



MYEZO ENVIRONMENTAL MANAGEMENT SERVICES

Environmental Stewardship

ZETHU-MATSULU-BASIC ASSESSMENT REPORT

**FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT FOR THE PROPOSED DEVELOPMENT OF A
WASTE TRANSFER STATION IN MATSULU WITHIN MBOMBELA LOCAL MUNICIPALITY, MPUMALANGA
PROVINCE**

***Document Name: ZMB-R-Environmental Management Programme Report
Version 2 (Final)***

***Volume 1 of 1
Date: 4 May 2018***

Myezo Ref No: ZMB 2017/04/BA

DARDLEA Ref No: 17/4/WL/MP322/17/01 (Waste Licence)

DARDLEA Ref No: 1/3/1/16/1E - 118 (BAR)

Tel: 012 998 7642 | Fax: 012 998 7641 | C: 082 772 2418 | email: babalwa@myezo.co.za

Postnet Suite B165, Private Bag X18, Lynnwood Ridge, 0040, Pretoria, South Africa 645
Jacqueline Drive, Garsfontein, 0081, Pretoria, South Africa

***Zethu-Matsulu-Basic Assessment Report – Waste Transfer Facility
Draft Environmental Management Programme Report for the proposed development of a
Waste Transfer Station in Matsulu Within Mbombela Local Municipality, Mpumalanga
Province***

***Document Name: ZMB-R-Environmental Management Programme Report
Version 2 (Final)
Date: 4 May 2018***

Myezo Ref No.: ZMB 2017/04/BA

DARDLEA Ref No: 17/4/WL/MP322/17/01 (Waste Licence)

DARDLEA Ref No: 1/3/1/16/1E -118 (BAR)



**MYEZO ENVIRONMENTAL
MANAGEMENT SERVICES**

Environmental Stewardship

DISCLAIMER

This report has been prepared by Myezo Environmental Management Services (Pty) Ltd with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating all contractual agreements and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

OWNERSHIP OF REPORTS AND COPYRIGHTS

This report and all other relevant documentation and formats are the property of the authors. The information, ideas and structure are subject to the copyright laws or statutes of South Africa and may not be reproduced in part or in whole, or disclosed to a third party, without prior written permission of the author.

Copyright in all documents, drawings and records, whether produced manually or electronically, that form part of this report or project document shall vest in Myezo Environmental Management Services (Pty) Ltd (Myezo) and Zethu Consulting Engineers as well as City of Mbombela Local Municipality. None of the documents, drawings or records may be used or applied in any manner, nor may they be reproduced or transmitted in any form or by any means whatsoever for or to any other person, without the prior written consent of Myezo, except when they are reproduced for purposes of this report objectives.

**Zethu-Matsulu-Basic Assessment Report – Waste Transfer Facility
 Draft Environmental Management Programme Report for the proposed development of a
 Waste Transfer Station in Matsulu Within Mbombela Local Municipality, Mpumalanga
 Province**

**Document Name: ZMB-R-Environmental Management Programme Report
 Version 2 (Final)
 Date: 4 May 2018**

Myezo Ref No.: ZMB 2017/04/BA

DARDLEA Ref No: 17/4/WL/MP322/17/01 (Waste Licence)

DARDLEA Ref No: 1/3/1/16/1E -118 (BAR)



**MYEZO ENVIRONMENTAL
 MANAGEMENT SERVICES**
Environmental Stewardship

DOCUMENT CONTROL AND REVISION LIST

REVISION LIST

Revision	Nature of amendment	Compiled by	Approved by	Date of amendment
0.1 29 September 2017	First Draft	B. Fatyi L. Makuwa	B. Fatyi	First draft (no amendment)
Version 1 27 February 2018	Final submitted to CA	D. Kotane	B. Fatyi	26 February 2018
Version 2 4 May 2018	Revised Final submitted to CA and IAPs for 30 day review	D. Kotane	B. Fatyi	4 May 2018

Table of Contents

1. FULL DETAILS OF THE EAP 7

ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP) - NAME, QUALIFICATIONS AND EXPERIENCE ENVIRONMENTAL ASSESSMENT PRACTITIONER COMPILING THIS ENVIRONMENTAL MANAGEMENT PROGRAMME 7

1.1 AIMS OF THE WASTE TRANSFER FACILITY ENVIRONMENTAL MANAGEMENT PLAN..... 7

1.2 MANAGEMENT AND MONITORING PROCEDURES..... 7

 1.2.1 *Organisational Structure and Responsibility* 7

2. MITIGATION MEASURES 9

2.1 PLANNING 9

2.2 LEGAL COMPLIANCE..... 9

2.3 ENVIRONMENTAL AWARENESS PLAN..... 11

2.4 STAKEHOLDERS INVOLVEMENT DURING ALL STAGES OF THE PROJECT 41

2.5 REHABILITATION (CLOSURE PLANNING AND FINANCIAL PROVISION) FOR ALL ALTERNATIVES CONSIDERED (SITE 1 ERF 312, SITE 2 ERF 311, SITE 3 ERF 302 AND SITE 4 PORTION OF ERF 311 AND ERF 97). 41

3. DESCRIPTION OF ASPECTS OF THE ACTIVITY COVERED BY THIS ENVIRONMENTAL MANAGEMENT PROGRAMME 42

3.1 PROJECT TITLE..... 42

3.2 PROJECT DESCRIPTION 42

3.3 PROJECT SCOPE..... 43

3.4 WASTE QUANTITIES 43

3.5 PROJECT ACTIVITIES..... 44

 3.6.1 *Activities at Planning and Design Phase*..... 44

 3.5.2 *Activities at Construction Phase*..... 45

 3.5.3 *Activities at Operational phase*..... 46

 3.5.4 *Activities at Decommissioning and rehabilitation Phase*..... 46

4 ROLES AND RESPONSIBILITIES 47

4.2 ACTIONS AND CONTROLS..... 52

5 TIME FRAMES 55

5.2 BUDGET 56

6 PERFORMANCE MONITORING AND REPORTING 56

6.1 ENVIRONMENTAL AUDITOR 57

6.2 MONITORING PLAN 58

6.3 REPORTING PROCEDURES..... 67

Table of Tables

Table 2.3-1: Impact Assessment and Risk Rating 16

Table 4.1-1: Responsibility and Timeframes for Implementing each of the Mitigation Measures..... 55

Table 6.2-1: Monitoring Plan 59

Charts

Chart 1.2-1: Project Organisational Structure..... 8

Annexures

Annexure 1: Babalwa Fatyi's64
Annexure 2: Company Profile CV.....65

List of Acronyms

BAR- Basic Assessment Report
CBD – Central Business District
CEMP – Construction Site Environmental Management Plan
CWDS – Tekwane West Central Disposal Site
CLO- Community Liaison Officer
CV- Curriculum Vitae
DARDLEA – Department of Agriculture, Rural Development, Land and Environmental Affairs
EA- Environmental Authorisation
EA- Environmental Auditor
EAP – Environmental Assessment Practitioner
EMP- Environmental Management Plan/Programme
EMPr - Environmental Management Programme report
EO – Environmental Officer
ECO- Environmental Control Officer
EERP- Environmental Emergency Response Plan
EMS- Environmental Management System
HSRA- Health and Safety Risk Assessment
IAP- Interested and Affected Party
KNP – Kruger National Park
MLM – Mbombela Local Municipality
MPRDA - Mineral and Petroleum Resources Development Act (Act No. 28 of 2002).
MWTW – Matsulu Wastewater Treatment Works
NEMA- National Environmental Management Act (Act No. 107 of 1998),
NCR- Non Conformance Report
OHS Officer- Occupational Health and Safety Officer
OEMP- Office of Environmental Monitoring and Prediction
OHSA- Occupational Health and Safety Act (Act No. 85 of 1993)
PM- Project Manager
PPE- Personal Protective Equipment
SHE Officer- Safety, Health and Environmental Officer
SMMEs – Small Micro Medium Enterprises
WMM- Waste Management Measures
WRC- Water Resource Commission

1. Full details of the EAP

Environmental Assessment Practitioner (EAP) - Name, Qualifications and Experience Environmental Assessment Practitioner Compiling this Environmental Management Programme

Babalwa Fatyi, is the founder of Myezo Environmental Management Services (Pty) Ltd (Myezo) and is a registered Professional Natural Scientist (400123/01). She is also registered with Institute of Environmental Management and Assessment, Lincoln, UK (0025153). She has consulting experience, from having worked for an engineering consulting company for a period of 3 years. She has also worked for a mining company, where she was responsible for overseeing the company's compliance with its environmental obligations.

She has academic qualifications to back-up her experience, having obtained Master of Science (*cum laude*) and receiving 'SA Association for Advancement of Science Award' for an outstanding MSc Degree in the Faculty of Science. Babalwa has undertaken several environmental management and public consultation project in terms of National Environmental Management Act (Act No. 107 of 1998) (NEMA), as well as application of mining rights in terms of Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA).

She has developed several Environmental Management Programme reports (EMPr) from various developments from roads, outdoor advertising structures, mining developments with all their hydrological and geohydrological facilities, rehabilitation activities for a series of structures including those requiring catchment hydrology consideration. Babalwa competencies are included in her Curriculum Vitae (CV), attached as Annexure 1. A company profile is attached as Annexure 2.

1.1 Aims of the Waste Transfer Facility Environmental Management Plan

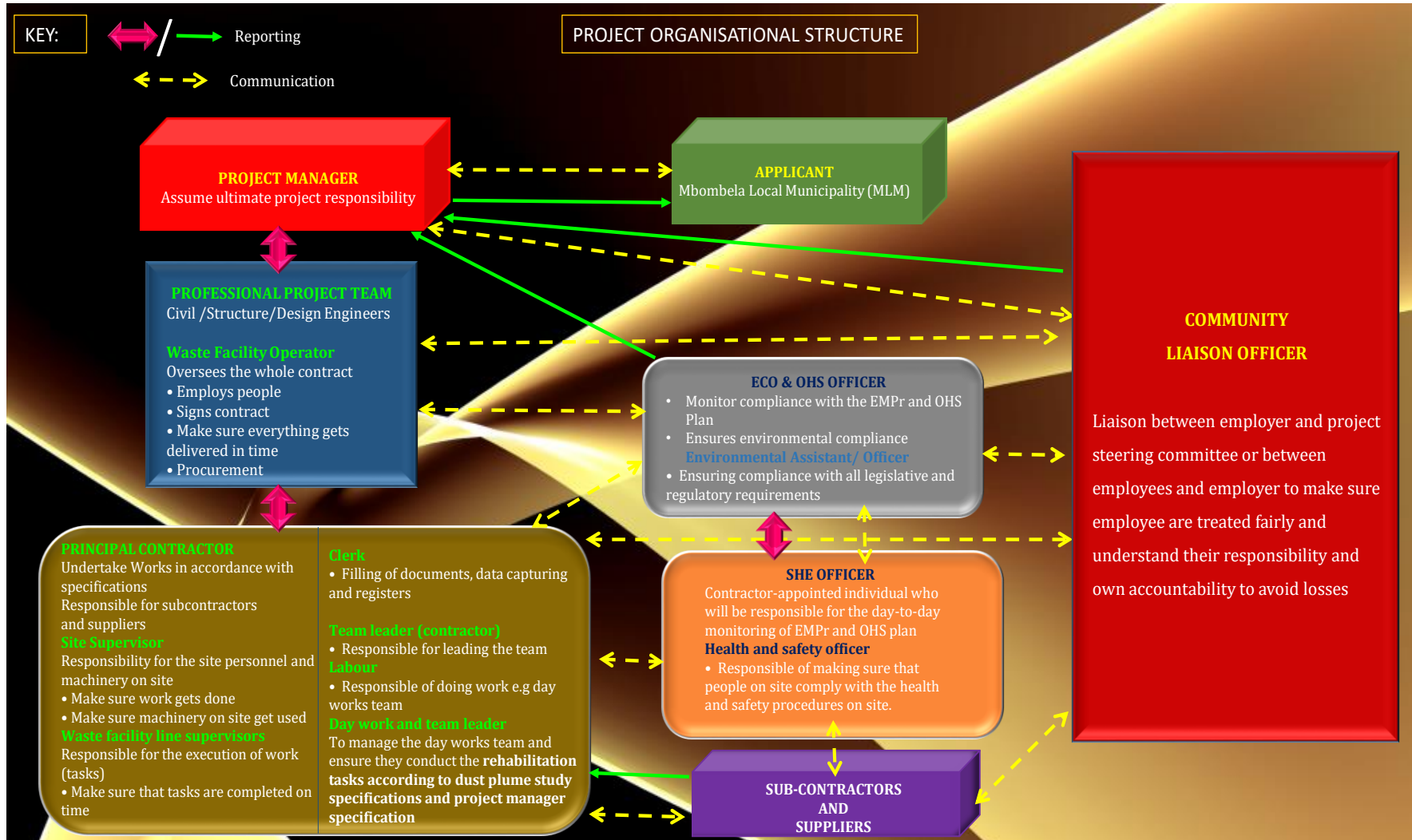
The Environmental Management Plan report (EMPr) (this document) aims to inform site managers about the best approaches to managing the planning, design, operations and decommissioning potential impacts of the proposed Waste Transfer facility in Matsulu and provide guidelines that allow effective prioritisation of management and mitigation measures that affect typical waste transfer facilities operations. These have been formulated with a view to meeting specific objectives, as defined in Section 2.1.

