Eskom Holdings (SOC) Ltd
-Gauteng Operations Unit

ENVIRONMENTAL MANAGEMENT PROGRAMME

FOR THE PROPOSED DEVELOPMENT OF A 132 KILOVOLT POWER LINE SERVITUDE TEE OFF FROM ELIM-TARLTON LINE TO WOLVEKRANS SUBSTATION, MOGALE LOCAL MUNICIPALITY, GAUTENG.

DEA Ref: 14/12/16/3/3/1/1770
GIBB REF: J35566

ORIGINAL
June 2017

GIBB
ENGINEERING & ARCHITECTURE
People • Expertise • Excellence

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED DEVELOPMENT OF A 132 KILOVOLT POWER LINE AND SUBSTATION IN WOLVEKRANS, MOGALE LOCAL MUNICIPALITY, GAUTENG

TABLE OF CONTENTS

Tables

Figures

ANNEXURES

CONTACT DETAILS OF RESPONSIBLE PERSONS

Proponent Details

Name of Proponent:	Eskom Holdings (SOC) Ltd, Eskom Distribution – Gauteng Operating Unit (Eskom)
Contact person:	Neo Masemola
Designation:	Environmental Manager, Land Development
Physical Address:	Eskom Centre, 204 Smit Street, Braamfontein, Johannesburg
Postal Address:	P.O. Box 3001
Tel:	011 711 2824
Fax:	086 604 1274
E-mail:	neo.masemola@eskom.co.za

Details of Environmental Assessment Practitioner

Name of Consultant:	GIBB (Pty) Ltd
Contact person:	Ms Umeshree Naicker
Physical Address:	54 Maxwell Drive, Woodmead 2191
Postal Address	P.O. Box 2700, Rivonia
Tel:	011 519 4701
Fax:	011 807 5670
E-mail:	unaicker@gibb.co.za

Details of Environmental Authorities

Department Name:	National Department of Environmental Affairs
Contact person:	Salome Mambane
Physical Address:	Environment House, 473 Steve Biko Road, Pretoria, 0001
Postal Address:	Private Bag X447, Pretoria, 0001
Tel:	012 399 9385
Fax:	
E-mail:	smambane@environment.gov.za

GLOSSARY OF TERMS, DEFINITIONS AND ABBREVIATIONS

Construction Activity	A construction activity is any action taken by the Contractor, his subcontractors, suppliers or personnel during the construction process.
Contractor	That main organisation appointed by the Developer, through the Project Manager, to undertake construction activities on the site.
Demolition	The tearing down of buildings and other structures: the opposite of construction.
Developer	Eskom Holdings (SOC) Ltd, Eskom Distribution – Gauteng Operating Unit (Eskom)
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer. The ECO monitors compliance with the EMPr during the construction phase and advises the Project Manager on environmental matters relating to construction.
EMPr	Environmental Management Programme: The EMPr for the project sets out general instructions that will be included in a contract document for the construction phase of the project. The EMPr will ensure the construction activities are conducted and managed in an environmentally sound and responsible manner.
Environment	Means the surroundings within which humans exist and that are made up of: a. The land, water and atmosphere of the earth; b. Micro-organisms, plant and animal life; c. Any part or combination of a) and b) and the interrelationships among and between them; and d. The physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.
Environmental Specifications	Instructions and guidelines for specific construction activities designed to help prevent, reduce and/or control the potential environmental implications of these construction activities.
DEA	Department of Environmental Affairs
I&AP(s)	Interested and Affected Party(ies)

Method Statement	A written submission by the Contractor to the Project Manager in response to the Specification setting out the plant, materials, labour, timing and method the Contractor proposes using to carry out an activity. The Method Statement shall cover applicable details with regard to: – Construction procedures; – Materials and equipment to be used; – Getting the equipment to and from site; – How the equipment/material will be moved while on site; – How and where material will be stored; – The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or solid material that may occur; – Timing and location of activities; – Compliance/ non-compliance with the Specifications; and – Any other information deemed necessary by the PM.
MSDS	Material Safety Data Sheet
Project	This refers to all construction activities associated with the proposed activities.
PM	Project Manager: Appointed firm responsible for overall management of the construction phase of the project including the management of all contractors.
PPE	Personal Protective Equipment
Rehabilitation	Rehabilitation is defined as the return of a disturbed area, feature or structure to a state that approximates to the state (where possible) that it was before disruption, or to an improved state.
SHE	Safety, Health and Environment
Solid Waste	Means all solid waste, including construction debris, chemical waste, excess cement/concrete, wrapping materials, timber, tins and cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers).
SSC	Species of Special Concern

1 INTRODUCTION

Eskom Holdings (SOC) Ltd, Eskom Distribution – Gauteng Operating Unit (Eskom) proposes to construct a 132kV Powerline extending from the existing ELIM-Tarlton line to the Wolvekrans substation site. The site is adjacent to both the national road N14 providing the north south link between Tshwane areas to the north and Ventersdorp to the south and Rustenburg road (R24) providing the east west link between Krugersdorp through Tarlton and Magaliesberg to Rustenburg. The need to increase the capacity of the electrical infrastructure throughout the study area was inevitable, to support existing and new businesses, industries and human settlement in the area. Majority of the route is located within the Mogale Local Municipality (MLM), Gauteng Province.

Eskom has applied for an environmental authorisation from the National Department of Gauteng Department of Agriculture and Rural Development (GDARD) for the construction of the proposed Wolvekrans 132kV Powerline and it's associated substation. As such GIBB (Pty) Ltd, (GIBB) has been appointed as the Independent Environmental Assessment Practitioner (EAP) to undertake the Basic Assessment and associated Public Participation Process for the proposed development.

This Environmental Management Programme (EMPr) was compiled as part of the Environmental Authorisation Process, required by the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The EMPr will look at the potential environmental impacts the proposed development could have on the environment and which mitigation and monitoring procedures will need to be put in place to manage these impacts with the smallest environmental footprint possible.

