials will be permitted on site. The Contractor will supply temporary ablution facilities (e.g. non-chemical or composting toilets) of an acceptable standard, with a minimum of one facility per 15 workers. The use of the surrounding areas for ablutions is strictly prohibited. The temporary ablution facilities will be monitored on a regular basis to ensure that the toilets are cleaned and emptied on a regular basis. The temporary ablution facilities will be secured to the ground to prevent them from being blown over in high winds. Ablution facilities should be placed within 50m of work areas.</p>	
<p><i>Surface and groundwater</i></p>	<p>Storm water runoff must be prevented from coming into contact with waste or contaminants on the site. Discharge of effluents or polluted water into the water resources shall not be allowed. All TEM shall be refuelled and washed off-site. Water emanating from the mixing of cementitious products must be contained and prevented from entering the environment. The Contractor shall prevent the discharge of any pollutants, such as bentonite, cements, concrete, lime, chemicals and fuels into any water resource. Water released by the Contractor into the environment must comply with the attached DWA water standards (Refer to Annexure B).</p>	<p>Contractor, EO, ECO</p>
<p><i>Natural Drainage</i></p>	<p>The Contractor shall ensure all works undertaken do not negatively impact upon drainage lines, either natural or man-made. Should the Contractor be required undertake works and impact upon a drainage line, the ECO shall be notified and the requirement discussed with the affected landowner. The Contractor shall be required to make good on all damage upon completion of construction related works.</p>	<p>Contractor</p>
<p><i>Health and safety</i></p>	<p>Adequate water supply and sanitation related facilities should be provided to the workers at the construction sites.</p>	<p>Contractor</p>

11.5 ENVIRONMENTAL SPECIFICATIONS - REHABILITATION ACTIVITIES

Activity /Issue	Action required	Responsible Party
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Activity /Issue	Action required	Responsible Party
<p>1. Rehabilitation</p>	<p>The Contractor shall utilise the EMP as the basis against which all rehabilitation works shall comply.</p> <p>Disturbed areas that are no longer in use will be rehabilitated. If areas had topsoil removed and stockpiled prior to use, the surface will be ripped and the topsoil will be replaced. All soils and topsoil material must be bought from a reliable source, and must be free of alien seeds or grass runners.</p> <p>Fences, barriers and demarcations associated with the various construction phases and activities must be removed (unless the RLM Project Manager has stipulated otherwise).</p> <p>The site will be cleared of all litter.</p> <p>The Contractor must repair any damage that the construction works have caused to neighbouring properties.</p> <p>All remaining construction materials must be removed from the site.</p> <p>A meeting must be held on site between the RLM Project Manager or representative, the ECO and the Contractor to approve all rehabilitation activities and to ensure that the site has been restored to a condition that is acceptable and approved by the RLM Project Manager.</p> <p>Rehabilitation will be conducted in a progressive manner (i.e. once construction in an area has been completed the area will be rehabilitated). The rehabilitation of the area with indigenous vegetation must coincide with the rainfall events and all alien invasive vegetation shall be removed.</p>	<p>Contractor, ECO, EO</p>
<p>2. Monitoring</p>	<p>After construction, the site needs to be inspected by the ECO to ensure that the rehabilitation activities have been successful and to monitor alien vegetation re-growth. The ECO will report the condition of rehabilitation to the RLM.</p> <p>The RLM is responsible for clearing alien vegetation within the rehabilitated areas.</p>	<p>ECO, RLM</p>

12. ENVIRONMENTAL SPECIFICATIONS – OPERATIONAL ACTIVITIES

The Operational Management Plan (OMP) provides guidelines for the efficient management and operation of the procedures associated with end-use plan approval and site closure.

ISSUE TO ADDRESS	DESCRIPTION	RESPONSIBLE PERSON
1. Operating Hours	The operating hours should be visible at the access point. A board indicating the hours and accepted waste must be visible to all people wanting to access the site.	RLM Waste Department / Infrastructure
	The contact details for the person responsible for the Drop-off Centre must be clearly visible from the outside, in the event of there being a need to obtain access in the event of an emergency after hours.	RLM Waste Department / Infrastructure
2. Access Control And Security	The section of the fence adjacent to the road must be repaired and a lockable gate be installed.	RLM Waste Department / Infrastructure