1.2 Management and Monitoring Procedures

1.2.1 Organisational Structure and Responsibility

The chart below provides an indication of the organisational and team structure for the project. Mbombela Local Municipality (MLM) will collaborate with other implementing structures and similar project within the study area. The Project Organisation Structure is shown as Chart 1.2-1 below.

Chart 1.2-1: Project Organisational Structure



2. Mitigation Measures

Planning and Design Phase

The mitigation measures for planning and design phase and construction phase are presented in Table 2.3-1.

2.1 Planning

Responsibility	Developer	Frequency/time frames	Planning and design until closure
-----------------------	-----------	------------------------------	-----------------------------------

Objectives

- To Ensure development and revision of environmental policy and endorsement by the project manager/site manager.
- To provide direction with respect to environmental management during initial phases of project development.

Mitigation Measures

1. Develop an Environmental Policy.
2. Policy to provide a framework for setting and reviewing environmental objectives and targets.
3. Policy to be endorsed by the developer.

2.2 Legal Compliance

2.2.1 Compliance with Environmental Development

The EMPr forms part of the contract documentation and is thus a legally binding document. It is also necessary for the contractor to make provisions as part of their budgets for the implementation of the EMPr. In terms of the National Environmental Management Act (Act No. 107 of 1998), (NEMA) Section 28, an individual responsible for environmental damage must pay costs both to the environment and human health and the preventative measures to reduce or prevent additional pollution and/or environmental damage from occurring. This is referred to as the *Polluter Pays Principle*. Section 28 of the NEMA embodies the polluter pays principle.

The Contractor is deemed not to have complied with the Environmental Specification/EMPr if:

- There is evidence of contravention of clauses within the boundaries of the site, site extensions and haul/access roads;
- Environmental damage ensues due to negligence;
- The contractor ignores or fails to comply with corrective or other instructions issued by the developer, Environmental Control Officer (ECO) or engineer within a specified time; and
- The contractor fails to respond adequately to complaints from the public.

Application of a penalty clause will apply for incidents of non-compliance. The contractor will be allowed one offense and a written warning will be issued by the ECO. Failure to rectify the offense within one (1) working week of the issue of the warning or a repeat offence will result in a fine. This fine will be issued by the ECO. The penalty imposed will be per incident. Unless stated otherwise in the project specification, penalties per incident or violation will be imposed.

Legal Compliance			
Responsibility	Developer	Frequency/time frames	Planning and design until closure
	Implementing Agent		
	Engineer		

Objectives

1. To facilitate compliance with conditions of approval and overall environmental management legal requirements and best practice guidelines

Mitigation Measures

1. Develop a legal register using all the statutes that are outlined under the policy.
2. Legal register to include an assessment of the legal implications of various Acts and relevant sections of those by-laws for local municipality.
3. Reconcile all permit conditions and have a separate register detailing:
 - i. Environmental Authorizations (EAs),
 - ii. Water authorizations,
 - iii. Waste disposal authorizations,
 - iv. Closure certificates,
 - v. Archaeological/Heritage permits.
4. Adhere to permit conditions,
5. Report to regulatory authorities according to set time frames stipulated in various conditions of authorization,
6. Distribute and utilize legal register optimally at all operations,
7. Register with legal update firms to Ensure that regular legal updates are received and incorporated into the legal register and implications of such new statutes understood and complied with.
8. Ensure there is adequate staff complement and capacity to Ensure law enforcement.

2.3 Environmental Awareness Plan

Responsibility	ECO, EO and H&S Officer,	Frequency/time frame	Planning and Design and throughout the operation on a quarterly basis
-----------------------	--------------------------	-----------------------------	---

Objectives

To ensure that:

- All employees who will perform work that will potentially impact on the environment are identified and trained such that they are competent or aware of the potential impact of their activities.
- The level of expertise and training needs of the identified personnel is determined.
- All employees are aware of the impact of their activities.
- Procedures are established and maintained to make appropriate employees aware of their environmental responsibilities.

2.3.1 The developer

The developer is ultimately responsible for ensuring compliance with the environmental specification and upholding the team to environmental commitment to compliance with all national, provincial and local legislation that relates to management of this environment.

The developer will through community liaison officer:

- Arrange information meetings for or consults with Interested and Affected Parties (IAPs) about the impending construction activities;
- May on the recommendation of the engineer and/or ECO and Community Liaison Officer (CLO) order the contractor to suspend any or all works on site if the contractor or his sub-contractor/supplier fails to comply with the said specifications; and
- Maintain a register of complaints and queries by members of the public at the site office.

More specifically the Mbombela Local Municipality (MLM) shall:

- Ensure that it complies with the requirements of this operational EMP for so long as the site is used as a Waste Transfer Facility;
- Designate a staff member as ECO who will on a weekly basis visit the study area site and assess compliance with the office of EMPr;
- Maintain a record of all environmental management activities relating to the site (including all environmental reports, complaints made by the public, etc.)
- Appoint an independent Environmental Auditor (EA) to undertake annual operational phase environmental audits into perpetuity to determine compliance with the Operational EMP.
- Submit an annual operational phase environmental audit report to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA).
- Implement the recommendations made by the EA timeously and to the satisfaction of the EA and/or Local Authority.
- Transfer the legal obligation of ongoing environmental management of the site to any future property owners through an appropriately formulated sale agreement/s.

2.3.2 The engineer

The engineer will:

- Enforce the environmental specification on site;
- Monitor compliance with the requirements of the specification;
- Assess the contractor's environmental performance in consultation with the ECO from which a brief monthly statement of environmental performance is drawn up for record purposes and to be reported to project meetings; and
- Ensure the documentation, in conjunction with the contractor, the state of the site prior to construction activities commencing. This documentation will be in the form of photographs or video record.

2.3.3 The contractor (including sub-contractors)

The contractor is required to:

- Be fully conversant with the EMPr and all conditions of the EA;
- Provide information on previous environmental management experience and company environmental policy in terms of the relevant forms contained in the contract document;
- Supply method statements timeously for all activities requiring special attention as specified and/or requested by the developer, ECO and/or engineer during the duration of the contract;
- Be conversant with the requirements of this environmental specification/EMPr. Brief all his/her staff about the requirements of the environmental specification;
- Comply with requirements of the ECO in terms of this specification and the project specification, as applicable, within the time period specified;
- Ensure any sub-contractors/suppliers who are utilised within the context of the contract comply with the environmental requirements of the project, in terms of the specifications. The contractor will be held responsible for non-compliance on their behalf;
- Bear the cost of any delays, with no extension of time granted, should he or his sub-contractors/suppliers contravene the said specifications such that the engineer orders a suspension of work. The suspension will be enforced until such time as the offending party(ies), procedure, or equipment is corrected;
- Be conversant with the requirements of this environmental specification/ EMPr. Brief all his/her staff about the requirements of the environmental specification;
- Comply with requirements of the ECO in terms of this specification and the project specification, as applicable, within the time period specified;
- Ensure any sub-contractors/suppliers who are utilized within the context of the contract comply with the environmental requirements of the project, in terms of the specifications. The contractor will be held responsible for non-compliance on their behalf;
- Bear the cost of any delays, with no extension of time granted, should he or his sub-contractors/suppliers contravene the said specifications such that the engineer orders a suspension of work. The suspension will be enforced until such time as the offending party(ies), procedure, or equipment is corrected.

2.3.4 Environmental Control Officer

The ECO shall be a Mbombela LM employee or a qualified environmental professional or professional firm with the relevant environmental expertise and shall be responsible for:

- Informing key, on-site staff through initial environmental awareness training of their roles and responsibilities in terms of the EMP;
- Undertaking weekly site inspections to determine compliance with the EMP;
- Identifying areas of non-compliance, and recommending measures to rectify them;
- Compiling a checklist of areas of non-compliance;
- Ensuring follow-up and resolution of all non-compliance;
- Acting as a community liaison officer to receive and respond to complaints raised by the public.

The ECO will:

- Be fully conversant with the EMPr;
- Be familiar with the recommendations and mitigation measures of the associated EMPr for the project;
- Monitor the implementation of the EMPr during the construction and rehabilitation phases;
- Ensure site protection measures are implemented on site;
- Monitor that the principal contractor, sub-contractors, construction teams and the developer are in compliance with the EMPr at all times during the construction and rehabilitation phases of the project;
- Monitor all site activities monthly for compliance;
- Conduct monthly audits of the site according to the EMPr, and report findings to the developer/contractor;
- Attend monthly site meetings;
- Recommend corrective action for any environmental non-compliance at the site;
- Compile a monthly report highlighting any non-compliance issues as well as progress and compliance with the EMPr prescriptions. These monthly reports are to be submitted to the Mbombela Local Municipality and Department of Agriculture and Rural Development and Land Administration; and
- Conduct once-off training with the contractor on the EMPr and general environmental awareness.
- It must be noted that the responsibility of the ECO is to monitor compliance and give advice on the implementation of the EMPr and not to enforce compliance. Ensuring compliance is the responsibility of the developer and the Safety, Health and Environment (SHE) Officer.

2.3.5 Occupational Health and Safety Officer

The Occupational Health and Safety (OHS) Officer will be responsible for undertaking of the following:

- Compilation of a comprehensive project Health and Safety Risk Assessment (HSRA);
- Compilation of health and safety specifications based on risks identified;
- Reviewing and approval of health and safety plan(s) submitted by appointed principal contractor(s);
- Conducting monthly health and safety inspections and compiling monthly OHS reports;
- Conducting monthly health and safety audits with audit reports;
- Assisting the developer/contractor in the investigation of major accident/incidents;
- Monitoring of site activities for compliance to the Occupational Health and Safety Act, (Act No. 85 of 1993) (OHSA) and Regulations;

- Establishment and monitoring of project health and safety file;
- Monitoring the principal contractor(s)' health and safety performance; and
- Preparation of project close-out reports and submission of project health and safety files to the Client.

2.3.6 Safety, Health and Environmental (SHE) Officer

The Safety, Health and Environmental Officer will:

- Be fully conversant with the EMPr;
- Be fully conversant with all relevant environmental legislation applicable to the project, and Ensure compliance with them;
- Compilation of method statements together with the principal contractor that will specify how potential environmental impacts in line with the requirements of the EMPr will be managed, and, where relevant environmental best practice and how they will practically Ensure that the objectives of the EMPr are achieved;
- Convey the contents of this EMPr to the construction site staff and discuss the contents in detail with the contractor;
- Undertake regular and comprehensive inspection of the site and surrounding areas in order to monitor compliance with the EMPr;
- Take appropriate action if the specifications contained in the EMPr are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible;
- Order the removal from the construction site of any person(s) and/or equipment in contravention of the specifications of the EMPr;
- Report any non-compliance or remedial measures that need to be applied to the appropriate environmental authorities, in line with the requirements of the EMPr;
- Submitting a report at each site meeting which will document all incidents that have occurred during the period before the site meeting;
- Ensuring that the list of transgressions issued by the ECO is available on request; and
- Maintain an environmental register which keeps a record of all incidents which occur on the site during construction. These incidents include:
 - Public involvement/complaints.
 - Health and safety incidents.
 - Incidents involving hazardous materials stored on site.
 - Non-compliance incidents.

2.3.7 Training and Environmental Awareness

Construction staff must be adequately educated by the ECO, and the SHE Officer, as to the provisions included in the EMPr and general environmentally friendly practice.

The EA and EMPr forms part of the formal site induction for all contractors, sub-contractors and casual labourers, preferably in their native language. The induction training will, as a minimum, include the following:

- The importance of conformance with all environmental policies;
- The environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the consultant's Environmental Management Systems (EMS), including emergency preparedness and response requirements; and
- The mitigation measures required to be implemented when carrying out their work activities.

All contractors, sub-contractors and casual labourers must acknowledge their understanding of the EMPr and environmental responsibilities by signing an induction attendance record. The contractor is expected to have “tool box” talks. These talks must be in accordance with the risks and trends associated with the project. Proof of these talks must be kept on site.