The proposed power line development, triggers listed activity 11 of Government Notice (GN) No. R. 983 (Listing Notice 1) of the EIA Regulations of 2014, which reads as follows:

Table 1: Applicable Legislation in terms of the EIA Regulations of 2014

Detailed description of listed activities associated with the project	
GNR No. 983, Item 11: The development of facilities or infrastructure for the transmission and distribution of electricity (i) Outside urban areas or on industrial complexes with a capacity of more than 33 but less than 275 kilovolts.	The applicant, Eskom, is proposing to erect a 132kV power line connection for the transmission and/or distribution of electricity.

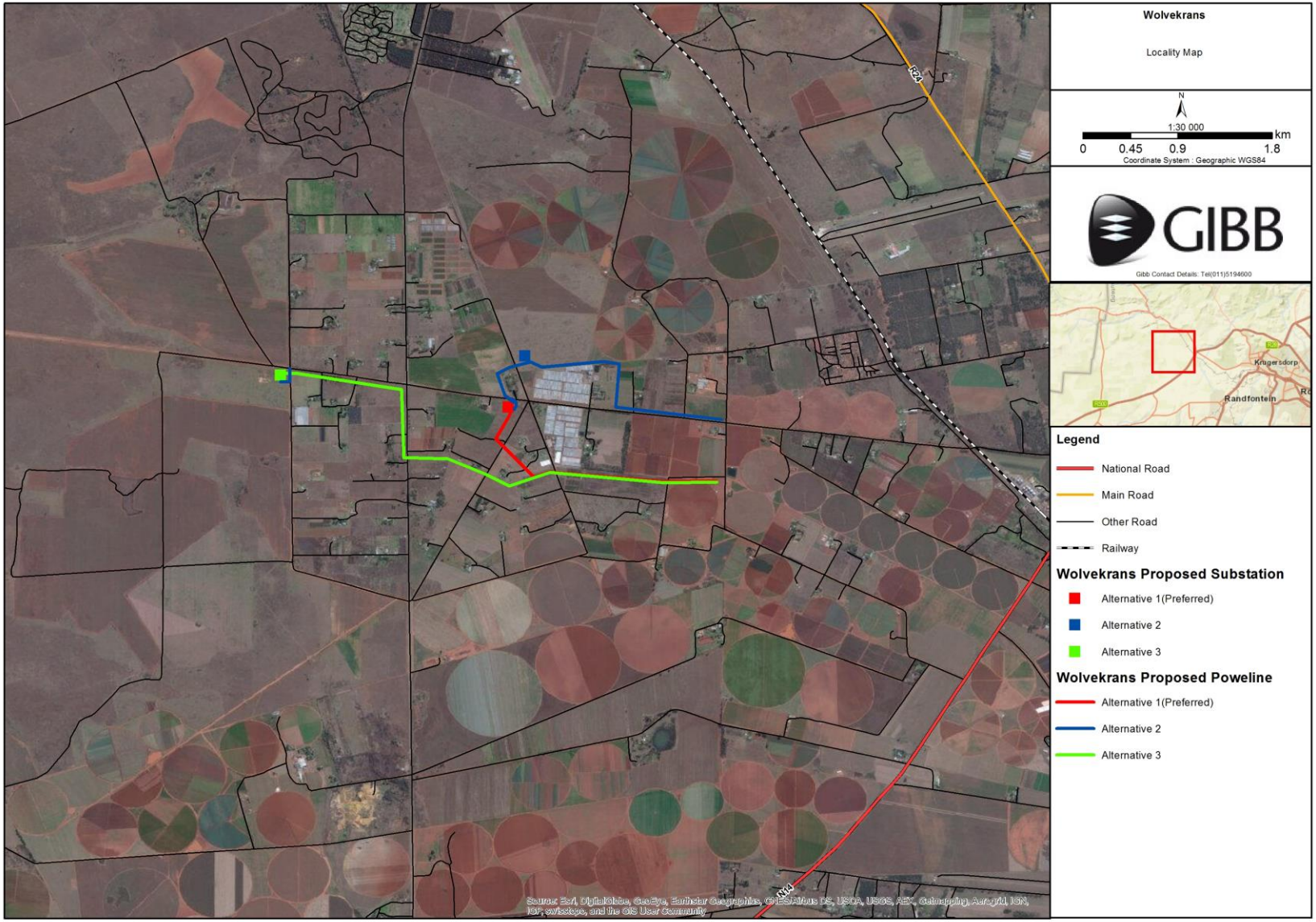

Figure 1: Locality Map of the proposed Wolvekrans 132kV Power Line Alignment

1.1 Applicable Documentation

The following environmental documentation is applicable for the project, and should be read in conjunction with this Environmental Management Programme (EMPr):

- Final Basic Assessment Report (FBAR) for the Wolvekrans 132kV Power Line;
- The EA for the Wolvekrans 132kV Power Line if it has been issued by DEA. Where necessary, this EMPr must be amended to comply with the conditions of the EA, if granted;
- Permits and/or licences that may need to be acquired before construction of the proposed power line, i.e. Water Use License (WUL) in terms of the National Water Act, 1998 (Act No. 36 of 1998); and
- All acts, ordinances and by-laws relevant to the proposed project.

1.2 Structure of the Environmental Management Programme

This EMPr provides mitigation and management measures for the following phases of the project:

Construction Phase
This section of the EMPr provides management principles for the construction phase of the project. Environmental actions, procedures and responsibilities as required within the construction phase are specified. These specifications shall form part of the contract documentation and, therefore, the Contractor will be required to comply with the specifications to the satisfaction of the Project Co-ordinator and Environmental Control Officer, in terms of the construction contract.

Operation Phase
This section of the EMPr provides management principles for the operation phase of the project. Environmental actions, procedures and responsibilities as required from Eskom within the operation phase are specified.

Decommissioning Phase
Due to the nature of the project and its operational lifespan, decommissioning is not envisaged. This EMPr will have to be updated when decommissioning is to take place.

