



# **FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE BOIKARABELO 132 KV POWER LINE**

**LEDJADJA COAL (PTY) LTD**



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Digby Wells & Associates (Pty) Ltd. Co. Reg. No. 1999/05985/07. Fern Isle, Section 10, 359 Pretoria Ave Randburg Private Bag X10046, Randburg, 2125, South Africa

Tel: +27 11 789 9495, Fax: +27 11 789 9498, [info@digbywells.com](mailto:info@digbywells.com), [www.digbywells.com](http://www.digbywells.com)

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Directors: A Sing\*, AR Wilke, LF Koeslag, PD Tanner (British)\*, AJ Reynolds (Chairman) (British)\*, J Leaver\*, GE Trusler (C.E.O)



\*Non-Executive



This document has been prepared by **Digby Wells Environmental**.

**Report Title:** ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE  
BOIKARABELO 132 KV POWER LINE

**Project Number:** LED1873

Name	Responsibility	Signature	Date
Louise van den Berg-Nicolai	EAP Report compiler		29 November 2012
Riaan Swemmer	Peer review		29 November 2012

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## EXECUTIVE SUMMARY

Digby Wells Environmental (Digby Wells) was appointed as independent Environmental Assessment Practitioner (EAP) to conduct the Basic Assessment Report (BAR) process for the proposed Boikarabelo 132 KV power line and associated activities in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

This Final Environmental Management Programme (EMPr) is based on the outcomes of the BAR process that was undertaken for the proposed development of the 132 KV power line.

Based on the nature and extent of the proposed project and the understanding of the significance of anticipated impacts that will be experienced, the EAP is of the opinion that the predicted impacts can be mitigated to an acceptable level. The management and mitigation measures that were recommended to mitigate impacts to the environmental, socio-economic and heritage environment to an acceptable level are described systematically in this EMP.

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## **1 INTRODUCTION**

Digby Wells Environmental (Digby Wells) has been appointed by Ledjadja Coal (Pty) Ltd as independent Environmental Assessment Practitioner (EAP) to compile the Environmental Management Programme (EMPr) for the proposed 132 KV power line and associated activities in accordance with the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA).

The Boikarabelo Power Line Project is to be developed by Ledjadja Coal (Pty) Ltd (Ledjadja Coal) on the farms Kruishout 271 LQ, Bitterfontein 272 LQ, Kamiesbult 291 LQ, Groot-Zwart-Bult 290 LQ, Steenbokpan 295 LQ and Vangpan 294 LQ. These farms are situated north the town of Lephalale, in close proximity to Steenbokpan town which lies in the Waterberg District Municipality of the Limpopo Province.

### **1.1 Project Overview**

Ledjadja Coal has received a 30 MVA power allocation from Eskom for the operation of the Boikarabelo Coal Mine. Ledjadja Coal therefore proposes to construct a 132 KV line from the Eskom substation located on portion 2 of the farm Vangpan 294 LQ to the Boikarabelo Coal Mine substation located on the farm Kruishout 271 LQ. The proposed power line will be constructed within the Boikarabelo railway line servitude and therefore will run adjacent to the proposed railway line, except for a small section which will run along the farm boundary of Kamiesbult 291 LQ and Groot-Zwart-Bult 290 LQ (Plan 2: Appendix A). The project area falls within the Lephalale Local Municipality, Limpopo Province.

The power line will consist of steel monopole structures with a height of 21 m and the power line will cover a distance of 20.5 km. The poles will be supported by a soil-cement back fill. Designs of the power line together with the rail infrastructure have been included in Appendix C

The development of the proposed power line will allow for the operation of the first phase of the Boikarabelo Coal Mine.

The following activities will be undertaken as part of the proposed project:

#### **1.1.1 Construction Phase**

The Construction EMPr provides specifications that the Contractors shall adhere to, in order to minimise adverse environmental impacts and optimise opportunities associated with construction activities. It also outlines the roles and responsibilities of Ledjadja Coal, the Environmental Control Officer (ECO), the Contractor and the Project Manager which comprise the formal Environmental Management team.