	<p>Indemnity signage must be clearly displayed in at least 2 official languages at the site entrance.</p> <p>Warning signage should be displayed in all areas where there is a particular risk.</p> <p>Access restriction signage is to be provided in all areas where public site users are not allowed.</p> <p>All demarcated areas are to be clearly marked, and appropriate signage provided.</p>	RLM Waste Department / Infrastructure
	A security system is to be implemented with guards on duty 24 hours a day.	RLM Safety Public
	The duties of the security guards must be extended to provide assistance on operational matters, e.g. for the monitoring of incoming loads to verify that no unauthorised waste enters the site.	RLM Safety Public
	<p>Although the security guards patrolling the site may be unarmed, it is important for them to have access to an armed response unit that will be able to provide the required support at short notice. The telephone number of the Rustenburg SAPS must be provided to all security guards in case additional support is ever needed; if possible, they should be given the mobile number of the relevant sector vehicle(s).</p> <p>Appropriate communication systems are to be provided that will enable the guard on site to call on these backup resources.</p>	RLM Safety Public
	<p>Emergency procedures are to be developed.</p> <p>The emergency plan must be communicated to all personnel, with refresher courses being provided at 3 month intervals.</p> <p>Security guards should not only be trained in the protection of the waste drop-off centre, but must also be trained in first aid as well as fire-fighting techniques to deal with situations when they may be the only people on site when a fire is detected.</p>	RLM Safety Public
3. Types of Refuse Accepted	<p>The following items are accepted:</p> <ul style="list-style-type: none"> domestic waste 	Safety Guard / Access controller

	<ul style="list-style-type: none"> • scrap metals • clean recyclable wood, • leaf and yard debris (brush); • tyres • mattresses/box springs, • recycled paper, • mixed recyclables, and • car batteries. • Any other unacceptable materials loaded - vehicles are to be denied access. 	
<p>4. Operating Capacities</p>	<p>There must at all times be at least 6 skips placed at receiving face. The different types of waste must be placed into individual skips.</p>	<p>Operators / Site Manager</p>
	<p>The skips must be removed as soon as full or when the operation closes for the day and taken to the landfill site. No waste is to be stored overnight on site.</p>	<p>Operators</p>
	<p>The skips containing recyclables must be removed when full by representatives of the recycling industry</p>	<p>Site Manager</p>
	<p>No informal pickers are allowed on site.</p>	
<p>5. Personnel And Duties</p>	<p>An organogram that clearly describes the staff reporting structure should be developed and made available on site.</p> <p>Staff members should have job descriptions that clearly describe the roles and responsibilities of all workers. Where staff could be required to occasionally perform tasks outside of their job descriptions, this is to be indicated upfront to avoid any misunderstandings. The job description is to be signed by the Employer and the Employees, with a copy made available to the Employees.</p>	<p>RLM Waste Department</p>

	<p>Operator training should be developed to meet the skills level required for the particular job descriptions.</p> <p>Training is to be provided on all job levels to ensure permanent and contract worker's commitment and loyalty to the work.</p> <p>Training should not be combined for different job levels, thereby avoiding a situation where more highly-skilled staff become frustrated whilst lower-skilled staff may have difficulty with comprehension.</p>	RLM Waste Department
	<p>A daily diary should be kept to record all incidents and accidents that may occur during the operation of the transfer station. The following information must be recorded:</p> <ul style="list-style-type: none"> • Person reporting the incident, time and date of the incident; • Description of the incident; • Consequences of the incident (injuries, damage, etc.) • Manager to whom the incident was reported, time and date; • Remedial measures taken to rectify the situation; • Preventative measures implemented to avoid a reoccurrence. 	Site Manager
	<p>A communications register must be kept to record all compliments and complaints received during the operation of the WDC. The following information must be recorded:</p> <ul style="list-style-type: none"> • Name of person lodging the complaint, with contact details; • Time and date of the problem; • Description and cause of the problem; • Consequences of the problem (odours, litter, etc.) • Site supervisor with whom complaint was lodged, time and date of the complaint; • Manager to whom the complaint was reported, time and date; • Corrective measures taken to rectify the situation; • Preventative measures implemented to avoid a recurrence 	Site Manager
6. Personal Protective Equipment (PPE)	<p>All staff are to be provided with the necessary Personal Protective Equipment (PPE) that may be required for the particular work undertaken. Employees are to sign to confirm receipt of the PPE.</p>	RLM Waste Department