Table 2.3-1: Impact Assessment and Risk Rating

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
PHASE: PRE-CONSTRUCTION (PLANNING & DESIGN PHASE)						
1. Waste License Application and Environmental Authorisation	(a) Submit Waste & Environmental Authorisation Application Form	Direct	No development of Waste Transfer Facility	Design and Planning	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ol style="list-style-type: none"> 1. It will be Ensured that all Legislative and procedural requirements are met including specified timelines and protocols outlined within the BA Regulations before commencing with construction. 2. Application for Environmental Authorisation has been submitted (DARDLEA Ref No: 1/3/1/16/1E - 118 (BAR)) 3. Application for a Waste Licence has been submitted (DARDLEA Ref. No: 17/4/WL/MP322/17/01(Waste Licence)). 4. Communicate with relevant stakeholders on all project plans and progress. 5. Ensure transparency with project scope and implementation.
2. Site Assessment & Establishment: Site selection Site Establishment & Preparation 3. Development of drawings Construction plans Consolidation of safety files and other regulatory operational manuals	(a) Soil compaction; (b) Trampling on vegetation;	Direct	Land to be cleared of vegetation Change of land use of identified site(s)	Design and Planning	Significance rating prior to mitigation: Low Significance rating after mitigation: Low	<ol style="list-style-type: none"> 6. Careful consideration to reduce the footprint of the proposed activity not to increase impact to the environment. 7. Poor design & planning could result in highly significant environmental impacts. 8. Construction camp will be located on a previously disturbed area and should be located at least 100m from the watercourse. 9. Low noise machinery to be sourced. 10. Construction site and Environmental Management Plans (CEMP) will be implemented together with the EMPr. 11. Notification of community representatives about site

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						development plans.
4. Removal of informal housing development encroaching the proposed waste drop-off and transfer site	(a) Soil erosion Bare and exposed soil (c) Dust from dismantling of infrastructure (d) Loss of shelter and sense of belonging (displacement) (e) Loss of life due to potential flooding from the Crocodile river during wet rainy season.	Direct	Soil surface & composition Air quality Human health inhaling dust Human life and security Socio-economic aspects e.g job loss and loss of livelihood and economic benefits Human and faunal life due to flooding from the Crocodile river		Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	12. Consultation will the Municipality and Ward Councillors to address the matter with the informal residents within the site. 13. A Social Plan will be developed to address the removal and relocation of the illegal residents within the informal housing development in consultation with the community.
Site Safety and Access: 5. Excavation for	(a) Damage to top soil; (b) Siltation;	Direct/Cumulative	Site material safety Personnel	Design and Planning	Significance rating prior to mitigation: Low Significance rating after mitigation: Low	14. Material required for fencing will be stored at a clearly demarcated area within the contractor camp. The camp will be located close to the

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
fence; Install fencing and security gate; 6. Delivery and stockpiling of construction material. 7. Safety and site management, environmental induction, Source PPE safety equipment	Compaction of soil; (c) Dust from offloading of construction of material; (d) Theft of material & vandalism of site infrastructure		safety			area earmarked for infrastructure like ablution facilities in order to centralize the impacted area. 15. All areas for material stockpiling will be demarcated and kept secured at all times. 16. Perimeter fence will be checked regularly for damage and be fixed immediately. 17. Any suspicious movements around the site will be reported and investigated. 18. No mixing of stockpile material will be allowed. 19. All stockpile material will be covered (i.e top soil) to prevent soil erosion and potential water sources from surface water runoff. 20. Dust suppression methods will be implemented. 21. Site safety protocols will be adhered to.

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
<p>8. Site clearing: clearing of vegetation for construction</p> <p>9. Site Infrastructure</p> <ul style="list-style-type: none"> • Set mobile office facility • Install storage and ablution facilities • Install waste disposal facilities (e.g waste bins) • Clearing of access points where necessary 	<p>(a) Loss of soil</p> <p>(b) Loss of vegetation, disturbance to flora and displacement of faunal species.</p> <p>(c) Increase in storm water velocity and soil erosion,</p> <p>(d) Sedimentation of watercourse from eroded s</p>	Direct	<p>Soil structure</p> <p>Biodiversity</p> <p>Water sources</p>	Design and Planning	<p>Significance rating prior to mitigation: Medium</p> <p>Significance rating after mitigation: Low</p>	<p>22. All construction activities to be completed within the proposed footprint indicated in the layout drawings.</p> <p>23. All natural areas outside the demarcated site area will be demarcated with barrier as no-go areas. The no-go areas must not be accessed by construction personnel or vehicles.</p> <p>24. All construction activities, materials, equipment and personnel to be restricted to within the area specified.</p> <p>25. Rehabilitation of areas disturbed during construction shall be undertaken through landscaping and planting of indigenous species.</p> <p>26. A comprehensive alien vegetation eradication and control programme will be implemented during and after construction and continue for the lifetime of the facility.</p> <p>27. Provide mobile chemical toilets.</p> <p>28. According to SANBI's Guidelines for Environmental Impact Assessments (http://redlist.sanbi.org/eiaguidelines.php), in situ conservation of species of conservation significance is vital and is recommended as the only option for conserving species of conservation concern. Ex situ conservation, i.e. the removal of a subpopulation from its natural habitat to an artificial environment, a practice often termed "search and rescue", will result in the erosion of the inherent genetic diversity and characteristics of that species and</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>increase its risk of extinction in the wild. Similarly, translocation of subpopulations is an unacceptable conservation measure. Translocations are expensive and rarely successful. Even if they are successful, translocated individuals may harm other species within the receiving environment, the translocated individuals may transmit pathogens and/or parasites, and translocation may result in rapid changes in the species itself.</p> <p>29. If possible, developments that jeopardize any large populations of species of conservation significance should be planned in such a way as to avoid the populations and their habitat by the conservation of prescribed buffer zones.</p> <p>30. Any specimens of protected plant species known to occur in the vicinity of or directly adjacent to the development footprint and may potentially be impacted by the development activities, are to be fenced off for the duration of the activity. If these species fall within the development footprint special authorization is to be obtained from relevant conservation authorities for such species to be cut, disturbed, damaged or destroyed. Applications for such activities should be made to the responsible official within the provincial conservation department and/or SANBI.</p> <p>31. An alien vegetation control plan has to be implemented in order to</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>manage alien plant species occurring within the developed and surrounding area.</p> <p>32. Removal of the alien invader and weed species encountered on the property must take place in order to comply with existing legislation (amendments to the regulations under the Conservation of Agricultural Resources Act, 1983 and Section 28 of the National Environmental Management Act, 1998). Removal of species should take place throughout the construction, operational, closure/decommissioning and rehabilitation/ maintenance phases. Care should be taken with the choice of herbicides to ensure that no additional impact and loss of indigenous plant species occurs due to the herbicides used. Proper training should be given to contractors/applicators to avoid spraying indigenous vegetation.</p> <p>33. Landscaping with local indigenous species is preferable and should include forage and host plants required by pollinators.</p> <p>34. After the construction phase reseeded of local indigenous plant species should be done in between the developed infrastructure and all affected areas to re-establish plant species diversity. These re-seeded areas should be well maintained during the operational phase.</p> <p>35. All construction activities, materials, equipment and personnel to be restricted to within the area</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>specified.</p> <p>36. Rehabilitation of areas disturbed during construction shall be undertaken through landscaping and planting of indigenous species.</p> <p>37. A comprehensive alien vegetation eradication and control programme will be implemented during and after construction and continue for the lifetime of the facility.</p> <p>38. Provide mobile chemical toilets.</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
10. Auxiliary Services <ul style="list-style-type: none"> • Portable water supply and storage tanks • Diesel, petrol and HFO storage facility roads • Office buildings, training centre, emergency services and cafeteria • Workshops: electrical and mechanical • Security offices • Fire protection equipment 	(a) Visual intrusion	Direct	Aesthetic value of the area	Design and Planning	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	39. Construct the boundary wall in a manner in keeping with the area. Solid fencing and vegetative screening can improve the visual appearance of the drop-off and can provide a buffer to noise and dust. 40. Plant trees to soften the effect of the wall and further screen the proposed structures (note: should there be sufficient Municipal/project budget for such planting). 1.
11. Machinery and Equipment delivery to site	(a) Soil pollution from oil and chemical leaks or spillages	Direct/ Cumulative	Water sources Soil pollution Human life (Personnel and Communities)	Planning and Design	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	41. Site Establishment and Management Specification and Procedures to be adhered to. 42. Reduce risk of incidents due to operation of vehicles and equipment during site clearing. Safety procedures will be adhered to. 43. Ensure adherence to the EMPr.
12. Recruitment of local site workers	(a) Improved economic and social status	Direct	Job creation	Design and Planning Construction Operational Decommissioning and Rehabilitation	Significance rating prior to mitigation: High Significance rating after mitigation: Medium	44. Local community personnel to be sourced/recruited for rehabilitation. 45. Local site workers to undergo extensive safety and environmental induction training on environmental and wetland rehabilitation requirements including worker behaviour on site. 46. Ensure use of PPE at all times. 47. Odour management plan to be implemented. 48. Waste Management plan will be implemented. No waste will be stored for more than a day on site. 49. Noise Management plan will be

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>implemented. Housekeeping rules to will be enforced.</p> <p>50. It will be ensured that all illegal dumping sites on the vicinity of the site and its surrounding areas are cleared before construction and rehabilitated to reduce further impacts.</p>
<p>13. Training of site workers: Skills development of employees in various skills such as finance, management, marketing, sales, stock etc.</p>	<p>(a) Improved skill levels (b) Exposure to new vocational training and opportunities.</p>	Direct	Human Skills level & empowerment	Planning & Design	<p>Significance rating prior to mitigation: Medium Significance rating after mitigation: High</p>	<p>51. Skill development in the local community will be promoted and encouraged. 52. Provision of opportunities for exposure to other vocational areas will be encouraged. 53. Empowerment of community through other educational programmes will be encouraged. 54. Site specific awareness programmes will be encouraged. 55. Provision of on-site accredited training will be encouraged.</p>
<p>14. Access road use by Trucks for site establishment material delivery at the site.</p>	<p>(a) Increased traffic volumes (b) Public safety (motorists and pedestrians)</p>	Direct	<p>Existing road infrastructure Other road users Pedestrians</p>	Design and Planning	<p>Significance rating prior to mitigation: Medium Significance rating after mitigation: Low</p>	<p>56. It will be ensured that adherence to speed limit of 30km/hr before the entry to the site. 57. Installation of speed humps to enforce speed limit to be considered. 58. Safety monitors especially at the intersections will be placed to Ensure safety of motorists and pedestrians. 59. Educate staff about the impacts of off-road driving</p>
	<p>c) Dust d) Noise</p>	Direct/ Cumulative	<p>Local communities Other road users</p>	<p>Design and Planning, Construction, Operational, Decommission and Rehabilitation</p>	<p>Significance rating prior to mitigation: Medium Significance rating after mitigation: Low</p>	<p>60. It will be ensured that adherence to speed limit of 30km/hr before the entry to the site. 61. Installation of speed humps to enforce speed limit to be considered. 62. Dust suppression methods will be implemented. 63. Investing in trucks with a lower ambient noise emission system will</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						be considered.
64. PHASE: CONSTRUCTION						
15. Construction Camp Management	<ul style="list-style-type: none"> • Social disturbance: <ul style="list-style-type: none"> ➤ Noise ➤ Dust ➤ Safety ➤ Pollution (litter) 	Direct/ Cumulative	Environmental & human health	Design and Planning	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	65. Construction camp will be located on a previously disturbed area and should be located at least 100m from the watercourse. 66. Construction camp & ablution facilities will be out of the sensitive zone areas and proper CEMP (Construction Site Environmental Management Plans) will be implemented together with the EMPr. 67. Built structures will not break the horizon. 68. Consideration of using screen planting to obstruct the view of construction camp and stockpile from road users will be regarded. Use of only local indigenous vegetation will be ensured. 69. Disaster Management Plan and all Site Health and Safety Procedures will be implemented. 70. Dust suppression will be implemented within the site to minimise air quality and visibility impacts. 71. Fires will only be allowed in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a firebreak will be cleared around the perimeter of the camp and office sites. 72. A designated place for food preparation and eating will be established at the construction site. 73. Dry chemical toilets will be made available at a ration of 1 toilet per