The EMP shall form the Environmental Specification so that all parties are aware of their environmental responsibilities during construction activities.

In the event of discrepancy with part or parts of the standard specifications or project specifications, this section shall take precedence.

Construction activities of this project include:

- Clearing of 4 m servitude for the power line development;
- Development of foundations for the monopoles;
- Assemble and erection of monopoles;
- Conductor stringing;
- Final inspection of the power line; and
- Rehabilitation of disturbed areas.

### **1.1.2 Operational Phase**

The Construction EMPr provides specifications that Ledjadja Coal's environmental management project team as well as the Contractors shall adhere to, in order to minimise adverse environmental impacts and optimise opportunities associated with operation activities.

The 132 KV power line will require maintenance throughout the operational life of the power line. The power line will be serviced from the same access road utilized for the railway line and farm boundary roads.

## **1.2 Environmental Principles**

The following principles should be considered at all times during the pre-construction and construction phase activities:

- The environment is considered to be composed of both biophysical and social components.
- Construction is a disruptive activity and all due consideration must be given to the environment, including the social environment, during the execution of this project to minimise the impact on affected parties.
- Minimisation of areas disturbed by construction activities (i.e. the footprint of the construction area) should minimise many of the construction related environmental impacts of the project and reduce rehabilitation requirements and costs.
- As minimum requirements, all relevant standards relating to international, national, provincial and local legislation, as applicable, will be adhered to. This includes requirements relating to waste emissions (e.g. hazardous, airborne, liquid and solid), waste disposal practices, noise regulations, road traffic ordinances, etc.
- The environment is held in public trust for the benefit of people, due care must therefore be exercised to ensure that the rights of others with respect to its use are respected. This requires that a risk averse and cautious approach to the management of activities associated with the project be adopted at all times.

This EMPr should be made binding and enforceable on all the parties involved in the development of the proposed project, including the project applicant and contractors at the different operational management levels.

### 1.3 Purpose for this Report

An Environmental Management Programme (EMPr) is an environmental management tool that is implemented with the objective of mitigating the undue or reasonably avoidable adverse impacts associated with the development of a project and to enhance any potential positive impacts that could be realised due to the development of a project.

This final EMPr was based on the outcomes of the EIA process that was undertaken for the proposed development of a 132 KV power line. Based on the nature and extent of the proposed project and the understanding of the significance of anticipated impacts that will be experienced, the EAP is of the opinion that the predicted impacts can be mitigated to an acceptable level. A number of potentially problematic issues have been avoided by the choice of the site on which to place the project and also the placement of infrastructure on the chosen site has minimised a number of the environmental impacts. The management and mitigation measures that were recommended to mitigate impacts to the environmental, socio-economic and heritage environment to an acceptable level are thus systematically addressed in the EMPr.

The specific objectives of this report are to:

- Define environmental management objectives to achieve an acceptable environmental standard and long-term sustainability of the proposed project;
- Outline mitigation measures and environmental specifications that will be required to be implemented during the construction, operational and decommissioning phases of the proposed project to realise the environmental management objectives;
- Formulate plans to manage specific environmental features that are known to be significantly affected during project implementation as a precautionary measure;
- Propose mechanisms to monitor the implementation of the mitigation measures; and
- Formulate plans that can be implemented in response to unforeseen or emergency events during project implementation.

### 1.4 Structure

This EMPr report is structured so as to provide guidance during the following project phases:

- Planning and design of the Power line.
- Construction of the Power line.
- Operation and maintenance of the Power line (i.e. the lifetime or duration of the project).



The decommissioning of the project is not specifically addressed here, although provisions for the formal amendment or modification of the EMP are included in Section 5 of this report.

## **2 RESPONSIBILITY OF IMPLEMENTING THE EMP**

### **2.1 Organisational Commitment**

The success of an EMP is dependent upon the commitment of the organisation, at all levels, to environmental excellence). Commitment to structured and effective EMPs will benefit both the organisations' business success and the community in which it operates. This commitment requires that the organisation provide the necessary resources for employee training, reference material and reporting and response procedures.