		<p>Training in the appropriate use of the PPE is to be provided to all Employees, who are to confirm in writing that they understand the need for and way in which the PPE is to be used.</p> <p>Clear directives are to be provided to Employees in terms of the cleaning and maintenance of PPE.</p>	RLM Waste Department
		<p>In addition to PPE being issued at commencement of duties by an Employees, a programme is also to be put in place according to which PPE is to be replaced on a routine basis that will allow for normal wear and tear. PPE stolen or vandalised is to be replaced at the Employee's expense.</p>	RLM Waste Department
		<p>Compliance in the use of PPE is to be monitored by the site manager and written warnings are to be issued in all instances where the required PPE is not used.</p> <p>After three written warnings, disciplinary action is to be taken against Employees not using their PPE in the required manner, provided that this requirement is stipulated in the employees' employment contracts under the disciplinary procedures section.</p>	Site Manager
7.	Dust Control Program	<p>The areas where traffic is driving on un-surfaced roads; the area is to be lightly sprayed with water to suppress dust.</p>	Operators
8.	Litter Control Program	<p>The site must be swept, and litter picking must be undertaken on the premises as well as in the immediately adjacent areas on a daily basis, at start of operations and at close of operations for the day.</p> <p>It is anticipated that on occasions waste be dumped illegally outside the site during the night. This may include rubble and other bulky material. This needs to be collected by 10:00 every day.</p>	Operators
		<p>All material that is off-loaded and has landed adjacent to the skips is to be removed 3 times daily and placed in the appropriate skips.</p>	Operators
9.	Substitute Disposal and / or Transfer Arrangements	<p>For any unacceptable materials loaded - vehicles are to be denied access. The vehicles are to be directed to the Townlands Landfill site until the Waterval Landfill becomes operational. Details of loads and vehicle are to</p>	Safety guards

	be recorded.		
	<p>The contractors appointed should transport all waste collected at the facility to the Townlands landfill site. The municipality should maintain a small fleet of vehicles that can be used to transport the general waste in an emergency.</p> <p>There should also be a backup loader available to the WDC, in the event that the primary loader suffers mechanical failure.</p>	RLM Department	Waste
10. Provision for Limited Access	The section of the fence adjacent to the road must be repaired and a lockable gate be installed.	RLM Department / Infrastructure	Waste /
11. Structures and systems to reduce illegal dumping	<p>Bollards are to be placed along the pavement on Kremetart Road, a nearby site where a lot of illegal dumping occurs, from the garden waste site up to a point 200m in either direction. These bollards will prevent vehicles from entering the veld at night to dispose of waste illegally.</p> <p>These bollards will be retained post closure and will be extended to include the area where the current GWS is located.</p> <p>Security guards are to note registration details, time and date, nature of waste and identity of any third party illegally dumping waste adjacent to the garden waste site</p> <p>The local community is to be given a contact list document which details the following:</p> <ul style="list-style-type: none"> • On-site Operator's name and number • On-site Security name and number • SAPS hotline number and contact person • Waste management department contact and number • SMS Number of reporting of incidents. <p>A sms/mms number must be created to report and send photographs of illegal dumping at the garden waste site. Members of the community are to be provided with a set of instructions on how to record a</p>	RLM Department / Infrastructure / Security	Waste /

	<p>photograph or video of criminals and how this should be forwarded to the Security Department of the RLM.</p> <p>A website containing this information and vehicles that have been identified by the Security Department on their watch list will be included.</p>	
12. Aesthetic Considerations	The current infrastructure needs to be upgraded to a minimum specification to function properly. This includes the fence, access road and loading area.	RLM Waste Department / Infrastructure
13. Methods of Solid Waste Leachate Containment	A small berm is to be constructed to contain the leachate around the drop-off zone. This is to be cleared as soon as any leachate collects in the sump area.	RLM Waste Department / Infrastructure
14. Vector Control Program	<p>If the measures of the composting and WDC operation are insufficient to prevent the breeding of flies, flytraps are to be provided in all areas that flies may be attracted to or where there is a likelihood that flies may be breeding.</p> <p>Similar to flies, the first objective in preventing rodents is by preventing the ongoing presence of food waste that may attract and result in the breeding of rodents.</p> <p>Should the aforesaid not be successful to prevent the breeding of rodents, it is recommended that traps be set to kill the rodents, rather than to place poison which could ultimately result in some bird species being poisoned when they prey on poisoned rodents.</p>	Operators
15. Fire Control And Prevention Provisions	<p>No fires are permitted on site.</p> <p>An Emergency Plan which includes fire prevention, control and mitigation is to be setup.</p> <p>This plan must, describe the measures to prevent fires, the equipment available (on site and readily available off-site) to control and extinguish fires, the measures to mitigate the impacts of any fire to public health and safety and the environment, the arrangements made with the fire department, control and suppression and the ability of the local municipal fire department to suppress fires at the site, expertise and equipment, the availability of water, and access to the site.</p> <p>This plan is to be implemented with the fire department to ensure it will be implemented.</p>	RLM Waste / Fire Department