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>10 staff, within the campsite perimeter and will be cleaned and serviced as requested by the service provider.</p> <p>74. Workers movements will be limited to the construction area only and will be enforced in terms of the contracts of appointments.</p> <p>75. Any complaints will be addressed accordingly and records will be kept thereof.</p> <p>76. Residents will be notified 7 days in advance of disruptions to services (water, electricity and road closures).</p>
<p>16. Delivery of construction materials</p> <p>17. Grading/ levelling of the landscape</p> <p>18. Ripping/ loosening of soil</p>	<p>(a) Damage to top soil;</p> <p>(b) Compaction of soil;</p> <p>(c) Soil pollution due to oil leaks from machinery;</p> <p>(d) Loss of vegetation;</p> <p>(e) Increase in storm water velocity and soil erosion;</p> <p>(f) Loss of biodiversity;</p> <p>(g) Dust generation;</p> <p>(h) Noise from machinery, equipment and personnel;</p> <p>(i) Degradation and/or destruction of sensitive habitats such as the adjacent Protected Area (KNP).</p>	Direct	<p>Soil surface</p> <p>Soil structure/</p> <p>Soil composition</p>	Construction	<p>Significance rating prior to mitigation: Low</p> <p>Significance rating after mitigation: Low</p>	<p>77. Bare surfaces will be managed as small as possible.</p> <p>78. All personnel to use the construction environmental management programme guidelines to reduce machinery and personnel noise levels to low.</p> <p>79. The Contractor will strip and stockpile all soil within the site for use at a later stage.</p> <p>80. Topsoil removed will be stockpiled in a specified area.</p> <p>81. Stockpiles will be placed outside of the retained wetland buffer. Stockpiles will be covered and protected from wind and rain with the use of tarpaulins where necessary. The Engineer must use discretion in this regard.</p> <p>82. Sanitation facilities must not be located within 50m of any water resources or water drainage areas. Facilities will be regularly checked and serviced regularly to reduce risk</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>of soil pollution, surface water and groundwater pollution.</p> <p>83. Vegetation clearing on the site should take place only immediately prior to construction in order to minimise the time the soil is bare, thus minimising soil erosion, dust and visual impacts.</p> <p>84. Stockpiles will be placed outside of the retained wetland buffer. Stockpiles will be covered and protected from wind and rain with the use of tarpaulins where necessary. The Engineer must use discretion in this regard.</p> <p>85. Sanitation facilities must not be located within 50m of any water resources or water drainage areas. Facilities will be regularly checked and serviced regularly to reduce risk of soil pollution, surface water and groundwater pollution.</p> <p>86. Vegetation clearing on the site should take place only immediately prior to construction in order to minimise the time the soil is bare, thus minimising soil erosion, dust and visual impacts.</p> <p>87. During excavations, soil stockpiling should be as far as possible away from the edge of sensitive areas to avoid siltation of these areas from soil stock piles.</p> <p>88. Construction machinery and vehicles may not be allowed to enter sensitive areas. Strictly no re-fueling of vehicles or machinery should be allowed to take place in any construction area close to a</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>river, riparian zone, wetland/drainage line or other sensitive area.</p> <p>89. If constructed, the waste transfer station should be managed in such a way as to minimize pollution of sensitive areas by maintaining buffer zones adjacent to such areas.</p> <p>90. An alien vegetation control plan has to be implemented in order to manage alien plant species occurring within the developed and surrounding area.</p> <p>91. Regarding the loss of vulnerable ecosystems and other sensitive habitats as well as CBA's and ESA's in and adjacent to the study area and the possibility of future degradation and loss of such areas the no-go option or viable alternatives may be considered.</p>
19. Cutting of slope and levelling for site infrastructure construction	<p>Change in topography: Change to the slope of the existing site;</p> <p>Visual intrusion due to the stockpiling of material on site.</p>	Direct	Cutting of slope and levelling of current site for construction and foundation establishment	Construction	<p>Significance rating prior to mitigation: Medium</p> <p>Significance rating after mitigation: Low</p>	92. It will be ensured that topography aligned to the building designs and minimises impact to environment and human safety.

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
20. Construction activities - debris, construction rubble and oil spills	(a) Soil erosion, increased erosion levels due to run-off of water. (b) Exposure of soil, little precipitation and evaporation, loss of habitat life. (b) Soil pollution - waste illegal dumping (c) Water pollution - stormwater coming into contact with construction materials, oil spills and construction waste.	Direct	Soil health Surface water resources health Ground water health	Construction	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	93. Once earthworks are complete, disturbed areas are to be stabilised to prevent erosion. 94. All construction vehicles and machinery and equipment will be properly maintained to prevent leaks. 95. All bare surfaces to be re-vegetated or paved to reduce the impacts of soil erosion from increased surface water runoff and surface water pollution. 96. Clearance of all illegal dumping sites prior to construction.
21. Waste generation during construction	(a) An increase in the amount of litter being generated (b) Non-use of sanitation facilities. (c) Construction waste or rubble (d) Soil and Surface water pollution due to wind blown litter.	Direct	Soil health Site Aesthetic value	Construction Decommissioning and Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	97. Environmental Awareness induction training will be conducted to address the general site and sanitation facilities management. 98. Site management procedures and guidelines will be implemented and all waste and rubble will be collected in appropriate waste receptacles and disposed of at the nearest authorised landfill site.
22. Vehicular movement during construction: • Increase in dust and erosion from clearing of vegetation, earth	(a) Air Quality: • Dust • Emissions • Visibility • Visual intrusion	Direct	Air Quality Human health (inhalation of dust and emissions)	Construction	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	99. Dust suppression methods will be implemented. 100. Implement the site Health and Safety Plan. 101. Ensure that construction vehicles travelling on unpaved roads do not

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
<p>moving activities, as a result of earthworks, demolition, as well as the delivery and mixing of construction materials.</p> <ul style="list-style-type: none"> • Emissions from construction vehicles • and increase in vehicle traffic. • Uncovered stockpiled construction material on site • Traffic, congestion and potential for collisions during the construction phase. 	<ul style="list-style-type: none"> • Soil erosion • Personnel Safety 		<p>from the site) Human safety - potential collisions and incidents on site</p>			<p>exceed a speed limit of 30 km/hour.</p> <p>102. Vehicles ,people and materials will be limited the construction site.</p> <p>103. Construction activities will be limited to day time hours (08h00 - 17h00)</p> <p>104. Road barricading will be</p> <p>105. undertaken where required and road safety signs should be adequately installed at strategic points within the construction site.</p>
<p>23. Environmental contamination from building rubble, chemical leaks, spills and emissions, human excrement and litter.</p>	<p>(a) Soil pollution (b) Surface water pollution (c) Ground water pollution</p>	Direct	<p>Soil health Water quality</p>	Construction	<p>Significance rating prior to mitigation: Medium Significance rating after mitigation: Low</p>	<p>106. Regular check of the vehicles, machinery and equipment operating on site will be Ensured</p> <p>107. Should a hydrocarbon or other chemical spill occur, clean up procedures will be undertaken a.s.a.p., in line with best practice:</p> <p>108. Spills on soil will be contained by using oil absorbents and/or peat sorbs to absorb the spill. This will be cleaned and removed into adequate hazardous waste containers.</p> <p>109. All contaminated soil will be removed and placed into hazardous waste bins</p> <p>110. Spills on water will be addressed by personnel on site or by pollution control contractors, using oil absorbents or oil skimmers.</p> <p>111. Oil contaminated absorbent material or skimmed-off chemicals need will be disposed of in</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<p>hazardous waste bins or sealable drums.</p> <p>112. No spilled products will be disposed of in sewers or storm water drains, or be deliberately ignited.</p> <p>113. Gloves/PPE will be worn when handling spilled petroleum products.</p>
24. Potential visual intrusion of construction/demolition activities on the views of sensitive visual receptors	Visual impacts: Visual intrusion	Direct	Visibility of neighbouring communities and road users	Construction Decommissioning and Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<p>114. Dust suppression methods will be implemented.</p> <p>115. Good housekeeping on site to avoid litter and minimise waste will be ensured.</p> <p>116. Litter and rubble will be timeously removed from the construction site and disposed at a licenced waste disposal facility.</p> <p>117. Additional mitigation measures could <u>include</u>:</p> <p>118. Construct the boundary wall in a manner in keeping with the area. Solid fencing and vegetative screening can improve the visual appearance of the drop-off and can provide a buffer to noise and dust.</p> <p>119. Plant trees to soften the effect of the wall and further screen the proposed structures (note: should there be sufficient Municipal/project budget for such planting).</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
25. Use of construction equipment (for the construction of the proposed infrastructure and demolition of existing infrastructure).	(a) Noise impacts: <ul style="list-style-type: none"> • Level of noise generated on site from <ul style="list-style-type: none"> ➢ vehicular movement, construction personnel working and ➢ the use of equipment and machinery during construction work e.g. trucks offloading waste, compactor, loading of waste for haulage to disposal site. ➢ Noise from demolition works. 	Direct/ Cumulative	Human health - too much noise affects the ear and hearing abilities of personnel and neighbouring community.	Construction and Decommissioning and Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	120. Will limit construction activities to day time hours 121. Construction personnel must wear proper hearing protection, which should be specified as part of the Construction Phase Risk Assessment carried out by the Health and Safety officer. 122. Ensure construction personnel are provided with adequate Personal Protective Equipment (PPE), where appropriate 3.
26. Construction activities: Safety of personnel	Health and Safety impacts: <u>Safety and fire</u> - Potential impact on the safety of construction workers due to construction activities (such as welding, cutting, working at heights, lifting of heavy items etc.). - open excavations and movement of construction vehicles cause a	Direct	Human life Human health	Construction	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	123. It will be ensure that a skilled and competent Contractor is appointed during the construction phase. The Contractor will be evaluated during the tender/appointment process in terms of safety standards. 124. The Contractor must Ensure Ensure that all construction personnel are provided with adequate PPE for use where appropriate. 125. The Contractor must undertake a Construction Phase Risk Assessment. 126. A Construction Site Manager or Safety Supervisor should be appointed, in conjunction with the project manager, to monitor all safety aspects during the construction phase. This could be

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
	<p>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).</p> <p>Potential health injuries to construction personnel as a result of construction work (i.e. welding fumes).</p>					<p>the same person that is assigned to co-ordinate the construction traffic.</p> <p>127. It will be Ensured that roads are not closed during construction, which may restrict access for emergency services.</p> <p>128. The Contractor must Ensure that all construction personnel are provided with adequate PPE for use where appropriate.</p> <p>129. Strict adherence to the Site Health and Safety Plan to be ensured.</p>
27. Construction activities: Disturbance of Heritage Resources from construction activities.	Heritage resources	Direct	Heritage resources	Construction, Operational & Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Low Significance rating after mitigation: Low	<p>130. The Contractor must Ensure that all personnel are aware of potential Heritage resources that might exist in the site and proper protocol of reporting and recording will be followed.</p> <p>131. The relevant Heritage Authorities will be contacted upon discovery of any Heritage resources.</p>

ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
PHASE: OPERATIONAL						
28. Receive the waste 29. Separation into streams 30. Temporal Storage of waste streams at the site 31. Loading into "walk in floors" containers 32. Transportation for disposal	(a) Odours (b) Waste Spills	Direct/ Cumulative	Human health	Operational	Significance rating prior to mitigation: Low Significance rating after mitigation: Low	132. Proper facility design and operational procedures will significantly reduce odour problems. 133. It will be ensured that the waste is sorted accordingly and stored in appropriate containers. 134. Waste material will not be stored for long periods, disposal of waste will be done daily. 135. The surface areas will be lined, cemented and impermeable. 136. To work to be conducted in porous surfaces. 137. Good housekeeping measures will be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste. 138. Protective clothing will be worn at all times. 139. Extra precaution will be taken for site worker working at the Garden/Green waste area.
	(b) Potential oil spills and leaks during offloading, loading and transportation for disposal.	Direct/Cumulative	Soil health Surface and Ground water health	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	140. It will be ensured that trucks and vehicles are regularly checked and serviced. 141. Oil spills kits will be readily available. 142. Fire kits and fire extinguishers to be readily available around the site.

	(c) Vectors: Flies and Rats	Direct/Cumulative	Human health	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	143. Health and Safety Protocols to be implemented and adhered to. 144. We will ensure that the waste is temporarily stored, sorted and disposed off as soon as possible to reduce the abundance of flies and rats within the site. 145. It will be ensured that the waste site perimeter is sealed and regularly checked for holes and cracks. 146. Daily cleaning of the site exterior and interior to be done. 147. Site manager will implement a pest control program at least once every quarter.
ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
	(d) Birds, cats and dogs	Direct/Cumulative	Human health Animal health	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> • Good housekeeping measures will be implemented including regular cleaning and disinfecting of surfaces and equipment that come into contact with waste. • Ensure the temporal waste stored on site is covered within the appropriate containers. No waste or litter will be exposed or on the floor. • Litter covers will be used on containers on site and on trucks during transportation to the landfill site.
33. Temporal storage of garden waste at site - unlined surface	(a) Water pollution/contamination of water sources and ground water	Direct/Cumulative	Surface water and groundwater	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> • It will be ensured that water use for the garden waste and dust suppression is the permitted quantities. • No excess water will be wasted. • Prevent excess water that could lead to surface water and result in soil erosion and water surface pollution of the nearby Crocodile River.