The manager of the company shall be held responsible and accountable for health and safety of personnel while on duty as well as the environmental impacts caused by project activities. The competence of the work force will be ensured through selection, training and awareness in health, safety and environmental matters. Continual evaluation measures must be implemented to ensure that performances with regard to social, health and well-being are improved and environmental management is effectively implemented throughout the lifespan of the proposed projects. Regular reviews of the company's performance are necessary during and after operations to ensure that procedures are appropriate and to ensure the desired environmental outcomes are being achieved.

### **2.2 Management Areas and Responsibility**

The overall management responsibility for the implementation of the EMP will rest with the Environmental Manager of Ledjadja Coal during construction, operation and closure. The Environmental Manager will be responsible for ensuring that all stakeholders understand and implement the plan. The Environmental Manager will also be responsible for ensuring that the plan remains effective and relevant through measurement and monitoring and adapting the plan where necessary to achieve its objectives. Although Ledjadja Coal will ultimately be responsible for environmental management, it will also be the responsibility of all contractors to adhere to the plan. Specific requirements for environmental management relevant to their areas of operation should be detailed in their respective contracts. The management actions that will be the responsibility of the Environmental Manager include:

- Overview of EMP implementation;
- Ensure that environmental monitoring, recording and reporting are conducted;
- Adapting the EMP where required;
- Develop and implement environmental training and awareness plans, including protected species awareness; and
- Conduct internal Environmental Audits.

EMPs provide an essential tool for ensuring that the mitigation of negative impacts and enhancement of positive impacts is carried out effectively during the project life-cycle. The

following tables therefore provides a summary of the potential mitigation measures that would be required for the potential impacts anticipated in the construction, operational and decommissioning phases for the proposed transmission line project.

## **2.3 Contractors**

The competence of the construction and operational workforce will be ensured through Ledjadja Coal's tender process, as well as efficient selection, training, awareness and the effective implementation of applicable health and safety policies. The tendering requirements for potential contractors should be read in conjunction with the EMPr. Continual evaluation measures must be implemented to ensure that performances with regard to social, health and well-being are improved and environmental management is effectively implemented throughout the lifespan of the development. Regular reviews of the contractors' performance and Environmental Audits are necessary during and after the construction phase to ensure that procedures are appropriate and to ensure the desired environmental outcomes are being achieved.

## **2.4 Environmental Officer**

Ledjadja Coal will appoint an internal Environmental Officer (EO) will be employed for the proposed project. The EO would be responsible for ensuring that all stakeholders understand and implement the EMP. The EO will also be responsible for ensuring that the plan remains effective and relevant. Specific requirements for environmental management relative to their areas of construction and subsequent operation will be detailed in their respective contracts. The management actions that will be the responsibility of the EO are summarised below:

- Overview of EMP implementation;
- Ensure that environmental monitoring, recording and reporting are conducted;
- Develop and implement environmental training and awareness plans; and
- Conduct internal Environmental Audits.

## **2.5 The Project Manager**

The PM is required to:

- Be familiar with the contents of the EMP.
- Ensure that the Contractor complies with the specifications of the design plan, (which incorporates environmental issues).
- Communicate to the Contractor the advice of the EO and the contents of the audit reports and issue site instructions giving effect to the requirements where applicable.

- Where no specific item is provided in the Schedule of Quantities for the actions recommended by the ECO, costing of measures should be undertaken before issuing site instructions.
- Communicate to the ECO, at least 10 working days in advance, any proposed actions, which may have negative impacts on the environment.
- Designate all working areas.
- Communicate to the EO any infringements of the Environmental Specifications and accompany the EO during site inspections.
- Discuss with the ECO the application of any penalties and other possible enforcement measures when necessary.
- Maintain a Complaints Register, record complaints from the public and communicate these to the Developer and EO.
- Facilitate communication between all role-players in the interest of effective Environmental Management.
- Monitor the compliance of the Contractor through the any audit reports.
- Allow for environmental protection works within the project budget.
- Determine the imposition of penalties for infringement of the Environmental Specifications.