16. On Site Traffic Patterns	Traffic is to be directed to the relevant skip / bin for drop-off. The public should be shown exactly where to drive and where to discharge the material. No access should be allowed to public vehicles or persons to any other area other than where permitted.	Operators Security /
17. Special and Hazardous Waste Handling Procedures	<p>A container is to be provided for Hazardous materials. These materials are to be collected and transported in the same leak-proof container used. The container and transport must be compliant with the relevant legislation for containerisation of hazardous goods.</p> <p>Hazardous materials include:</p> <ul style="list-style-type: none"> • car batteries. • Alkaline batteries; • E-waste • Fluorescent tubes • Used oil (in leak proof containers) • Paint (in leak proof containers) 	RLM Waste Department
18. General Security Considerations	<p>The security system implemented on site should meet with the following objectives:</p> <ul style="list-style-type: none"> • Protection of workers and users from physical attack / theft of their property while on site. • Prevention of access to the site except for legitimate purposes, i.e. prevention of unauthorised salvaging / theft / loitering. • Protection of private and public property from vandalism / theft. A system whereby guards would be required to report on all incidents during their shift should be in place, with effective follow-up of all incidents. <p>A monitoring system must be introduced to ensure the efficiency of the guards at all times.</p>	RLM Waste Department
19. Strike Action	The site must have the necessary programme in place to deal with situations when security staff is on strike, particularly where such employees form part of the	RLM Waste Department

	<p>facility's own staff.</p> <p>Where security services are outsourced, the alternative arrangements to be made in the event of strike action must form part of the contract conditions for outsourcing of security services.</p>	
<p>20. Education and awareness</p>	<p>An education programme for the community at large must be prepared that addresses the following:</p> <ul style="list-style-type: none"> • Increase access to information on how to dispose in the correct manner, make them understand what the benefits are for doing the right thing • Define the nature and behaviour and literacy of the target group or community. • List proper and legal dumping sites with an explanation of what types of waste must go where • Make the public aware of impacts of illegal dumping e.g. water pollution, air quality, health, property depreciation. • Quantify the costs of cleaning up and the resulting impacts on service fees. • Educate people about recycling and reusing of waste material. 	<p>RLM Waste Department / Infrastructure / Security</p>
<p>21. Community involvement and participation</p>	<p>The RLM will co-ordinate the following:</p> <ul style="list-style-type: none"> • Organize events for collecting and properly disposing of dumped waste. This also increase awareness amongst community members • Get the local businesses involved in the process e.g printing companies can assist with print outs of information on illegal waste dumping. Get other companies to also put up signs that show what will happened to people to are involved in illegal dumping 	<p>RLM Waste Department / Infrastructure / Security / Community</p>

	<ul style="list-style-type: none"> Start outreach campaigns for communities that lack skills and access to the information available. 	
<p>22. Monitoring and auditing of illegal dumping</p>	<p>Ensure that enough surveillance is implemented especially in hot spot areas, by way of cameras, community watch dogs and field operators</p> <p>Training of staff to adequately do monitoring in hot spot areas.</p> <p>Establish baseline data for monitoring (includes how much waste and types of waste) for the hot spot areas.</p> <p>Continuous monitoring is needed.</p> <p>Adherence to waste by-laws.</p>	<p>RLM Waste Department / Security</p>
<p>23. Law Enforcement</p>	<p>The law is to be enforced in the following manner:</p> <ul style="list-style-type: none"> Implement and use penalties and fines. Make sure the communities are aware of the penalties. The municipality can impose penalties including <ul style="list-style-type: none"> Fines Imprisonment Vehicle impoundment Cost recovery for site cleanup or security Rights to assets Community service 	<p>RLM Waste Department / Security</p>

13. ENVIRONMENTAL SPECIFICATIONS – DECOMMISSIONING

The decommissioning activities will be identified based on Best Practice and adherence to relevant legislation at the time of closure. The appropriate authorisations will be applied for at that time.

14. REFERENCES

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ANNEXURE A:
Locality Diagram

**ANNEXURE B:
MAIN ACTIONS REQUIRED BY THE CONTRACTOR FOR
COMPLIANCE WITH THE EMP**

Main Actions Required by the Contractor for Compliance with the EMPr

1 PRIOR TO COMMENCEMENT

1.1 Method Statements

The Contractor shall submit project and task specific method statements to the RLM Project Manager within 14 days of receipt of the Letter of Acceptance.