34. Unlined surfaces for waste drop off, packaging and loading to trucks for disposal	(a) Ground water pollution (b) Soil pollution	Direct/Indirect	Ground water health Water users dependent on ground water Soil health	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> Protect all bare surfaces within the site by planting indigenous plants to reduce soil erosion and ground water pollution.
35. Flat and smooth surfaces around the site without proper storm water management system	(a) Storm water management	Direct/Cumulative	Soil erosion	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that the site has proper functional storm water management system that is cleaned and maintained regularly. Identified leaks will be repaired and issues of water wastage will be addressed as soon as these are identified. Installation of oil traps and proper disposal systems will be implemented. Over-wetting, saturation and unnecessary runoff during dust control activities and irrigation will be avoided. All heavy vehicles and machinery will be kept in good working order and serviced regularly.
ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
36. Vehicular movement: Trucks offloading and loading waste	(a) Air Quality: Dust/Emissions	Direct/Cumulative	Air Quality; Human Health	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured trucks adhere to speed limits inside the site and outside the site. It will be ensured that dust suppression methods are implemented as outlined in the EMPr.
37. Trucks and vehicle maintenance (General Operations and Maintenance)	(a) Soil pollution from oil and chemical spills during maintenance service	Direct/Cumulative	Soil health Surface and Ground water health	Operational	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that the trucks and vehicles maintenance service is offsite or conducted in an appropriately designed and constructed workshop. It will be ensured that safe

						<p>storage and use of all the hazardous and flammable chemicals and substances for the maintenance service. All Health and Safety Protocols and Procedures to be implemented and adhered to.</p> <ul style="list-style-type: none"> • Refuelling of trucks will be done offsite.
38. Vehicular movement, construction personnel working and the use of equipment and machinery during operational phase e.g. trucks offloading waste, compaction of waste, loading of waste for haulage to disposal site. Possible chipping of garden waste before transportation to composting site.	<p>(a) Noise impacts:</p> <ul style="list-style-type: none"> • Level of noise generated on site from trucks and vehicles in and out of the site • Operation of machinery and equipment • Loading waste and transportation for disposal. 	Direct/Cumulative	Community hearing health Site Workers	Construction, Operational & Decommissioning & Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> • Construction activities will be limited to day time hours • Construction personnel will wear proper hearing protection, which should be specified as part of the Construction Phase Risk Assessment carried out by the Health and Safety officer. • It will be ensured construction personnel are provided with adequate Personal Protective Equipment (PPE), where appropriate.
39. Socio-economic Impact	(a) Employment creation (approximately 10 - 15 new jobs)	Direct/Cumulative	Community well being and food security Local economic boost	Construction, Operational & Decommissioning & Rehabilitation	Significance rating prior to mitigation: Low (+) Significance rating after mitigation: Medium	<ul style="list-style-type: none"> • It will be ensured the use of local labour and local skills as far as reasonably possible. • Where the required skills do not occur locally, and where
ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
	<p>(b) Skills development</p> <p>(c) Local economic development</p>					<ul style="list-style-type: none"> • appropriate and applicable, Ensure that relevant local individuals are trained. • It will be ensured that an equitable percentage allocation is provided for local labour employment as well as

						<p>specify the use of small-to-medium enterprises and training specifications in the Contractors contract.</p> <ul style="list-style-type: none"> It will be ensured that goods and services are sourced from the local and regional economy as far as reasonably possible.
PHASE: DECOMMISSIONING/ REHABILITATION						
40. Demolition of all infrastructure on the site	(a) Surface water pollution	Direct/Cumulative	Crocodile river proximity, risk of sedimentation from the contaminated surface water run off.	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Low Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Work will be limited to working hours (07h30 – 16h00).
	<p>Air pollution:</p> <p>(a) Dust from the ripping and demolition of all infrastructure on site.</p> <p>(b) Emissions from trucks hauling off the building rubble from the site.</p>	Direct/Cumulative	Air Quality	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Dust suppression method to be implemented. Work will be limited to working hours (07h30 – 16h00).
	Soil pollution (a) Oil spills, waste spills etc. from demolition and movement of trucks etc.	Direct/Cumulative	Soil health	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that the trucks and vehicles maintenance service is offsite or conducted in an appropriately designed and constructed workshop. It will be ensured safe storage and use of all the hazardous and flammable chemicals and substances for the maintenance service.
ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<ul style="list-style-type: none"> All Health and Safety Protocols and Procedures to be implemented and

						adhered to. Refuelling of trucks will be done offsite.
	Traffic (a) Additional traffic of trucks removing demolition rubble to the landfill site for construction material.		Road surface Other road users Pedestrians	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Work will be limited to working hours (07h30 – 16h00)
	(a) Noise: Noise from the demolition process (machinery, trucks and equipment) to be used.	Direct/Cumulative	Site workers Neighbouring community	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Medium Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan. Work will be limited to working hours Limit construction activities to day time hours (07h30 – 16h00). Construction personnel must wear proper hearing protection, which should be specified as part of the Construction Phase Risk Assessment carried out by the Health and Safety officer. It will be ensured construction personnel are provided with adequate Personal Protective Equipment (PPE), where appropriate. Consider use of trucks with muted levels of noise to cater for the proximity to the KNP and potential impact to the animals. A buffer zone between the proposed site and the receptors (residential and animals) will be maintained. Noise control measures and noise screening methods such as planting of trees as wind and noise breaks will be implemented. IAPs will be informed about the impending excessive noise and the duration. Generators and other equipment will be housed in casings to reduce noise levels
ACTIVITY	IMPACTS	TYPE OF IMPACT	ASPECTS AFFECTED	PHASE	SIGNIFICANCE RATING	MITIGATION MEASURES
						<ul style="list-style-type: none"> within the site. No loud music or excessive noise

						generated by employees will be allowed on site.
41. Poor rehabilitation methods implementation	(a) Landscape scarring (b) Visual intrusion: Poorly rehabilitated site leads to unsightly area to surrounding communities.	Direct/Cumulative	Landscape & Topography	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Low Significance rating after mitigation: Low	<ul style="list-style-type: none"> It will be ensured that all required steps are taken as outlined in the Decommissioning and Rehabilitation Plan.
42. Decommissioning of site	Socioeconomic impacts: (a) Loss of employment and economic stability of community.	Direct/ Cumulative	Community economic security Food security	Decommissioning/ Rehabilitation	Significance rating prior to mitigation: Low Significance rating after mitigation: Medium	<ul style="list-style-type: none"> Skills development training to include skills that are outside the Waste management field. Diversification of vocational skills to be encouraged. Post-project programmes linked to IDP to be encouraged. Redeploy to other running projects. Business skills to be provided to all personnel on site. Train the Trainer programmes to be encouraged for personnel at site to provide training programmes to other community members and other areas with newly established Waste Transfer Stations. Establishment of Cooperatives by the personnel to be encouraged to sustain them even after the decommissioning of the current site.

2.4 Stakeholders Involvement during all stages of the project

Stakeholder Involvement			
Responsibility	Developer, Professional project team, Community liaison officer, Project Manager, Contractor, and ECO	Frequency/time frame	Planning and Design throughout the operation site establishment construction operations and decommissioning

Objectives

- To ensure the ongoing involvement of representatives in the planning, development and management of the rehabilitation interventions.

Mitigation Measures

- Develop and implement effective mechanisms for ongoing communications with local stakeholders and neighbouring communities.
- Actively participate in local and regional conservation and socio-economic development initiative that may affect or benefit the project during all development phases developmental stages.
- Identify and enable access to employment empowerment and capacity building opportunities for the local community.

2.5 Rehabilitation (Closure Planning and Financial Provision) for all Alternatives Considered (Site 1 Erf 312, Site 2 Erf 311, Site 3 Erf 302 and Site 4 Portion of Erf 311 and Erf 97).

Rehabilitation			
Responsibility	Developer	Frequency/time frame	Planning and Design and throughout the operation on a quarterly basis
	Professional project team		

Objectives

- This rehabilitation plan is a general plan for all proposed four site Alternatives. The rehabilitation plan addresses rehabilitation of both construction and maintenance of structures during operation some appropriate instances.

Mitigation Measures:

4. Disturbed areas will be rehabilitated through topsoil replacement and the establishment of vegetation in these areas. Where practical, rehabilitation will take place during the construction and operational phases.
5. Topsoil will be conserved and used judiciously in the rehabilitation of disturbed land. Vegetation establishment in disturbed areas will be undertaken as soon as is practical, with growing season and water availability being the primary time constraints.
6. The spread of invader species on disturbed land will be controlled until the vegetation cover is capable of providing sufficient natural weed control. In general, initial revegetation will be undertaken using a mixture of indigenous available seeds that will germinate reliably (high seed viability).

2.5.1 Flora and Fauna Rehabilitation Plan

- Disturbance of large footprint areas will be avoided.
- Clearance activities will be limited only to the area to be used for development purposes.
- All cleared area will be rehabilitated.
- Clearance activities will be limited only to the area to be used for the sewer pipeline and associated infrastructures.
- Any tree cutting will be done in line with Municipal by-laws and a license for any cutting of a tree should be sought from the municipality (National Forest Act No 84 of 1998).
- Monitoring plan will include control of alien invasive species.
- The floristic diversity of the non-affected areas of the development as well as areas directly adjacent – especially the area of the KNP directly adjacent to the proposed waste dumping and transfer site will be monitored.
- Populations of threatened or protected species in the study area and on neighboring properties / areas during all project phases will be assessed and monitored.
- Monitor and manage the removal of any threatened or protected plant species.
- Authorisation will be obtained, through a provincial and/or national permitting system, from relevant conservation authorities for such species to be disturbed, damaged or destroyed.
- Monitor impacts and related mitigation measures regarding Red Listed and protected species as well as sensitive habitats. Any conservation recommendations and measures that aim to mitigate the impacts of this development will also be monitored by such a specialist during the operational phase of the development.
- The management of the KNP should be well informed of the proposed project and should allow monitoring of the section of the KNP neighboring the area to be properly inspected and monitored in terms of ecological status and possible negative impacts to biodiversity.

3. Description of Aspects of the Activity Covered by this Environmental Management Programme

3.1 Project Title

Basic Assessment Report for the proposed construction of a Waste Transfer Station in Matsulu Township, Mandela Park in Mbombela Local Municipality.

3.2 Project Description

The City of Mbombela Local Municipality (MLM) is proposing to establish a Waste Transfer Station at Matsulu Mandela Park within Matsulu Township (Figure 4.2-1). The site will temporarily receive, sort and store general waste before it is hauled to the Tekwane West Central Waste Disposal Site (CWDS). The proposed waste transfer site is located within Matsulu and was previously Farm Erf

312 which is 154 583.95 m² in size, but now the Post-impact evaluation Proposed Site is Erf 302 (50441.209 m² in size) and will accommodate waste from the Matsulu Township and handle an estimated 65 tonnes of general waste on a daily basis. The total development footprint area covered by the infrastructure including roads and parking areas will be 20218.940 m².

3.3 Project Scope

The project activity includes the receiving, sorting, temporarily storing of general waste and transportation, for its disposal at the Tekwane Disposal Site. The waste will be collected by municipal trucks from the households on a daily basis as per the municipal waste collection schedule for each area. The various streams of mixed general waste will be brought to the proposed Matsulu Waste Transfer facility, where it will be offloaded into the General Waste Sorting Area and sorted according to the different waste streams (Photo 4.3-1). The general waste will be sorted into recyclable, non-recyclable and organic waste. Each stream will be diverted to its appropriate area as per the standard operating procedures for the site. The non-recyclable waste will be compacted into the “walk in floors” containers, which will be covered before being hauled for disposal at the licensed Tekwane Disposal Site. The recyclable materials will be sorted into different classes of waste streams. The sorted recyclable materials will be transported to the area for packaging and transported to the Local Recycling Companies. A working relationship with local recycling companies will be established for delivery and for further processing, outside of the proposed site. Organic waste will be received, sorted and chipped into components for compost making, however, compost making will not be done at the site but transported to the relevant site that caters for compost making.