## 2.6 Communication and Co-ordination

It is in the best interest of environmental management that a coordinated effort between all responsible parties be established. Open lines of communication at all times are therefore encouraged.

With open communication the role of the EO should be a positive one - aimed at being proactive in preventing problems - rather than a negative "policing" role when negative impacts have already occurred.

All agreements reached shall be documented in writing and no verbal agreements should be made.

## 3 ENVIRONMENTAL TRAINING AND AWARENESS PLAN

The purpose of an Environmental Training and Awareness Plan (ETAP) is to outline the methodology that will be used to inform employees of any environmental impacts which may result from their work and the manner in which the impacts must be dealt with in order to avoid pollution to or the degradation of the environment.

### 3.1 Responsibilities

Local contractors will be used during the construction and operational phases, where possible. People receiving contracts as a result of this project will be responsible for training and skills transfer to local labour and will be expected to present training plans to

management and the EO. Management will be responsible for ensuring that the plans are adequate and for the monitoring of the effectiveness of the training.

### **3.2 Timeframe**

All construction workers and their supervisors will undergo environmental awareness training prior to working at the proposed project site. Refresher courses will be held at suitable intervals. New contract staff and new employees on site will also be required to undergo training.

### **3.3 Training requirements**

The ETAP will incorporate training on the following components:

- The social and environmental context within which the 132KV line will be constructed;
- The risks associated with the activities which workers and supervisors will be responsible for and the associated mitigation measures;
- The relevant procedures and protocols to be followed; and
- The roles and responsibilities for implementing mitigation measures.

### **3.4 Performance management**

The effectiveness of the environmental management training and awareness building interventions will be evaluated by:

- The performance as recorded by the environmental audits (conducted by an independent Environmental Control Officer) aimed at evaluating the environmental awareness of employees directly, and
- Analysing the root causes of environmental incidents, including non-conformance to legal requirements, to determine which incidents were caused by a lack of environmental awareness and training.

## **4 ENVIRONMENTAL MANAGEMENT PROGRAMME**

The purpose of this section is to define the environmental objectives for each phase of the proposed project. The action plans that are required to achieve these objectives were compiled within the context of activities that could result in potential impacts to the biophysical, socio-economic and heritage environment.

These action plans are presented in tabular format to easily present the requirement for implementation of mitigation measures, as shown in Table 1.

**Table 1: Structure of environmental management implementation plans**

<b>ENVIRONMENTAL ASPECT</b>	
<b>PHASE OF PROJECT</b>	
<b>Objective</b>	Description of the objective, which is necessary in order to meet the overall goals; these take into account the findings of the environmental impact assessment specialist studies.
<b>Mitigation/ Management Measure</b>	The management actions refer to the required and practical actions aimed at achieving management objectives and targets.
<b>Frequency of Mitigation</b>	The regularity at which mitigation/ management measures should be performed to meet the desired project objectives.
<b>Recommended Action Plans</b>	The actions, tools or methods that should be implemented to evaluate whether management actions are being implementing and whether the desired objective is being achieved.
<b>Responsible Person</b>	The individual(s) responsible for ensuring that the desired objective are being achieved, and project targets are met.

The tables and action plans were also compiled to assess the potential impacts associated with the construction phase (red) and operational phase (green) of the project activities on the receiving environment.

<b>CONSTRUCTION PHASE</b>
<b>OPERATIONAL PHASE</b>

It should, however, be noted that, as detailed in the main EIA Report, the most significant impacts are anticipated during the construction phase.

A crucial recommended action plan across both project phases is that of training and awareness. Responsible persons should ensure that all site personnel have a basic level of environmental awareness training. The Contractor must monitor the performance of construction workers to ensure that the points relayed during their introduction have been properly understood and are being followed. If necessary, the EO and / or a translator should be called to the site to further explain aspects of environmental or social behaviour that are unclear. Toolbox talks are recommended which include an environmental component.