It should be noted that this EMPr is a dynamic document which should be updated as and when required. Any amendments made must be submitted to both the Environmental Control Officer and Proponent for approval prior to implementation.

1.3 Objectives of the EMPr

The EMPr has the following objectives:

- To outline functions and responsibilities of responsible persons;
- To state standards and guidelines which are required to be achieved in terms of environmental legislation;
- To outline mitigation measures and environmental specifications which are required to be implemented for all phases of the project in order to minimise the extent of environmental impacts, and to manage environmental impacts; and
- To prevent long-term or permanent environmental degradation.

2 FUNCTIONS AND RESPONSIBILITIES

Formal responsibilities are necessary to ensure that key procedures are executed. Specific responsibilities of the various personnel for this project are detailed below.

The Developer / Proponent:

– The proponent (Eskom) is ultimately accountable for ensuring compliance to the EMPr and conditions contained in the Environmental Authorisation (EA). The ECO must be contracted by the developer (Eskom) as an independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA's, and the EMPr for the project.

– The developer is further responsible for providing and giving a mandate to enable the ECO to perform responsibilities. The developer must ensure that the ECO is integrated as part of the project team.

The Consulting Engineer (CE):

– Contracted by the developer to design and specify the project engineering aspects. Generally the engineer runs the works contract. The CE may also fulfil the role of Project Manager on the proponent's behalf.

Project Manager (PM):

– The Project Manager has over-all responsibility for managing the project, contractors, and consultants and for ensuring that the environmental management requirements are met. The CE may also act as the PM. All decisions regarding environmental procedures must be approved by the PM. The PM has the authority to stop any construction activity in contravention of the EMPr in accordance with an agreed warning procedure.

Engineers Representative (ER):

– The consulting engineer's representative on site. Has the power/mandate to issue site instructions and in some instances, variation orders to the contractor, following request by the EO or ECO. The ER oversees site works, liaison with Contractor and ECO.

Environmental Officer / Environmental Manager (EO):

– Appointed by the Consulting Engineers as their environmental representative on site. The EO is not independent but must rather act on behalf of the consulting engineers with the mandate to enforce compliance under the project contract, which must include the EMPr. The EO has the directive to issue non-conformance and hazard certificates. Further, in terms of accepted industry practice the EO could issue the

equivalent of a “cease works” instruction only in exceptional circumstances where serious environmental harm has been or is about to be caused i.e. in cases of extreme urgency and then only when the ER is absent.

- The EO must form part of the project team and be involved in all aspects of project planning that can influence environmental conditions on the site. On certain types of activities, such as linear developments (fences, pipelines, etc.), the EO must also be the liaison between the contractor and landowners (where required).
- The EO must attend relevant project meetings, conduct daily inspections to monitor compliance with the EMPr, and be responsible for providing reports and feedback on potential environmental problems associated with the development to the project team and ECO.
- The EO must convey the contents of this EMPr to the Contractor site team and discuss the contents in detail with the Contractor as well as undertake to conduct an induction and an environmental awareness training session prior to site handover to all contractors and their workforce.
- The EO must be suitably experienced with the relevant qualifications and preferably competent in construction related methods and practices.

The Environmental Control Officer (ECO):

- An independent appointment to objectively monitor implementation of relevant environmental legislation, conditions of EA, and the EMPr for the project.

- The ECO must be on site prior to any site establishment and must endeavour to form an integral part of the project team.
  The ECO must be proactive and have access to specialist expertise as and when required, these include geologists, heritage specialists, etc.

- The ECO must conduct audits on compliance to relevant environmental legislation, conditions of EA, and the EMPr for the project. The size and sensitivity of the development, based on the EIA, and the EA will determine the frequency at which the ECO will be required to conduct audits. (A minimum of a monthly site inspection must be undertaken).

- The ECO must be the liaison between the relevant authorities and the project team.
- The ECO must communicate and inform the developer and consulting engineers of any changes to environmental conditions as required by relevant authoritative bodies.
- The ECO must ensure that the registration and updating of all relevant EMPr documentation is carried out.
- The ECO must be suitably experienced with the relevant environmental management qualifications and preferably competent in construction related methods and practices.
- The ECO must handle information received from whistle blowers as confidential and must address and report these incidences to the relevant Authority as soon as possible.

The Contractor:

- Is to ensure that the environmental specifications of this document (including any revisions, additions or amendments) are effectively implemented. This includes the on-site implementation of steps to mitigate environmental impacts.
- Will ensure that all Employees and co-contractors employed comply with the requirements and provisions of the EMPr.
- Prepares method statements.
- Monitors environmental performance and conformance with the specifications contained in this document during daily site inspections.
- Discusses implementation of and compliance with this document with staff at routine site meetings.
- Reports progress towards implementation of and non-conformances with this document at site meetings with ECO.
- Will notify the ECO of the anticipated programme of works and fully disclose all details of activities involved.
- Will ensure that suitable records are kept and that the appropriate documentation is available to the ECO.
- Will Notify the ECO of all incidents, accidents and transgressions on site with respect to environmental management as well as requirements of the EMPr and corrective actions/remedial action taken.
- Reports and record all accidents and incidents resulting in injury or death.
- Informs the ECO of problems arising when implementing the EMPr and ways of improving the EMPr.
- Informs the ECO of any complaints received.

2.1 General Guidelines

The following measures provide guideline solutions to frequently anticipated issues on most development activities:

- The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the construction phase, illegal activities, delays caused by archaeological finds etc. is ultimately the responsibility of the applicant/developer. Section 28, National Environmental Management Act, 1998 (Act No. 107 of 1998) [NEMA].
- The study area must be clearly defined according to the project authorisation.
    - All workforce members and other construction personnel are not to go beyond the designated footprint.
    - The contractors must adhere to agreed and approved access points and haul roads.
    - No camping is allowed on any private property.
    - Damage to private or public property such as fences, gates and other infrastructure may occur at any time. All damage to be repaired immediately and to the satisfaction of the owner.