Activities shall only be allowed to commence once the method statements have been approved by the RLM Project Manager.

1.2 Environmental Awareness Training preparation

The Contractor shall be required to present the Environmental Awareness Training to all personnel within 7 days of the project commencing. The Contractor shall manage and implement all the requirements associated with the presenting the training programme with the RLM Project Manager before the Commencement Date.

2 TWO WEEKS AFTER COMMENCEMENT

2.1 Demarcation of the Site

The Contractor shall be required to establish a site office within the project footprint or alternatively at a locality appropriately zoned and/or authorised for such use and approved by the ECO. The Contractor shall be required to erect and maintain a temporary fence along the boundary perimeter and at all sites identified as “no-go” areas, to the satisfaction of the RLM Project Manager.

The Contractor shall select a location that has easy access and which has already been cleared or disturbed by previous human activity (e.g. previous construction camps or stockpile areas). All construction activities, materials, equipment and personnel will be restricted to within the area specified.

2.2 Environmental Awareness Course

The Contractor shall ensure all staff attend the environmental awareness training to be held in or before the first week after the commencement date.

Follow-on from the Environmental Awareness Course

The contractor shall be responsible for presenting follow up training on a six monthly basis.

During construction, if new personnel come onto site, the Contractor shall be responsible for providing awareness training and thus ensure these personnel are aware of the environmental specifications on site.

2.3 Method statement awareness

Where applicable, the Contractor shall provide task-specific training on an *ad hoc* basis when workers are engaged in activities, which require method statements.

2.4 Emergency preparedness

The Contractor shall ensure all measures required to prevent, mitigate, manage and control an emergency situation are implemented. This activity shall require regular review during construction.

3 DURING CONSTRUCTION

3.1 Contractor Familiarisation Of The EMPr

The Contractor shall ensure a copy of the EMPr and its relevant Project Specification clauses are available on Site, and shall ensure that all the personnel associated with the project (including sub-contractors and suppliers), are familiar with and understand the specifications contained in the EMPr.

3.2 Method Statements

All other task specific method statements required during the course of construction, shall be submitted to the RLMPProject Manager for approval 14 days prior to the proposed commencement of the activity.

3.3 Site Security

The Contractor shall, where applicable, ensure that measures are implemented to secure the site during all nonworking hours, including public holidays.

3.4 Materials Handling, Use and Storage

The Contractor shall ensure all materials delivered, handled, used or stored are done in compliance with the requirements of the EMPr. Additionally, the Contractor shall ensure all measures are in place to manage, mitigate and control an emergency situation should one arise.

The Contractor shall ensure all staff are adequately trained in all elements pertaining to such materials.

4 AFTER CONSTRUCTION-RELATED ACTIVITIES ARE COMPLETE

4.1 Site Cleanup

Within 7 days of the completion of construction related activities, the Contractor shall commence with the clearing and cleaning of the site, ensuring everything not forming part of the permanent works is removed from site.

4.2 Re-vegetation and Rehabilitation

The Contractor shall be responsible for rehabilitating and re-vegetating all areas impacted upon by construction related activities to the satisfaction of the RLMPProject Manager, as required within the rehabilitation specification. The commencement of these activities will be agreed to with the RLMPProject Manager prior to their commencement.

**ANNEXURE C:
HOW TO WRITE A METHOD STATEMENT**

1 METHOD STATEMENTS

The Contractor shall be required to undertake various tasks / activities in order to fulfil the conditions as stipulated in the contract. Therefore, in order for the RLM Project Manager to be satisfied that the Contractor has a comprehensive understanding of the requirements of the task / activity, the Contractor shall submit method statements to the RLM Project Manager for approval prior to the commencement of the task / activity.

The method statement is a dynamic document integrating all facets of the task / activity, thereby ensuring the reader a comprehensive understanding of the actions associated with implementing the task / activity.

The method statement shall be submitted to the RLM Project Manager for approval a minimum of 14 days prior to the commencement of the task / activity. During this period, the RLM Project Manager shall consult with other members of the project management team to ascertain the Contractors knowledge and understanding of the requirements. Should the RLM Project Manager ascertain there to be gaps within the Contractors understanding, the method statement shall be returned to the Contractor for review and re-submission.