**Table 2: Construction phase implementation plan –per environmental aspect**

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
SOIL				
To minimise loss of the soil resources to support existing land use and land capability.	Traffic over project areas that have not been stripped of topsoil should be minimised.	During delivery of building material (Construction phase).	Ensuring that an appropriate surveillance programme for the regular monitoring of soil quality is implemented.	Environmental officer and engineer
To minimise compaction of soils during site preparation activities, including soil handling, stockpiling and vehicle use.	Vehicles and machinery should stay within demarcated areas to prevent unnecessary compaction of soil.	On-going		
To prevent soil contamination due to spillage of hydrocarbons or wastes.	Vehicles should be serviced and checked for leaks on a daily basis to minimise spillage of hydrocarbon contaminants during the construction phase.		Spillage should be managed through an emergency spill response plan.	Contractor
			The servicing of vehicles is to take place off site at an area constructed for such.	

### CONSTRUCTION PHASE

Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
	All waste products must be managed according to a waste management plan.		Implementation of a spill management plan.	
	Spillage should be managed through an emergency spill response plan. A hydrocarbon spill kit should be kept on site.		A hydrocarbon spill kit should be kept on site.	
	Drip trays should be used to contain leakages from machinery.	Daily	Appropriate waste management strategies should be adhered to at all times.	
	Contaminated soil should be removed and handled as hazardous waste.		The Contractor shall supply waste collection bins where such is not available and all solid waste collected shall be disposed of at a municipal registered landfill.	
	Equipment should be serviced on a regular basis.		The disposal of waste shall be in accordance with all relevant legislation. Under no circumstances may solid waste be burnt on site.	

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
To minimise soil erosion by wind and water.	Limited vegetation should be removed.	During construction phase		Environmental Officer
	Construction should take place during the dry season to prevent erosion from rain water.			
	Limited vegetation should be removed.		All erosion control mechanisms need to be regularly maintained.	
To prevent the loss of soil structure through the mixing of topsoil and subsoil.	The Contractor shall ensure that all work is undertaken in a manner which minimises the impact on vegetation outside the immediate area of the works.	Construction Phase	Care must be taken not to mix topsoil and subsoil during stripping.	Contractor
To prevent the loss of soil structure through compaction of soil.	Vehicles and machinery should stay within demarcated areas to prevent unnecessary compaction of soil.	On-going	Clear demarcation of servitude such as a fenced area	
	Soils compacted during the construction of the power line should be deeply ripped to loosen			



CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
	compacted layers and re-graded to even running levels. Topsoil should be spread over landscaped areas.			
To prevent soil contamination from ablution facilities on site.	Waste from ablution facilities should be collected on a weekly basis. Spillages should be cleaned up immediately	Weekly	Contractor must have schedule in place for the emptying of temporary ablution facilities	Contractor
	Contaminated soil must be contained and disposed of off-site at an approved landfill site.		Cement, concrete and chemicals must be mixed on an impermeable surface and provisions should be made to contain spillages or overflows into the soil.	
NOISE				
To minimise noise from the construction activities.	Earthmoving should be limited to day light hours.	On-going	A construction schedule must be drafted and be available to surrounding land owners.	Contractor
	The construction workforce should be made aware of the risk of nuisance noise due to their presence in the area and a Code of		A grievance mechanism must be in place prior to construction.	

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
	Conduct implemented to reduce general levels of noise. The work force must be restricted to the demarcated area			
	Construction machinery and vehicles must be serviced on a regular basis to ensure noise suppression mechanisms are effective e.g. installing exhaust mufflers.		Noise levels must be kept within acceptable limits. All noise and sounds generated must adhere to SABS 0103 specifications for maximum allowable noise levels for residential areas. No pure tone sirens or hooters may be utilised except where required in terms of SABS standards or in emergencies.	
	Switch off equipment when not in use.			
	Noisy activities to take place during allocated construction hours only as per section 25 of the Noise Control Regulations of the Environment Conservation Act, 1989 (Act No. 73 of 1989).			