- The Contractor must adhere to all conditions of contract including this EMPr.
- Proper planning of the construction process must be undertaken to allow for disruptions due to rain and very wet conditions.
- All private and public manmade structures near the project site must be protected against damage at all times and any damage must be rectified immediately.
- Proper site management and regular monitoring of site works.
- Proper documentation and record keeping of all complaints and actions taken.
- Regular site inspections and good control over the construction process throughout the construction period.
- A positive attitude towards Environmental Management by all site personnel must be motivated through regular and effective awareness and training sessions.
- An EO, on behalf of the Contractor, is to be appointed to implement this EMPr. The EO and not the Contractor is to deal with any landowner related matters.
- Environmental Audits to be carried out prior, during and upon completion of construction.

2.2 Awareness Training

The EO or ECO where an EO is not appointed, is responsible for ensuring everyone on site is given an environmental awareness induction session which not only clearly defines what the environment is and gives specifics detailing the local environment but outlines the requirements of the EMPr as a management tool to protect the environment.

Refresher courses must be conducted as and when required. The EO must ensure daily toolbox talks include alerting the workforce to particular environmental concerns associated with the tasks for that day or the area/habitat in which they are working. Awareness posters and a hand out must be produced to create awareness throughout the site (as needed).

2.3 Contractor Environmental Method Statements

Method Statements are written submissions to the Engineer by the Contractor, in collaboration with his/her EO, in response to a request by the Engineer. The Method Statements set out the plant, materials, labour and method that the contractor proposes using to carry out an activity, identified by the EO and/or Engineer. The Method Statements contain the appropriate detail such that the EO and Engineer are able to assess whether the Contractor's proposal is in accordance with the requirements of the EMPr. The contractor must sign each Method Statement along with the EO and Engineer to formalise the approved Method Statement.

All Method Statements including those which may be required as ad hoc or emergency construction method statements must be submitted to the Engineer for approval prior to the commencement of the activity.

Any changes to the method of works must be reflected by amendments to the original approved Method Statement. Any changes in this regard must be approved by the EO and Engineer on the understanding that such changes are environmentally acceptable and in line with the requirements of this EMPr.

The pro forma Method Statements attached (amongst others) must be used and method statements for the following activities must be submitted to the EO, ECO and Engineer for approval before construction commences *inter alia*:

– Solid waste management;
– Crew camps and construction lay down areas;
– Cement and concrete batching;
– Dust control;
– Noise control
– Hydrocarbon and emergency spills procedures;
– Fire Management; and
– Diesel tanks and refuelling procedures (if applicable).

2.4 Site Documentation

The following is a list of documentation amongst others, which must be held on site and must be made available to the ECO and/or Approving Authority on request.

– Site daily diary /instruction book/ Incident reports;
– Records of all remediation / rehabilitation activities;
– Copies of ECO reports (management and monitoring);
– Environmental Management Programme (EMPr);
– Complaints register;
– Method statements; and
– Environmental Authorisation.

2.4.1 Pro forma Documentation

(a) Prior to the commencement of construction activities

The following attached *pro forma* documentation is to be filled out and is binding to the EMPr and project contract and includes, but is not limited to the following:

– Declaration of understanding by the Developer;
– Declaration of understanding by the Engineer;
– Declaration of understanding by the Contractor;
– Method statements; and

– ECO / Engineer approval for method statements.

(b) During construction activities

The following attached pro forma documentation is to be filled out and maintained. These are binding to the EMPr and project contract. They include, but are not limited to, the following:

– Amended Method Statements;
– ECO / Engineer approval for amended method statements;
– Environmental incidents; and
– Records of all remediation / rehabilitation activities.

3 ENVIRONMENTAL MANAGEMENT REQUIREMENTS

3.1 Section A: Planning and Pre-construction Phase Activities

A.1. Project Contract and Programme		Responsibility	Frequency	Notes
Contingencies for minimising negative impacts anticipated to occur during the construction phase needs to be implemented. Ensure environmental awareness and formalise environmental responsibilities and implementation	**A.1.1 Project Contract and Programme** (a) The EMPr must be included as part of the tender documentation thereby making it part of the enquiry document to make the recommendations and constraints, as set out in this document, enforceable under the general conditions of contract. (b) A copy of this EMPr must be available on site. The Contractor must ensure that all the personnel on site, sub-contractors and their team, suppliers, etc. are familiar with and understand the specifications contained in the EMPr.	Proponent	-	
A.2. Appointments and Duties of Project Team		**Responsibility**	**Frequency**	**Notes**
	A.2.1 Pro Forma Document and Contracts (a) The contact details for the ECO, Contractor and SHE officer must be completed as part of the pro-forma documents and a copy kept on site. This document must be made available to the approving authority on request.	Proponent	Once - off	

	(b) Subcontractor(s) contracts with the principle contractor must contain a clause to the effect that the disposal of all construction-generated refuse / waste to an officially approved dumping site is the responsibility of the subcontractor in question and that the subcontractors are bound to the management activities stipulated in this EMPr.			
	A.2.2 Roles and Responsibilities (a) Before construction activities commence, role players must have a clear indication of to their role in the implementation of this EMPr.	Proponent	Once - off	
A.3. Method Statements		**Responsibility**	**Frequency**	**Notes**
	A.3.1 Method Statements (a) Certain method statement must be provided by the contractor. All activities which require method statements may only commence once the method statements have been approved by the engineer and or ECO as applicable. (b) Where applicable, the contractor will provide job-specific training on an ad hoc basis when workers are engaged in activities, which require method	PM/ Contractor	Prior to commencing activities requiring method statements, on site.	Approved method statements and relevant pro forma documents along with training records to be kept on file on site.