Upon approval of the method statement, both the RLM Project Manager and the Contractor shall sign the method statement denoting mutual agreement that the contents thereof meets the minimum requirements to successfully complete the task / activity. By signing the method statement, the Contractor commits to working in accordance the agreed method.

Due to the method statement being a dynamic document, regular amendments may be required to ensure the implementation thereof corresponds with how the task / activity is actually being implemented; and in accordance to potentially changing requirements.

1.1 Purpose

The purpose of the method statement is to:

- *Outline the safe manner in which the task / activity is to be undertaken*
- *Provide induction material for all undertaking the task / activity to understand*
- *Meet legal requirements – hazard identification and control*
- *Provide a programme against work, material, time, staff and anticipated problems are to be managed*
- *Act as a tool in quality assurance*

1.2 Scope

A method statement describes the scope of the intended task / activity in an easy to understand step – by – step manner. This is particularly important to reduce potential confusion and ambiguity of the contents by those personnel required to implement it.

The method statement should clearly indicate:

- *What – a brief concise description of the task / activity to be undertaken;*
- *Who – a brief concise description of the personnel involved with undertaking the task / activity;*
- *When - a brief concise description of the sequence of actions with due commencement and completion dates of the task / activity to be undertaken;*
- *Where - a brief concise description and map / drawing of the locality of the task / activity to be undertaken;*
- *Why - a brief concise description of the importance and requirement of the task / activity to be undertaken; and*
- *How - a brief concise description of the methods to be implemented, materials and equipment to be used for the task / activity to be undertaken.*

1.3 Language use

The method statement must be written in plain English so that they are understood by all. Therefore a well thought through and well written method statement providing clear and concise specific work plans, can save much time and money and potentially prevent the occurrence of incidents and accidents.

The implementation therefore of the method statements shall be audited by the ECO. Consequently the method statements must contain sufficient information and detail to satisfy the RLM Project Manager and ECO that the works will be implemented correctly and that potential incidents / accidents shall mitigated and managed.

Please remember to:

- *Consider the reader*
- *Communicate a clear message*
- *Use clear and concise language*
- *Consider how the information is portrayed*

1.4 Site Specific Requirements

The method statement must be site and project specific. Method statements copying information contained within the EMP, specifications or other documents shall not be considered as they do not indicate to the person responsible for approving the document, that the Contractor has a clear understanding of what is required.

1.5 Minimum Requirements

The method statement should as a minimum address the following:

i. Description

Provide a brief and concise description of the task at hand.

ii. Personnel Qualifications and Experience

- *List all the details of qualifications and experience required for the completion of the task.*
- *Experience may cover previous work done in the area that may not require certificates or licences.*

iii. Personnel, Duties and Responsibilities

Give details of the duties and specific responsibilities of supervisors and other personnel. For example, describe such things as daily toolbox talks and guidance provided by the Environmental Officer.

iv. Training Required to Complete Work

Make sure that all workers and their Supervisors are trained in the procedures needed to complete the job safely and in an environmentally responsible way, especially when undertaking task for the first time or where new or changed work methods are utilised.

v. Programme

Provide a clear and concise programme indicating all phases and time frames associated with the task.

vi. Construction sequence and method

Indicate all steps associated with task at hand. This must be done in a manner which is easily understandable and leaves no uncertainties to staff that are required to implement the task in the field.

vii. Possible Hazards

Include all possible hazards such as:

- *Hazardous substances, explosives, dust, etc.*
- *Hazards to others in area*
- *Rubbish, electrical, fills*

viii. Resources/Plant/Equipment

List resources, plant and equipment that you will use on the job, e.g. ladders, scaffold etc.

ix. Environmental

Indicate Environmental management responsibilities

Provide Environmental guidelines

Specify Employee training and involvement

Indicate the following:

- *Material consumption*
- *Energy consumption*
- *Water consumption*
- *Buildings, machinery, soil*
- *Residual materials and waste*
- *Atmospheric emissions, noise and odour pollution*
- *Wastewater*
- *Accidents and accident prevention*
- *Transport*

x. Health and Safety

List all safety controls such as:

- *MSDS*
- *Warning Signs*
- *Personal protective equipment*
- *Storage of materials and equipment*
- *Fellow workers/public safety provisions*
- *Housekeeping*

xi. Monitoring Systems

How will the execution of the task be monitored?

xii. Emergency/disaster incident and reaction procedures

Procedures must be included indicating how incidents/accidents will be dealt with and what steps are in place to prevent such an incident/accident from occurring.

xiii. General

Explanation of important technical/environmental terms