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
AIR QUALITY				
To minimise creation of dust and keep dust fallout within legislative limits.	Retention of vegetation where possible will reduce dust travel.	Daily	Dust monitoring plan must be implemented prior to construction.	Environmental Officer
To minimise the risk of air pollution from fugitive dust caused by vehicle and machinery movement and the handling of materials.	Excavations and other clearing activities must only be done during agreed working times and permitting weather conditions to avoid drifting of sand and dust into neighbouring areas.	Construction Phase	The Contractor shall be responsible for dust control on site to ensure no nuisance is caused to the neighbouring Communities.	
	Damping down of un-surfaced and un-vegetated areas during dusty periods is required.	On-going	Any complaints or claims emanating from the lack of dust control shall be attended to immediately by the Contractor.	Contractor

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
<b>VISUAL</b>				
To keep as much of the vegetation as possible to act as a screen.	Only the minimum amount of vegetation that is required for the servitude and the substation area should be cleared. An effort should be made to ensure that no additional vegetation is cleared.	During Construction Phase	Delineate servitude areas and define which trees /clumps of vegetation are absolutely necessary to be cleared.	Contractor
<b>SOCIO-ECONOMIC</b>				
To enhance positive impact associated with the use of contractors to undertake maintenance and construction activities.	<p>Local contractors should be given the opportunity to undertake the earthmoving activities.</p> <p>A complaints register should be kept on site. Details of complaints should be incorporated into the audits as part of the monitoring process. This register is to be tabled during monthly site meetings.</p>	Throughout the lifespan of the project –when contractor is appointed	Implement a Local Labour and Workforce Plan	Project Manager

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
HERITAGE RESOURCES				
To minimise impacts on the cultural landscape.	Should any archaeological or paleontological remains be exposed during operations, work on the area where the artefacts were found must cease immediately and the appropriate specialist will be notified as soon as possible.	Construction Phase	The contractor must ensure that his workforce is aware of the necessity of reporting any possible historical or archaeological finds to the EO so that appropriate action can be taken.	Contractor and EO
	Recommendations for positioning of the power line and associated infrastructure were made during the site layout design process. Activities should therefore be restricted to the project development footprint to reduce visual impacts.			

CONSTRUCTION PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
GENERAL				
To ensure all measures are taken for fire prevention.	<p>“No-smoking” signs to be placed in areas used for storage of oil and fuel.</p> <p>All flammable substances must be stored in dry areas which do not pose an ignition risk.</p> <p>No open fires are to be allowed on site.</p> <p>Basic fire fighting equipment shall be readily available on site.</p> <p>Employees shall be made aware of the procedures in the event of a fire.</p> <p>All cooking shall be done in demarcated areas that are safe in terms of runaway or uncontrolled fires.</p>		<p>A fire officer is to be appointed by the contractor.</p> <p>The Contractor shall have operational fire-fighting equipment available on site at all times. The level of fire fighting equipment must be assessed and evaluated thorough a typical risk assessment process.</p>	Contractor and Safety Officer
To minimise disruption to landowners	All construction workers shall in no way be a nuisance to nearby	On-going	Construction schedule must be developed and distributed to the all	Environmental Officer, Project

### CONSTRUCTION PHASE

Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
	<p>residents. Any complaints received will be addressed and appropriate action will be undertaken.</p> <p>The Contractor shall give at least seven days' notice to the residents in the vicinity of the construction activities of his intention to begin construction activities in their area.</p> <p>The Contractor shall ensure that access to property is not unreasonably disrupted.</p> <p>A grievance mechanism must be in place prior to construction.</p>		<p>directly affected landowners at least one month prior to construction.</p> <p>A grievance mechanism must be in place prior to construction.</p>	Manager and Contractor