	statements.			
A.4. Emergencies, Non-Compliance and Communication		**Responsibility**	**Frequency**	**Notes**
	A.4.1 Emergencies and Communication (a) The contractor must provide method statements on the protocols to be followed, and contingencies to be put in place for the following potential incidents before construction may begin: Contamination of natural water resources from spills; contamination of soils from spills; and fire. (b) Communication in emergencies must follow the suggested lines of communication.	Contractor	On-going	
	A.4.2 Non-Compliance The contractor understands that failure to adhere to the requirements of the EMPr will result in fines over and above the costs incurred for any remediation required as result of the specific non-compliance.	Contractor	On-going	
A.5. Construction Camp Set Up (if required)		**Responsibility**	**Frequency**	**Notes**
Careful planning of the construction camp can ensure that the time and costs associated with environmental management and rehabilitation are reduced. Therefore the camp should be established on	**A.5.1 Layout** (a) The choice of the Contractor's camp requires the Project Manager's and ECO's permission and must ensure that the camp is located in an area that will ensure a minimum impact. (b) The camp should be located on already	PM/ Contractor	Prior to site establishment	

previously disturbed areas such as school / municipal show grounds etc.	disturbed areas, such as school grounds, sports fields or previous construction camp sites. (c) The contractor should submit plans of exact location, extent and construction details of the temporary construction camp facilities to the Project Manager for approval, prior to establishment of the camp. The layout plans should reflect the proposed camp's location in relation to any existing infrastructure (water mains, electricity cables, sewage mains, etc.) on site. Access to the construction camp must be through an existing route that is clearly demarcated and agreed upon. (d) The construction camp can comprise of the following (as required): a. Site office b. Ablution facilities c. Designated first aid area d. Eating area e. Laydown areas			
	A.5.2 Ablutions (a) Ablution facilities must be provided and should be located within the construction camp at a ratio of 1:20 workers.	PM/ Contractor	-	
	A.5.3. Provision for Camp Waste Disposal (a) Bins and skips shall be provided at convenient intervals for disposal of waste within the construction	PM/ Contractor	On-going	

	camp/site. (b) Recycling and provision of separate waste receptacles for different types of waste should be encouraged.			
A.6. Establishing Storage Areas		**Responsibility**	**Frequency**	**Notes**
Storage areas can be hazardous and unsightly. These storage areas can also cause environmental pollution if not designed and managed properly.	**A.6.1. General Substances and Materials** (a) When deciding on the location of temporary stockpiles, the following needs to be considered: • road access, • length of time the stockpile will exist. (b) Additionally all stockpiles should be located away from sensitive ecosystems (farm dams) and protected from the prevailing winds. (c) Storage areas must be designated, demarcated and fenced if necessary. (d) Storage areas should be secured, to minimize the risk of crime and contamination.	EO/ ECO approval	During site establishment.	
	A.6.2 Hazardous Substances and Materials (a) Fuel must be stored in a bunded area with at least a volume of 110% of the tank. (b) No smoking shall be allowed in the vicinity of the fuel storage area. Erect at least one no-smoking warning sign, which is clearly visible at the fuel storage area, to warn all staff of associated dangers. (c) Provide adequate firefighting	EO/ ECO approval	During site establishment	

	equipment at or close to the fuel storage and dispensing area(s). (d) Keep fuel under lock and key at all times. (e) Hazardous chemical working/ refuelling areas must be bunded with an impermeable liner. (f) Ensure that there is always a supply of absorbent material readily available to absorb/break down any hydrocarbon spillage. (g) In the case of a spill, contaminated material must be removed from the site immediately and disposed of at an appropriate licensed hazardous waste facility.			
A.7. Set Up of Waste Management Activities		**Responsibility**	**Frequency**	**Notes**
	A.7.1 Waste management (a) A dedicated area must be allocated for waste sorting and storage. (b) Individual waste skip or wheelie bins for different types of waste should be provided (if none currently exist).	EO/ ECO	During site establishment	
A.8. Education of Site Staff on General Environmental Conduct		**Responsibility**	**Frequency**	**Notes**
These points must be communicated to all staff prior to site establishment.	**A.8.1. Environmental Education and Awareness** Ensure that all site personnel have a basic level of environmental awareness training. Topics covered should include: • What is meant by 'Environment'? • Why do we have to protect the environment?	EO/ ECO	During staff induction and weekly Toolbox Talks	Toolbox talks and lunchtime Q&A.

	• How construction activities can impact on the environment. • How can these impacts be mitigated. • Awareness of emergency and spills response provisions. • Social responsibility during construction e.g. being considerate to local residents. It is the contractor's responsibility to provide the site foreman with no less than 1 hour's environmental training (per week or as directed by the ECO) and to ensure that the foreman has sufficient understanding to pass the information onto the construction staff. (a) Translators are to be used where necessary. (b) The use of pictures and real-life examples is encouraged as these are easier to remember. (c) The need for a 'clean site' policy also needs to be explained to the construction workers.			
	A.8.2. Worker Conduct on Site Under no circumstances may open areas or surrounding bush be used as toilet facilities. A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the	PM/ Contractor	During staff induction, followed by on-going monitoring.	

	following general rules: • No alcohol/drugs to be present on site. • No fire arms allowed on site or in vehicles transporting staff to/from the site (unless by security personnel. • Construction staff is to make use of facilities provided for them, as opposed to ad hoc alternatives.			
A.9. Water Quality		**Responsibility**	**Frequency**	**Notes**
Incorrect disposal of substances and materials and polluted run-off can cause serious negative impacts on surrounding water resources such as the nearby farm dams in the area	**A.9.1. Water Quality** (a) No construction activities may take place directly within 100 m of any known watercourses. (b) No construction to take place within 50m of the edge of any farm dams. (c) No power lines to be strung across the open surface water of any farm dams. (d) Equipment and machinery must be in good operation condition, clean (power washed), free of leaks, excess oil and grease. The equipment must be washed/ cleaned in the wash bays or demarcated areas only. (e) Ensure that machinery is operated by a skilled driver who has been trained to use it correctly and who will be able to identify if something is wrong with the engine and conduct regular inspections identifying engine related leaks.	EO/ ECO	During site set up.	