Matsulu township is located within the realms of MLM, Ehlanzeni District Municipality, Mpumalanga Province. It lies next to the N4 National Road 41 km east of Nelspruit (Mbombela) Central Business District (CBD). The project locality is shown in Appendix A1 and A2.

The current project area (Erf 312) falls in a municipal land zoned as Public Open Space and has existing and established household settlement, which has rendered it not viable for consideration as the proposed preferred site. Adjacent to the Matsulu Waste Treatment Plant, there is an informal dumping site as shown in Figure 4.2-1. In order for the Mbombela Local Municipality to formalise the waste management at Matsulu Township, as part of their implementation of the overarching Mbombela Integrated Waste Management Strategy (Box 4.3.1), they have adopted the approach of providing a licensed Waste Transfer Station

3.4 Waste Quantities

Estimated types of waste and list the estimated quantities expected to be managed daily are outlined below.

Hazardous waste	Non-hazardous waste	Total waste handled (tonnes per day)
N/A	General Waste	65
N/A	Building Rubble	7
N/A	Green Waste	9.5
N/A	Office Waste (Paper and Newspaper)	1.5
N/A	Metal	6
N/A	Cardboards	4
N/A	Food Residues	2

3.4.1 Recovery, Reuse, Recycling, treatment and disposal quantities:

Applicable waste types and quantities that are expected to be disposed of and salvaged annually are outlined below:

TYPES OF WASTE	MAIN SOURCE (NAME OF COMPANY)	QUANTITIES		ON-SITE RECOVERY REUSE RECYCLING TREATMENT OR DISPOSAL	OFFSITE RECOVERY REUSE RECYCLING TREATMENT OR DISPOSAL	OFFSITE DISPOSAL
		TONS/ MONTH	M ³ / MONTH	Method & location	Method location and contractor details	
General Waste	Matsulu Township	10.5	23.1	Temporary Storage	Disposed to Tekwane Landfill	
Builders Rubble	Matsulu Township	0	0	Temporary Storage	Disposed to Tekwane Landfill	
Green Waste	Matsulu Township	0	0	Temporary Storage	Disposed to Tekwane Landfill	
Office Waste	Matsulu Township	0	0	Temporary Storage	Disposed to Tekwane Landfill	

The activities that are expected during each of the project phases are indicated below.

3.5 Project Activities

The project seeks to receive various types of waste from Matsulu township and the anticipated waste streams are:

- General waste
- Builders rubble
- Green waste
- Office waste.

The quantities for each waste stream will be determined during the waste stream analysis study to be conducted.

The project activities are outlined as follows:

3.6.1 Activities at Planning and Design Phase

(a) Site selection

- Development of drawings
- Construction plans
- Consolidation of safety files and other regulatory operational manuals

(b) Mobilisation and site establishment

- Transporting equipment, materials and personnel to site
- Site clearing
- Set mobile office facility
- Install storage and ablution facilities

- Install waste disposal facilities
- Clearing of access points where necessary

(c) Auxiliary Services

- Portable water supply and storage tanks
- Diesel, petrol and HFO storage facility roads
- Office buildings, training centre, emergency services and cafeteria
- Workshops: electrical and mechanical
- Instrumentation and control
- Security offices
- Fire protection equipment

3.5.2 Activities at Construction Phase

- Portable water
 - Water tanks will be erected for storage of portable water.

- Stores
 - There will be a hydrocarbon store goods-returned storage area and a street works store. All these areas will be equipped with fire protection and emergency equipment.

- Parking areas
- Access roads and mine haul roads
- Electricity substation and network
- Boiler-making, vehicles, railway maintenance
- Washing and screening
- Conveyors
- Crushing plant installations

- Soil storage
 - All top soil will be stripped and stockpiled

- Surface water structures
 - All roads will be equipped with storm water control structures

- Designs of storm water systems
 - The management of storm water is important it limits erosion, therefore ensuring a sustainable solution. Storm water from external catchment will be diverted around the dirty catchment to allow uncontaminated water to flow back to the natural environment.
 - A Pollution Control Dam will be designed to accommodate the 1:50 year flood volume without spilling. In addition, the minimum freeboard for a residue disposal facility and return water dam should be at least 0,8m above full supply level.

3.5.3 Activities at Operational phase

- Receiving waste
- Offloading waste
- Sorting waste
- Compaction
- Loading and transporting
-

3.5.4 Activities at Decommissioning and rehabilitation Phase

- Demolition of certain structures
- Ripping and clarification of haul roads
- Dismantling of structures that will need to be removed
- De-establishment and site clean up
- Decommissioning and final rehabilitation

4 Roles and Responsibilities

The Professional Project Team is responsible for ensuring that all the EMP requirements are implemented. He/she may appoint a person who will assist in conducting monitoring audits during construction. The appointment will be in writing and the environmental responsibilities will be included in the key performance areas of the appointed personnel.

Personnel from Local Municipality:

MLM Municipal Manager - TBA

MLM Project Manager - (Chief Directorate: Environmental Affairs)

Directorate: Pollution And Waste Management) - Mr Lesiba Maluleke

MLM Environmental Control Officer - TBA

Personnel on site:

Waste facility Operator - TBA

Waste facility Contractor - TBA

Waste facility Environmental Officer - TBA

Waste facility Safety, Health and Environmental (SHE) Officer - TBA

Roles and Responsibilities for the Matsulu Waste Transfer Station Project

Applicant - MLM (Mbombela Local Municipality)

The MLM (Applicant) will be responsible for the overall environmental control on the project site during the construction, operation, rehabilitation and decommissioning phases. The MLM'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 Competent Authority;
- Notifying the Competent Authority of changes in the developments that result in significant environmental impacts;
- Notifying the Competent Authority within 30 days of change of ownership/Applicant;
- Notifying the Competent Authority 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 noncompliance through the MLM 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 Competent Authority within 30 days prior to construction, operation, rehabilitation and decommissioning activities commence;
- Notifying the Competent Authority in writing within 24 hours if any condition in the EA cannot be or is not adhered to; and

- Notifying the Competent Authority 14 days prior to commencement of the operational phase.

MLM Project Manager

The MLM 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 MLM (or its appointed representative). The responsibilities of the MLM 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.

Professional Project team

Civil /Structure/Design Engineers

The Engineer will:

- Enforce the environmental specification on site;
- Monitor compliance with the requirements of the specification;
- Assess the Contractor's environmental performance in consultation with the Environmental Officer from which a brief monthly statement of environmental performance is drawn up for record purposes and to be reported to project meetings; and
- Ensure the documentation, in conjunction with the Contractor, the state of the site prior to construction activities commencing. This documentation will be in the form of photographs or video record.

Waste Facility Operator

The Waste facility Operator / Site Manager's responsibilities include the following:

- Oversees the whole contract
- Employs people
- Signs contract
- Make sure everything gets delivered in time
- Procurement
- Ensure that the requirements as set in the EMP are adhered to;
- Direct the contractors whenever necessary to comply with the EMP conditions;
- The Site Manager/ ECO must attend site meetings where required to be able to report on, and respond to any environmental issues, and be issued with copies of minutes of such meetings;
- The Site Manager must obtain, examine and approve method statements where applicable;
- Advise the project team on environmental issues within the defined work areas;
- Collect and record all waste manifest data sheets where applicable;
- Recommend corrective action where there is non compliance with the EMP;
- Keep an up to date diary of site activities; and

- Compile an environmental report on completion of the construction phase. The Waste facility Operator/Site Manager has the authority to stop works if in his/her opinion there is a serious threat to, or impact on the natural and/or social environment as a result of the construction operations. This authority is to be limited to emergency situations where consultation with the applicant, project/ site manager and or contractor is not immediately possible. In all such work stoppage situations the Project/ Site Manager is to inform the applicant and contractor of the reasons for the stoppage as soon as possible.

Principal Contractor

Undertake Works in accordance with specifications

Responsible for subcontractors and suppliers

Site Supervisor

Responsibility for the site personnel and machinery on site

- Make sure work gets done
- Make sure machinery on site get used

Waste Facility line supervisors

Responsible for the execution of work (tasks)

- Make sure that tasks are completed on time

ECO & OHS Office

- Monitor compliance with the EMPr and OHS Plan
- It will be ensured that environmental compliance is adhered to.

Environmental Assistant/ Officer

- Ensuring compliance with all legislative and regulatory requirements

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 MLM and MLM 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;

- The ECO has the authority to stop works if in his opinion there is a serious threat to or impact on the environment as a result of the construction operations. This authority is to be limited to emergency situations where consultation with the Site and Safety manager, Project Manager or Applicant is not immediately available. In all such work stoppage situations the ECO is to inform the Site and Safety Manager, Project Manager and Applicant of the reasons for the stoppage as soon as possible.
- 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 Competent Authority 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 MLM is responsible for enforcement of the conditions of the EMPr. The Contractor and the Environmental Officer are accountable to the ECO for noncompliance with the EMPr. The ECO provides feedback to the MLM Project Manager who, in turn, reports to the MLM and I&APs, as required. Issues of non-compliance raised by the ECO must be taken up by the MLM Project Manager and resolved with the Contractor as per the conditions of his/her contract.

Waste facility Safety, Health and Environmental (SHE) Officer

The Safety, Health and Environmental Officer will:

- Be fully conversant with the EMPr;
- Be fully conversant with all relevant environmental legislation applicable to the project, and it will be ensured
- compliance with them;
- Be responsible for the day-to-day monitoring of EMPr and OHS plan
- Compilation of Method Statements together with the Waste facility Operator that will specify how potential environmental impacts in line with the requirements of the EMPr will be managed, and, where relevant environmental best practice and how they will practically it will be ensured that the objectives of the EMPr are achieved;

- Convey the contents of this EMPr to the construction site staff and discuss the contents in detail with the Waste facility Operator;
- Undertake regular and comprehensive inspection of the site and surrounding areas in order to monitor compliance with the EMPr;
- Take appropriate action if the specifications contained in the EMPr are not followed;
- Monitor and verify that environmental impacts are kept to a minimum, as far as possible;
- Order the removal from the construction site of any person(s) and/or equipment in contravention of the specifications of the EMPr;
- Report any non-compliance or remedial measures that need to be applied to the appropriate environmental authorities, in line with the requirements of the EMPr;
- Submitting a report at each site meeting which will document all incidents that have occurred during the period before the site meeting;
- Ensuring that the list of transgressions issued by the ECO is available on request; and
- Maintain an environmental register which keeps a record of all incidents which occur on the site during construction. These incidents include:
 - Public involvement / complaints.
 - Health and safety incidents.
 - Incidents involving hazardous materials stored on site.
 - Non-compliance incidents.

Clerk

- Filling of documents, data capturing and registers

Labour

- Responsible of doing work e.g day works team

Contractor(s)

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).

Community Liaison Officer

Liaison between employer and project steering committee or between employees and employer to make sure employee are treated fairly and understand their responsibility and own accountability to avoid losses.

Objectives

To ensure that:

- There is allocation of sufficient personnel and other resources to meet objectives and targets.
- Environmental Management System (EMS) procedures to stipulate equipment requirements and personnel requirements to Ensure that there is clearly defined roles and responsibilities.
- Compliance roles and responsibilities of environmental protection personnel to be clearly defined and incorporated into key performance areas as a comprehensive part of the performance management system.
- Accountability for achieving and maintaining compliance is set through formal appointments for any delegated environmental roles.

The EMPr specifies the minimum requirements to be implemented by the developer according to the scope of work and the scope of the environmental authorisation. This is done to reduce and manage the potential environmental impacts for sustainable environmental management practices. A guide for environmental monitoring throughout the construction and operational phases is provided. The EMPr is binding to any party which responsibility for the construction activities has been delegated to, until such time that the competent authority has been formally released the developer from its responsibilities in terms of this EMPr.

It is essential that the EMPr requirements be carefully studied, understood, implemented, and adhered to at all time. To simplify that the EMPr requirements, each aspect related to the EMPr, which needs to be independently addressed outside its associated activities has been addressed in the table below. Each action linked to the priority of when the specific action will be implemented.

4.2 Actions and Controls

4.2.1 Authorisations, Permits and Licences

- All necessary authorisations, permits and licences must be obtained by the Developer prior to the commencement of construction.

4.2.2 Appointment of contractor

- The developer must ensure that this EMPr forms part of any contractual agreements with a Contractor(s) and sub-contractors for the execution of the proposed project. The contractor must make adequate provision in their budgets for the implementation of the EMPr.
- The principal contractor (including sub-contractors and suppliers) must comply with the relevant provisions of the EMPr, applicable environmental legislation, by-laws and associated regulations promulgated in terms of these laws. Tender documents should include statements to include the use of local communities or local community organisation where possible in supplying services and labour to the construction activities.
- Tender documents should include statements to include the use of local communities or local community organisation where possible in supplying services and labour to the construction activities.