**Table 3: Operational phase implementation plan –per environmental aspect**

OPERATIONAL PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
GENERAL FOR OVERALL MOINTANENCE				
To minimise loss of the soil resources.	Maintenance vehicles must only utilise existing roads. Where necessary gravel roads must have water run off diversions. Roads must be maintained to ensure that users are not required to make diversions due to poor road surfaces.	During operational phase.	Service road maintenance schedule should be put in place.	Environmental Officer and Engineer



OPERATIONAL PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
To minimise degradation of the surrounding environment.	<p>All waste generated during routine maintenance must be removed off site and managed as part of the Boikarabelo Coal Mine, waste management system.</p> <p>General waste shall be recycled where possible or disposed of at an appropriately licensed landfill.</p>	During maintenance activities	<p>All employees must be trained in the Boikarabelo Coal Mine's waste management system. Routine environmental inspections of the servitude should be scheduled with maintenance schedules.</p> <p>Waste collection must be monitored on a regular basis.</p>	

OPERATIONAL PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
To ensure there is no environmental contamination through poor hydrocarbon management.	Gas cooled transformers should be used if required to reduce the potential of transformer oil leaks. In the event that oil transformers are utilised, an oil leaks are experienced, all contaminated soil must be removed of site and managed in accordance to the Boikarabelo Coal Mine waste management plan, where the soil will go through be bioremediation.	When required through operation	Regular inspection of the power line must take place to monitor its operational status.  Hazardous waste (including hydrocarbons) shall be stored and disposed of separately.	
To ensure continued good relations with landowners.	For the areas of the power line which does not fall within the railway servitude, landowners must be consulted at least a week prior to maintenance.	On-going	The surrounding community should be encouraged to report any unexpected faults or failures to Ledjadja Coal as soon as possible.	Engineer
	Closing gates and general respect for property.			

OPERATIONAL PHASE				
Objectives	Mitigation/ Management Measure	Frequency of Mitigation	Recommended Action Plans	Responsible Person
	Boikarabelo Coal Mine's maintenance personnel should be in possession of the required identification documents when undertaking maintenance work.		<p>An incidents/ complaints register must be maintained, in which any complaints from the community must be logged. Complaints must be investigated and, if appropriate, acted upon.</p> <p>Sound servitude management measures should be implemented and monitored on an on-going basis.</p>	

## **5 AMENDMENTS**

### **5.1 Construction EMP**

The Construction EMP may be amended and updated according to the conditions of the Environmental Authorisation and once the method statements have been confirmed and approved by the PM and ECO. Any proposed amendments to the Construction EMP, as may be identified by the Contractor, must be confirmed with the ECO and Project manager. Amendments proposed by the ECO or Project manager must be confirmed with the Contractor. All proposed amendments must be discussed with the Lephalale Regional Office of DEA prior to implementation, and a formal application for amendment lodged where required.

### **5.2 Operational EMP**

The Operational Phase EMP may be reviewed, amended and updated during the lifetime of the project. Such review, amendment or updating may be initiated by the DEA, Ledjadja Coal or any combination of these parties. Proposed amendments or updates to the Operational Phase EMP may only be implemented with the written approval of the DEA or such responsible environmental authority as may be designated in terms of prevailing environmental legislation.

## **6 CONCLUSION**

This final EMPr was based on the outcomes of the BAR process that was undertaken for the proposed development of the proposed 132 KV power line.

Based on the nature and extent of the proposed project and the understanding of the significance of anticipated impacts that will be experienced, the EAP is of the opinion that the predicted impacts can be mitigated to an acceptable level. The management and mitigation measures that were recommended to mitigate impacts to the environmental, socio-economic and heritage environment to an acceptable level were systematically addressed in this EMP.

The EMPr is a dynamic document, which must be updated when required. It is considered critical that this EMPr be updated to include site-specific information and specifications following the final walk-through survey by specialists following the negotiation process and surveying of the power line. This will ensure that the construction and operation activities are planned and implemented taking sensitive environmental features into account.