A.10. Security and Safety		Responsibility	Frequency	Notes
	A.10.1. Risk Associated with Materials on Site (a) Material stockpiles or stacks such as cement, steel, bricks, corrugated iron sheeting, plastic piping, etc. must be stable and well packed to avoid collapse and possible injury to site workers, stockpiles must also be covered to avoid seepage and ground water pollution (where applicable). (b) No materials are to be stored in unstable or high risk areas such as in close proximity of the entrance road, excavated areas, etc.	PM/ Contractor	On-going	

3.2 Section B: Construction Phase Activities

B.1. Site Access		Responsibility	Frequency	Notes
	B.1.1 Access to the site (a) Existing access roads must be used as far as possible. Please note that all existing access roads utilised will have to be maintained to the satisfaction of the landowners. (b) If access roads must pass through drainage lines, the footprint should be as small as possible. (c) A road management plan should be compiled, showing allocated access points and roads, to prevent tracks all over the landscape. (d) Construction vehicles must be limited to a speed of 20km/h on access roads and keep to the speed limit on public roads. (e) Existing access roads must be utilised as much as possible to protect biodiversity sensitive areas and should the need to construct new access roads arise, these must be properly demarcated in accordance with the absolute minimum area required for access and construction. The movement of vehicles, equipment and personnel should at all times be confined to the demarcated area.	Proponent	-	
B.2. Maintenance of construction camp (as applicable)		**Responsibility**	**Frequency**	**Notes**
	B.2.1 Ablution (a) Portable chemical toilets should be acquired and placed at the construction site(s). At least 1 toilet to 20 workers should be erected. (b) Chemical toilets to be used on site, grey water should be disposed of off-site at a	Proponent	As per Eskom current procedures or as directed by the EO / PM	

	licensed waste treatment works. (c) The toilets should be located within the construction camp site(s) or as directed by the ECO / PM. (d) Construction camps, toilets and temporary laydown areas should be located at least 50m away from the edge of any wetlands, drainage lines, farm dams			
	B.2.2. Eating Areas (a) Eating areas should be serviced and cleaned regularly to ensure the highest possible standards of hygiene and cleanliness. (b) All litter throughout the site should be picked up and placed in the appropriate recycling bins provided.	Contractor	Daily and Weekly inspection	
	B.2.3. Housekeeping (a) The contractor shall ensure that his camp and working areas are kept clean and tidy at all times. (b) The contractor shall implement good housekeeping practises to minimise the visual impact of waste and discarded materials.	Contractor	Daily	
B.3. Staff Conduct		**Responsibility**	**Frequency**	**Notes**
	B.3.1. Environmental Education and Awareness/ Safety (a) The contractor must monitor the performance of construction workers to ensure that all the topics that where covered in the induction meeting is properly understood, and followed. (b) HIV & AIDS awareness talks should be given at the construction camp sites on a regular	Contractor	Daily/ Weekly	Toolbox talks and lunch time Q&A.

	basis by the relevant personnel.			
B.4. Waste Management		**Responsibility**	**Frequency**	**Notes**
Activities in the construction site such as office work, usage of construction materials, etc., generate different types of waste that requires to be managed properly. These wastes could result in environmental pollution such as soil contamination/ pollution or health hazards to employees working on-site, if not managed properly.	**B.4.1 On-Site Waste Management** (a) Waste is grouped into "general" or "hazardous", depending on its characteristics. The classification determines the handling methods and the ultimate disposal of the material. The Contractor/ ECO must classify waste into general or hazardous based on the toxicity or hazard nature of waste. (b) Waste must be placed in the designated or marked skips/ bins which must be emptied on a regular basis by a contracted waste collector. These should remain within the demarcated areas and should be designed to prevent refuse from being blown out by wind. (c) Separation of waste and recycling of paper, glass, cans, scrap, metals, plastic bottles, etc., must be considered prior to disposal. The disposal at the landfill site should be considered as the last option, after having taken into consideration the prevention of waste generation, reduction waste generation, reuse and recycling. (d) Hazardous waste that require disposal (oily rags, used fuel/ oil, etc.) must be placed in a suitable leak proof skip or wheelie bin for disposal at an approved hazardous waste disposal facility. (e) A service provider should be appointed to transport and dispose the hazardous waste at an approved landfill site. (f) The contractor is responsible for arranging the removal of all waste from site generated through construction activities. Waste must	Contractor/ EO/ PM	During the start-up of construction on site and on-going thereafter. During waste collection Prior to signing an agreement with the waste removal contractor.	ECO and PM needs to ensure that all construction staff is educated on waste management.

	be removed to a registered, appropriate disposal and recycling facility. The Rand West City Local Municipality has suggested the Uitvalfontein Landfill site for general waste only. (g) The contractor is responsible for arranging the removal of all waste from site generated through construction activities. Waste must be removed to a registered, appropriate disposal and recycling facilities. (h) No burning and littering of waste on site should be allowed. (i) All wetlands and drainage lines should generally be treated as "no-go" areas and appropriately demarcated as such. No vehicles, machinery, personnel, construction materials, cement, fuel, oil or waste should be allowed into these areas without the express permission of and supervision by the ECO. (j) Keep waste in vermin proof bins with lids. (k) Request the following from the waste contractors that are used to collect waste: • Copies of the weighbridge receipt from the waste removal contractor for all waste collected on site. (l) There is no waste disposal facility within Mogale City Local Municipality (MCLM) capable of handling and treating waste oil, it is therefore recommended that the applicant develop a waste management plan for the waste oil addressing the following issues amongst others; • Storage facility taking into account the			