4.2.3 Preparation of Method Statements

- Method Statements must be submitted by the contractor to the SHE Officer and must be adhered to by the Contractor and project engineer. These relate to water and storm water management requirements, traffic requirements, solid waste management requirements, fuel storage and filling and dispensing of fuel (diesel and petrol), hydrocarbon spills, contaminated water treatment, the storage of hazardous materials, standard emergency procedures, and biohazard control;
- The ECO will monitor the implementation of the statements. All copies of the statements and plans must be submitted to the appointed ECO;
- A qualified ecologist must mark vegetation such as threatened/protected geophytes which are to be conserved or relocated prior to the Contractor commencing with clearing on site.

4.2.4 Appointment of ECO

- An Independent ECO must be appointed by the holder of the Environmental Authorisation (EA) at their cost to monitor the implementation of the EMPr;
- The nomination of the ECO must be given, in writing, at least fourteen days before the start of any work, clearly setting out reasons for the nomination, and with sufficient detail to enable the developer to make a decision. The developer will, within seven days of receiving the request, approve, reject or call for more information on the nomination;
- Once a nominated environmental auditor has been approved he/she will be the ECO and must undertake monthly site inspections and provide monthly audit reports for the duration of the construction and rehabilitation phases. Each audit report must contain the results of the full audit. These audit results report on whether the response to the audit item is favourable, unfavourable or not applicable. Not applicable answers are for those aspects of the construction that have not yet started or are not applicable to the contract being considered. Graphs must be produced for each stage of the EMPr; general requirements, requirements during construction and post construction activities. Each of the aspects within each stage is allocated a percentage score. The percentage score is the percentage of favourable items against the total number of applicable items. The higher the score, the better the compliance. Complete compliance will result in a 100% score.

4.2.5 Environmental Training and Awareness

It is important to Ensure that the contractor has the appropriate level of environmental awareness and competence to Ensure continued environmental due diligence and ongoing minimisation of environmental harm. Training needs should be identified based on the available and existing capacity of site personnel (including the contractors and sub-contractors) to undertake the required EMPr management actions and monitoring activities. It is vital that all personnel are adequately trained to perform their designated tasks to an acceptable standard.

Training will be done in a verbal format. The training will be a once-off event; however, the contractor should make provision for weekly training or Toolbox Talks. In addition to training, general environmental awareness must be fostered among the project's workforce to encourage the implementation of environmentally sound practices throughout its duration. This Ensures that environmental accidents are minimised and environmental compliance maximized.

The environmental training is aimed at:

- Promoting environmental awareness;
- Informing the contractor of all environmental procedures, policies and programmes applicable;

- Providing generic training on the implementation of environmental management specifications; and
- Providing job-specific environmental training in order to understand the key environmental features of the construction site and the surrounding environment.

The key objectives of the environmental training are as follows:

- Construction staff must be adequately educated by the ECO, and the SHE Officer, as to the provisions included in the EMPr and general environmentally friendly practice;
- The EA and EMPr forms part of the formal site induction for all contractors, sub-contractors and casual labourers, preferably in their native language. The induction training will, as a minimum, include the following:
 - The importance of conformance with all environmental policies;
 - The environmental impacts, actual or potential, of their work activities;
 - The environmental benefits of improved personal performance;
 - Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirement of the consultant's environmental management systems, including emergency preparedness and response requirements; and
 - The mitigation measures required to be implemented when carrying out their work activities.
- All contractors, sub-contractors and casual labourers must acknowledge their understanding of the EMPr and environmental responsibilities by signing an induction attendance record;
- The contractor is expected to have "tool box" talks. These talks must be in accordance with the risks and trends associated with the project. Proof of these talks must be kept on site.
- The contractor is expected to have "tool box" talks. These talks must be in accordance with the risks and trends associated with the project. Proof of these talks must be kept on site.
- **Environmental Measures, Actions and Controls**

This section indicates the actions required to either prevent and/or minimize the potential impacts on the environment that is associated with the project.

- **Responsibility**

This section indicates the party responsible for implementing the environmental measures and action plans laid out in the EMPr.

- **Monitoring Frequency**

This section indicates when the actions for that specific aspect must be implemented and/or monitored.

Mitigation Measures

5 Time Frames

The management measures will be implemented during the duration of the construction and operation of the site until closure as presented under Section 2.

Responsible personnel with respect to the roles highlighted under the management commitments in Section 2, Table 2.4.1 are outlined in Table 3.6.1.

Table 4.2-1: Responsibility and Timeframes for Implementing each of the Mitigation Measures

Activities	Responsibility	Time Frames and Phases of Implementation
<p>1.Planning and Design:</p> <ul style="list-style-type: none"> • Development of drawings • Construction plans • Consolidation of safety files and other regulatory operational • manuals <p>Mobilisation and site establishment</p> <ul style="list-style-type: none"> • Transporting equipment, materials and personnel to site • Site clearing • Set mobile office facility • Install storage and ablution facilities • Install waste disposal facilities • Clearing of access points where necessary <p>Auxiliary Services</p> <ul style="list-style-type: none"> • Portable water supply and storage tanks • Diesel, petrol and HFO storage facility roads • Office buildings, training centre, emergency services and cafeteria • Workshops: electrical and mechanical • Instrumentation and control • Security offices • Fire protection equipment 	<p>Professional project team, Principal Contractor, ECO and OHS Officer, SHE Officer, and Sub-Contractors and Suppliers</p>	<p>Construction, Operation and Decommissioning</p>
<p>2. Construction phase:</p> <ul style="list-style-type: none"> • Portable water <ul style="list-style-type: none"> ➢ Water tanks will be erected for storage of portable water. • Stores <ul style="list-style-type: none"> ➢ There will be a hydrocarbon store goods-returned storage area and a street works store. All these areas will be equipped with fire protection and emergency 	<p>Professional project team, Principal Contractor, ECO and OHS Officer, SHE Officer, and Sub-Contractors and Suppliers</p>	<p>Construction, Ongoing</p>

Activities	Responsibility	Time Frames and Phases of Implementation
<p>equipment.</p> <ul style="list-style-type: none"> • Parking areas • Access roads and mine haul roads • Electricity substation and network • Boiler-making, vehicles, railway maintenance • Washing and screening • Conveyors • Crushing plant installations • Soil storage ➤ All top soil will be stripped and stockpiled • Surface water structures ➤ All roads will be equipped with storm water control structures • Designs of storm water systems 		
<p>3. Operational Phase:</p> <ul style="list-style-type: none"> • Receiving waste • Offloading waste • Sorting waste • Compaction • Loading and transporting 	<p>Professional project team, Principal Contractor, ECO and OHS Officer, SHE Officer, and Sub-Contractors and Suppliers</p>	<p>Operation, Ongoing</p>
<p>4. Decommissioning Phase:</p> <ul style="list-style-type: none"> • Demolition of certain structures • Ripping and clarification of haul roads • Dismantling of structures that will need to be removed • De-establishment and site clean up • Decommissioning and final rehabilitation 	<p>Developer, Professional project team, Principal Contractor, and Sub-Contractors and Suppliers</p>	<p>Construction, Operation, Decommissioning</p>

5.2 Budget

Operational Budget will be used to implement all EMP commitments. A dedicated amount for the environmental control officer will be in the monthly allocations. The implementation of other aspects such as monitoring will also be included in the monthly allocations.

6 Performance Monitoring and Reporting

Performance Monitoring and Reporting			
<p>Responsibility</p>	<p>MLM Solid Waste Management Environmental compliance</p>	<p>Frequency/time frame Monthly</p>	<p>Until closure</p>

Objectives

To ensure that:

- (a) There is ongoing monitoring of all the commitments undertaken in the EMPr.
- (b) Assessment of performance is monitored and corrective actions are taken should there be identified deviations.
- (c) The applicant will conduct internal audits to check compliance of project activities with the approved EMPr. The site will be visited and any non-compliances will be addressed through development of corrective actions. Corrective actions will be assigned to responsible personnel who will then implement them. EMPr performance will be part of weekly project meetings.
- (d) All site personnel will be given a copy of the management measures committed to in this EMPr, to keep with them during the operational activities. Internal audits will be conducted on a weekly and monthly basis to check compliance of activities with the approved EMPr. During the internal audits, the site will be visited and any non-compliance identified will be addressed through development of corrective actions. The corrective actions will be assigned to site safety representative on site, who will then implement them. The site supervisor will follow-up on the corrective actions on a weekly basis and sign them off once satisfied that they have been implemented.
- (e) Develop environmental management monitoring committee which shall consist of Health and Safety Officers, Projects Managers and Environmental Liaison Officer. The committee will be part of the internal audit teams and be involved in the implementation of the management measures.

6.1 Environmental Auditor

An internal Environmental Auditor (EA) shall be appointed by MLM. The EA shall be commissioned to undertake an environmental audit on a yearly basis into perpetuity (or for as long as the site is used as a Waste Transfer Facility site). The yearly audits shall include:

- Undertaking site inspections to determine whether compliance with this operational EMPr;
- Compilation of annual audit reports;
- Identifying areas of non-compliance, and recommending measures to rectify these in consultation with the Local Authority.

MLM will conduct internal audits to check compliance of project activities with the approved EMPr. The site will be visited and any non-compliance will be addressed through development of corrective actions. The corrective actions will be assigned to responsible personnel who will then implement them. EMPr performance will be part of weekly project meetings.

All site personnel will be given a copy of the management measures committed to in this EMPr, to keep with them during the duration of the construction activities. Internal audits will be conducted on a weekly and monthly basis to check compliance with the approved EMPr. During the internal audits, the site will be visited and any non-compliance identified will be addressed through development of corrective actions. The corrective actions will be assigned to site safety representative on site, who will then implement them. The project/site engineer will follow-up on the corrective actions on a weekly basis and sign them off once satisfied that they have been implemented.

In addition to the above mentioned performance and monitoring commitments, MLM shall adopt the following strategies to Ensure that the commitments stipulated in this EMPr are adhered to:

1. Develop a procedure for ensuring that the company identifies and allocates human, technical and financial resources necessary to meet its environmental objectives and targets;
2. Review EMS procedures and ensure that human resources are allocated to set environmental management objectives;

3. Define roles and responsibilities and link these two key performance areas to Ensure that key performance areas of identified environmental responsible personnel to include environmental obligations;
4. Review complaints registers or other procedures to ensure that concerns concerning environmental performance and compliance raised by personnel are received and addressed;
5. Update environmental awareness plan annually and implement;
6. Focus training on means on enhancing ability of personnel to ensure compliance with environmental requirements;
7. Conduct environmental inductions for contractors and subcontractors;
8. Conduct environmental inductions for employees;

In addition, the following initiatives will be adhered to:

- New opportunities to be communicated to relevant affected parties through an agreed formal communication channel and concerns to be incorporated into feasibility decisions;
- Complaints registers to be utilised and reviewed and corrective actions done;
- Interested and affected parties (IAPs) concern to be incorporated into project implementation;
- Internal communication to be strengthened to support continual improvement.

6.2 Monitoring Plan

The monitoring programme to be implemented while the site is operational will involve:

- Annual environmental audits to be undertaken by an independent EA to ensure that the operational EMPr is being adhered to;
- Completion by the EA of annual audit reports which will be submitted to the DARDELEA.

The Monitoring Plan is presented in Table 6.2-1.