	volumes produced and protection of the environment; • Measures to be taken to manage waste oil at this facility; • Transportation of the waste oil from the site by an accredited service provider to a licensed disposal facility; • There should be an arrangement with the concerned waste facility which should be attached to the application indicating that the facility is capable of handling the waste oil from the site; • Methods of monitoring and reporting on an annual basis to MCLM on all the above aspects of the plan.			
B.5. Construction Vehicles/ Equipment		**Responsibility**	**Frequency**	**Notes**
Engine machines such as compressors, pumps, air conditioners and arc welders can have small leaks (usually oil) that can accumulate to become spills, which require clean-up. These leaks become more evident if the equipment remains in the same place for an extended period of time. Damaged fuel tanks, fuel hoses, and fuel pumps can be sources of significant fuel leaks. Hydraulic systems can blow gaskets or hoses resulting in large quantities of	**B.5.1 Construction Equipment** (a) Vehicles and machinery are to be kept in good working order and to meet manufactures specification for safety, fuel consumption and emission. (b) Should excessive emissions be observed, the site manager needs to implement an effective vehicle and equipment service and maintenance plan. (c) Vehicle parking and equipment storage must be done on a hardened and sealed surface area such that oil, fuel and other fluid leaks do not pollute soil or ground water sources. (d) Drip trays must be placed underneath vehicles when not in use.	Contractor/ EO	On going	Contractor must follow a detailed checklist for machinery and equipment maintenance.

hydraulic fluid spilled to the ground.				
Increased noise and dust emissions from construction vehicles carrying out construction activities may occur.	**B.5.2 Construction Activities – Increase in Dust and Noise Generation** (a) Use existing roads to access the site in order to limit the amount of dust on site. General housekeeping should also be maintained. (b) Avoid unnecessary movement of transportation vehicles on site. (c) Apply appropriate dust suppression methods. (d) No potable water may be used for dust suppression (as far as is practically possible). (e) Construction time must be restricted to working hours (07:00-18:00) Monday to Friday excluding public holidays (unless prior permission is obtained from the adjacent landowners. (f) All noise and sounds generated during the proposed activity must comply with the relevant SANS codes and standards. (g) All construction equipment or machinery should be switched off when not in use. (h) Construction equipment must be kept in good working condition. (i) Plant and vehicles must be in good working order and visually inspected daily. (j) Use silencers on all equipment, where appropriate.	Contractor/ EO	On-going/ daily	Contractor/ EO must ensure that the necessary noise and dust control measures be implemented and applied throughout the entire construction phase of the project.
B.6. Emergency Response to Spillages		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to manage spillages from equipment used on site and measures for other construction materials handled	**B.6.1 Emergency Response to Spillages** The contractor shall take into account the following prevention measures to be applied during spillages.	Contractor	During spillages	The ECO/ EO and contractor must ensure that the Emergency response procedure is

on site.	(a) Immediately repair all leaks of hydrocarbons, oil, etc. (b) Take reasonable measure to prevent further spills or leaks. (c) Dispose contaminated materials to a location designated thereto, for further disposal at a registered landfill site. (d) The contractor shall have its own spill response plan in the event of any spills (oil, fuel, hazardous materials) from his machinery or equipment used on site.			well understood by all workers on site and that a summary is available for site visitors.
This section aims to provide measures to prevent pollution of the environment as well as to minimise the chances of transgression of the acts controlling pollution.	**B.6.2 Oil and Chemicals** (a) The contractor must provide method statements for the "handling & storage of oils and chemicals", "fire", and "emergency spills procedures". (b) These substances must be confined to specific and secured areas within the contractor's camp, and in a way that does not pose a danger of pollution even during times of high rainfall. These areas must be imperviously bunded with adequate containment (at least 110% the volume of the fuel) for potential spills or leaks (c) Drip trays (minimum of 10cm deep) (or appropriate alternative *viz*. eco-blocks) must be placed under all vehicles that stand for more than 24 hours. Vehicles suspected of leaking must not be left unattended, drip trays must be utilised. (d) The surface area of the drip trays will be dependent on the vehicle and must be large enough to catch any hydrocarbons that may leak from the vehicle while standing. (e) The depth of the drip tray must be determined considering the total amount/ volume of oil in the vehicle. The drip tray	Contractor	On-going/ daily	

	must be able to contain the volume of oil in the vehicle. (f) Spill kits must be available on site and in all vehicles that transport hydrocarbons for dispensing to other vehicles on the construction site. Spill kits must be made up of material/ product that is in line with environmental best practice (SUNSORB is a recommended product that is environmentally friendly). (g) All spilled hazardous substances must be contained in impermeable containers for removal to a licensed hazardous waste site, (this includes contaminated soils, and drenched spill kit material). (h) No chemical control (herbicides) of alien plants to be used within 100m of watercourse or farm dams.			
B.7. Cement Handling		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the possibility of cement residue entering into the surrounding environment.	**B.7.1 Concrete Batching and Mixing** (a) The contractor must provide and maintain a method statement for "cement and concrete batching". The method statement must provide information on proposed storage, washing & disposal of cement, packaging, tools and plant. (b) The mixing of concrete must only be done at specifically selected sites on mortar boards or similar structures to contain run-off into soils, streams and natural vegetation. (c) No mixing of cement/concrete should take place within 30m of aquatic features. (d) Cleaning of cement mixing and handling equipment must be done using proper cleaning trays and at designated areas only.	Contractor	On-going/ daily	

	(e) Water used to clean concrete off of machinery should be treated as grey water and disposed of at a licensed water treatment works.			
This section aims to provide measures to minimise pollution of soil, surface and groundwater resources.	**B.7.2 Storage and Disposal Requirements** (a) All empty cement bags must be stored in a dedicated area and later removed from the site for appropriate disposal at a licensed facility. The burning of cement bags is strictly forbidden. (b) Any spillage that may occur must be investigated and immediate remedial action must be taken. (c) The visible remains of concrete, either solid, or from washings, must be physically removed immediately and disposed of as waste to a registered landfill site. (d) Cement batching areas must be located in consultation with the ECO to ensure residues are contained and that the proposed location does not fall within sensitive areas such as drainage lines, storm water channels, etc.	Contractor	On-going/ daily	
B.8 Dangerous and Toxic Materials		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to prevent pollution of soil, surface and ground water resources in the immediate and surrounding environments. It also proposes measures to minimise the chances of transgression of the acts controlling pollution.	**B.8.1 Provision of Storage Facilities** (a) Materials such as fuel, oil, paint, herbicide and insecticides must be sealed and stored in bermed areas or under lock and key, as appropriate, in well-ventilated areas. (b) Sufficient care must be taken when handling these materials to prevent pollution. Training on the handling of dangerous and toxic materials must be conducted for all staff prior to the commencement of construction. (c) In the case of pollution of any surface or groundwater, the Regional Representative of	Contractor	On-going/ daily	