Table 6.2-1: Monitoring Plan

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
1. Legal Environmental Authorisation	<ul style="list-style-type: none"> • Non-legal compliance due to non-conformance to legal requirements as per the Regulations. 	<ul style="list-style-type: none"> • Waste Licence issued • Environmental Authorisation granted • Implementation of conditions with licence and Record of Decision. 	<ul style="list-style-type: none"> • MLM Project Manager • Site Manager • Development Contractor • MLM Environmental Health Officer 	<p>Waste Licence and Environmental Authority conditions and timelines to be adhered to.</p> <p>Bi-annually internal audits.</p> <p>Monthly reporting on licence conditions</p> <p>Annual external audits</p>
2. Soil erosion and water sedimentation due to poor site selection, site establishment & preparation.	<ul style="list-style-type: none"> • Potential soil loss and degradation due to soil compaction and loss of vegetation from trampling on vegetation. • Degradation and/or destruction of sensitive habitats such as the adjacent Protected Area (KNP) 	<ul style="list-style-type: none"> • Monitoring of eroded surfaces. • Monitoring of increased levels of sedimentation in the nearby Crocodile River. • Surface water quality parameters reports and trends. • Ground water quality parameters reports and trends. 	<ul style="list-style-type: none"> • ECO • Site Manager 	<p>Daily monitoring of site exposed soil surface.</p> <p>Repair all damaged paved areas especially after a flood or storm episode.</p> <p>Check all lining material for leaks and potential leakage.</p> <p>Ensure protection of the sensitive environments and habitats.</p> <p>Vegetation clearing on the site should take place only immediately prior to construction in order to minimise the time the soil is bare, thus minimising soil erosion, dust and visual impacts.</p> <p>Monitor the floristic diversity of the non-affected areas of the development as</p>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
				<p>well as areas directly adjacent – especially the area of the KNP directly adjacent to the proposed waste dumping and transfer site.</p> <p>Monitor populations of threatened or protected species in the study area and on neighboring properties / areas during all project phases.</p> <p>Monitor and manage the removal of any threatened or protected plant species.</p> <p>Monitor impacts and related mitigation measures regarding Red Listed and protected species as well as sensitive habitats.</p> <p>Monitor any conservation recommendations and measures that aim to mitigate the impacts of this development during the operational phase of the development.</p> <p>Inform the management of the KNP and should allow monitoring of the section of the KNP neighboring the area to be properly inspected and monitored in terms of ecological status and possible negative impacts to biodiversity.</p>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
<p>3. Eroded and disturbed soil surface due to establishment of site and installation of security fence.</p>	<ul style="list-style-type: none"> • Potential damage to top soil; siltation and compaction of soil. • Improper soil erosion controls could lead to sedimentation and affect surface water quality through surface run-off. • Increased level of dust from offloading of construction material. • Site must be secured to prevent theft of material and unauthorised access to the site. 	<ul style="list-style-type: none"> • Material stockpiling areas to be paved, lined and non-porous. • Materials inventory kept and updated daily. • Perimeter fence checked for damage and repairs to be attended to immediately. • Area around perimeter fence to be kept litter and waste free. 	<ul style="list-style-type: none"> • ECO • Site Manager 	<p>Monitoring of perimeter fence to be done daily on foot or vehicle patrol. Records of inspections conducted and corrective action taken to be kept for audits.</p> <p>Soil erosion and stormwater management measures will be implemented and adherence to EMPr will be ensured.</p> <p>Monitoring reports to be submitted weekly, monthly and annually for audits until closure of the site.</p> <p>Daily cleaning of paved areas and all site surfaces.</p> <p>Reporting will be done as follows: Monthly – Internal Data report Annually – Annual Status/Audit Report</p>
<p>4. Wind blown litter and waste pollution.</p>	<ul style="list-style-type: none"> • Potential contamination of soil surface, surface water and groundwater from windblown litter and unmanaged daily operational waste. 	<ul style="list-style-type: none"> • Site operational guidelines and Best practice implemented daily. • Waste Management protocols implemented. • Trucks and vehicles covered when entering and leaving the waste transfer 	<ul style="list-style-type: none"> • ECO • Site Manager 	<p>Daily monitoring of trucks and vehicles entering and leaving the site to be covered.</p> <p>Daily cleaning of site and site perimeter.</p> <p>Waste manifests for the site.</p> <p>Weekly reporting of waste management procedures and incidents.</p>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		facility. <ul style="list-style-type: none"> • No overflowing bins. • Waste storage does not exceed agreed timelines. 		Monthly reporting of amounts of waste and streams brought in, transported to recyclers and disposed at landfill site. Annual reports for audit reports.
5. Contaminated surface water runoff or stormwater run off.	<ul style="list-style-type: none"> • Potential surface water and groundwater contamination due to presence of oils, leakage, spillage, seepage and surface run-off. • Poor stormwater control results in soil erosion. 	<ul style="list-style-type: none"> • Chemical and bacteriological tests at designated monitoring points. Build up a database and graph the results. Compare the limits and take action for non-conformance. 	<ul style="list-style-type: none"> • Site Manager • ECO • MLM Environmental Health Officer 	All the data will be in a database from the proposed site and will comply with legal requirements. Water Monitoring Measurement and Guidelines will be adhered to. Using past information from the Crocodile River water quality surveys and tests, an analysis of the trends in water quality will be conducted by tracking contaminants of concerns as indicators of pollution. <ul style="list-style-type: none"> • Site-generated wastewater must be properly channeled through a well-designed system, and discharged to a local wastewater treatment plant, • Discharges must be tested before release into natural course, and only released if it meets the DWAF general limits for discharge into natural watercourses (DWAF, 2003); • Alternatively all site-

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
				<p>generated wastewater must be captured through a sump and contained in drums and sent to a hazardous waste disposal facility;</p> <p>Weekly monitoring and reporting on surface water quality. Monthly and quarterly reports will also be done.</p> <p>Daily visual inspection of infrastructure (pipes, channels, berms, bund wall, steel grid storm drain covers).</p> <p>Bi-weekly cleaning of infrastructure.</p> <p>Reporting will be done as follows: Monthly – Internal Data report Quarterly – Data Report to Authorities Annually – Annual Status/Audit Report</p>
<p>6. Odours from improperly stored or handled waste at the site for longer periods and dust from vehicular movement.</p>	<ul style="list-style-type: none"> Site Personnel's health and wellbeing as well as the neighbouring community health due to the airborne impurities and 	<ul style="list-style-type: none"> Human health – number of off-sick days by personnel. Use of proper Safety and Protection Equipment and Clothing. Daily use of Safety and Protection Equipment and take action for non-conformance. Air Quality – 	<ul style="list-style-type: none"> Site Manager ECO MLM Environmental Health Officer 	<p>All the data collected at site monitoring points to be summarised and graphed to indicate levels of dust and trends within the site and outside perimeter.</p> <p>Dust suppression records to be maintained for communication and audit purposes. Dust suppression to adhere to required amounts of water to avoid excess water and surface runoff</p>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	<p>dust generated at the site during waste offloading and loading into “walk-in floors” for compaction and transportation for disposal.</p>	<p>monitoring and testing of air quality parameters. Dust suppression schedule to be adhered to.</p>		<p>or soil erosion.</p> <p>Daily dust suppression monitored. Do not pose a risk to human health. To minimise dust, it is recommended that major working areas and access roads are paved, and that dust suppressants are used on other areas wherever necessary. The builders rubble processing plant in particular can create a lot of dust and the location of this plant relative to the surrounding facilities should be carefully Number of sick days logged in by site personnel as an indicator of health problems from the site. Regular medical checks to be conducted for personnel fitness and health.</p> <p>Air Quality reporting will be done monthly, quarterly and annually.</p> <p>Bi-weekly cleaning of infrastructure.</p> <p>Reporting will be done as follows:</p> <p>Weekly – Dust suppression schedule</p> <p>Monthly – Internal Data report</p> <p>Quarterly – Data Report to Authorities</p> <p>Annually – Annual Status/Audit Report</p>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
7. Increased levels of ambient noise within site and community	<ul style="list-style-type: none"> Potential noise pollution from the increased noise levels from the heavy vehicles and trucks operational during the day. 	<ul style="list-style-type: none"> Noise Pollution – monitoring of noise levels on a daily basis. Proper ear, eyes and nose and all other safety gear (helmet, gloves, dust mask, safety boots, ear plugs or protective gear) to be worn at all times. Take action of non-conformance. 	<ul style="list-style-type: none"> Site Manager ECO 	<p>Measurement of site noise levels against acceptable ambient noise levels to be done regularly at the site.</p> <p>Reporting to be done monthly for internal purposes.</p> <p>Annually for annual audits reporting.</p>
8. Water use (site operations)	<ul style="list-style-type: none"> Potential overuse of water due to unrestricted measures in place could lead to increased surface water run-off and soil erosion. 	<ul style="list-style-type: none"> Monitoring of water use for operational purposes. Strict conduct on water management measures will be implemented. Water conservation methods will be implemented and monitored. Monitor amount of water in litres used for each operational area. Ensure clean water and contaminated water is separated at all time and contaminated water is safely disposed of as per the prescribed procedure. Link to storm water management systems to 	<ul style="list-style-type: none"> ECO Site Manager 	<p>Measurement of water used and disposed of daily will be recorded.</p> <p>Monthly water use bill records to be analysed and graphed for monthly water use on the site.</p> <p>Water used for dust suppression to be recorded and graphed to analyse the trend on water use. Quantities to adhere to water use licence limits and conditions stated.</p> <p>Weekly – Dust suppression schedule</p> <p>Monthly – Internal Data report</p> <p>Quarterly – Data Report to Authorities</p> <p>Annually – Annual Status/Audit Report</p>

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
		ensure it functions properly and effectively.		

6.3 Reporting Procedures

Documentation

The following documentation must be kept on site in order to record compliance with the EMPr:

- An environmental file which includes:
 - Copy of the EMPr;
 - Copy of the Environmental Authorisation;
 - Copy of all other licences/permits;
 - Copy of all rehabilitation plans;
 - Copy of the rehabilitation interventions
 - Copy of relevant legislation;
 - Environmental Policy of the main contractor;
 - Environmental method statements compiled by the contractor;
 - Non-conformance reports;
 - Environmental register, which shall include:
 - Communications Register—including records of complaints, and, minutes and attendance registers of all environmental meetings;
 - Monitoring Results – including environmental monitoring reports, register of audits, Non-Conformance Reports (NCR);
 - Incident book – including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record
 - Waste manifests.
- Waste Documentation such as Sewerage Disposal Receipts;
- Material Safety Data Sheets for all hazardous substances;
- Dust suppression register;
- Water Quality Monitoring reports (if necessary);
- Written Corrective Action Instructions; and
- Notification of Emergencies and Incidents.

Environmental Register

The developer will put in place an environmental register. The contractor will ensure that the following information is recorded for all complaints/incidents:

- Nature of complaint/incident;
- Causes of complaint/incident;
- Party/parties responsible for causing complaint/incident;
- Immediate actions undertaken to stop/reduce/contain the causes of the complaint/incident;

- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint/incident;
- Timeframes and the parties responsible for the implementation of the corrective or remedial actions;
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented;
- Copies of all correspondence received regarding complaints/incidents.

The above records will form an integral part of the contractors' records. These records will be kept with the EMPr, and will be made available for scrutiny if so requested by the developer.

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 issued by the ECO to the contractor in writing. Preceding the issuing of an NCR, the contractor must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of a NCR.

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 to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account.
- Agreed timeframe by which the actions documented in the NCR must be carried out.
- ECO should verify that the agreed actions have taken place by the agreed completion date, when completed satisfactorily; the ECO and contractor should sign the close-out portion of the Non-Conformance Form (NCF) and file it with the contract documentation.

Environmental Emergency Response

The contractor's environmental emergency procedures must Ensure appropriate responses to unexpected/accidental actions/incidents that could cause environmental impacts. Such incidents may include:

- Accidental discharges to water (i.e. into the watercourse) 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 (EERP) is separate to the Health and Safety Plan as it is aimed at responding specifically 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 (i.e. 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 / on-site fire detail, 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 and their sub-contractor(s) must comply with the environmental emergency preparedness and incident and accident-reporting requirements as per the relevant legal requirements.

Method Statements

It is a statutory requirement to ensure the wellbeing of employees and the environment. To allow the mitigation measures in this document to be implemented, task-specific method statements should be developed for each set of tasks.

A method statement details how and when a process will be carried out, detailing possible dangers/risks, and the methods of control required.

- Type of construction activity;
- Timing and location of the activity;
- Construction procedures;
- Materials and equipment to be used;
- Transportation of the equipment to/from site;
- How equipment/material will be moved while on site;
- Location and extent of construction site office and storage areas;
- Identification of impacts that might result from the construction activity;
- Methodology and/or specifications for impact prevention/containment;
- Methodology 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.

As a minimum the following method statements will be required to be generated:

- Bunding;
- Blasting;
- Construction site and office/yard establishment;
- Cement mixing / concrete batching/bentonite mixing;

- Contaminated water;
- Dust;
- Environmental awareness course(s);
- Environmental monitoring;
- Erosion control;
- Fire, hazardous and/or poisonous substances;
- Fuels and fuel spills (may form part of the item above);
- Storage, handling and decanting of diesel (may form part of the item above);
- Personnel, public and animal safety;
- Rehabilitation of modified environment(s);
- Solid and liquid waste management;
- Sources of materials (including MSDSs);
- Top-soil management; and
- Wash areas.

Public Communication and Liaison with I&APs

The developer will ensure that the adjacent landowners are informed and updated throughout the construction phases.

Sufficient signage should be erected around the site (including at the entrance), informing the public of the construction activities taking place. The signboards should include the following information:

- The name of the contractor.
- The name and contact details of the site representative to be contacted in the event of emergencies or complaint registration.

Annexure 1: Babalwa Fatyi CV

Annexure 2: Company Profile