	the Department of Water and Sanitation (DWS) must be informed immediately. (d) Storage areas must display the required safety signs depicting “no smoking”, No Naked lights” and “Danger” containers must be clearly marked to indicate contents as well as safety requirements. (e) The contractor must supply a method statement for the storage of hazardous materials at tender stage. (f) Material Safety Data Sheets (MSDS) must be prepared for all hazardous substances on site and supplied by the supplier where relevant. MSDS’s must be updated as required.			
B.9. Bulk Storage of Fuels and Oils (as applicable)		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to prevent pollution of soil, surface and ground water resources in the immediate and surrounding environments. It also proposes measures to minimise the chances of transgression of the acts controlling pollution.	**B.9.1 Bulk Storage of Fuels and Oils** (a) The contractor must provide and maintain a method statement for “Diesel tanks and refuelling procedures”. (b) Bulk fuel storage tanks on the site must be on an impervious surface that is bunded and able to contain at least 110% of the volume of the tanks. The filler tap must be inside the bunded area where possible and the bund wall must not have a tap or valve. (c) The bunded area should have a water/ fuel sump separator. (d) A Flammable Liquid License must be obtained for diesel volumes greater than 200 litres. (e) Bulk fuel storage tanks must be located in a portion of the construction camp where they do not pose a high risk in terms of water pollution (i.e. they must be located away from water courses and drainage lines) (f) Bulk fuel storage tanks must be placed so	Contractor	Once of as required	

	that they are out of the way of traffic, so that the risk of the tanks being ruptured or damaged by vehicles is minimised. (g) Bulk fuel storage areas should be covered during the rainy season. (h) No fuel storage, refuelling, vehicle maintenance or vehicle depots should be allowed within 30 m of the edge of any wetlands or drainage lines. (i) Refuelling and fuel storage areas, and areas used for the servicing or parking of vehicles and machinery, should be located on impervious bases and should have bunds around them. Bunds should be sufficiently high to ensure that all the fuel kept in the area will be captured in the event of a major spillage.			
B.10. Use of Dangerous and Toxic Materials		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to prevent pollution of soil, surface and ground water resources in the immediate and surrounding environments. It also proposes measures to minimise the chances of transgression of the acts controlling pollution.	**B.10.1 Use of Dangerous and Toxic Materials** (a) The contractor must keep the necessary materials and equipment on site to deal with spills/ fire of the materials present should they occur. (b) The contractor must set up a procedure (which will be stipulated in a method statement) for dealing with spills/ fire, which will include notifying the ECO and the relevant authorities prior to commencing with construction. These procedures must be developed with consultation and approval by the appointed EO. (c) A record must be kept of all spills and the corrective action taken.	Contractor	As required	
B.11. Stockpile Handling		**Responsibility**	**Frequency**	**Notes**

Stockpiles need to be managed in accordance with the outlined specifications in order to minimise the scarring of the soil surface and land features, disturbance and loss of soil, construction footprint, sedimentation of nearby drainage lines; maintain the integrity of the topsoil for landscaping, containment of invasive plant growth as well as the contamination of storm water run-off.	**B.11.1 Stockpiles** (a) All stockpiled material must be easily accessible without any environmental damage. (b) All temporarily stockpiled material must be stockpiled in such a way that the spread of materials are minimised. (c) The stockpiles may only be placed within the demarcated areas the location of which must be approved by the ECO. (d) The contractor must avoid all clearly marked vegetated areas that will not be cleared. (e) Storm water run-off from the stockpile sites and other related areas must be directed into the storm water system with the necessary pollution prevention measures such as silt traps and may not run freely into the immediate and surrounding environments. (f) Stockpiles are to be stabilised if signs of erosion are visible. (g) During construction, all materials and stockpiles will be covered with tarps to prevent erosion, as well as dust arising from it, and to mitigate the visibility thereof (where required and as directed by the ECO). (h) Soils from different horizons must be stock piled such that topsoil stockpiles do not get contaminated by sub-soil material. (i) Topsoil stockpiles must be monitored for invasive exotic vegetation growth. Contractors must remediate as and when required in consultation with the ECO. (j) No plant, workforce or any construction related activities may be allowed onto the topsoil stockpiles. (k) Topsoil stockpiles must be clearly demarcated as no-go areas. (l) Stock piles must not be higher than 2m to	Contractor	On-going/ daily	

	avoid compaction thereby maintaining the soil integrity and chemical composition. (m) No spoil material, including stripped topsoil, should be temporarily stockpiled within 30 m of the edge of any wetland or drainage line.			
B.12 Fire Management		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the destruction of natural fauna and flora as well as maintain the general safety on site.	**B.12.1 Fire Management** (a) The contractors must provide and maintain a method statement for "fires", clearly indicating where and for what fires will be utilised plus details on the fuel to be utilised (b) Absolutely no burning of waste is permitted. (c) No open fires permitted on site at any time. (d) No wood is to be collected, chopped or felled for fires from private or public property as well as from no-go or sensitive areas within the site and any surrounding natural vegetation. (e) Employ a fire officer for on-site control. (f) Fire-fighting equipment to be kept on site and serviced regularly.	Contractor	On-going/ daily	
B.13. Erosion and Sedimentation		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the damage caused by erosion, impedance of the natural flow of water, scarring of the soil surface and land features, disturbance and loss of topsoil as well as enable the re-growth of disturbed areas.	**B.13.1 Erosion and Sedimentation Management** (a) To reduce the loss of material by erosion, the contractor must ensure that disturbance on site is kept to a minimum. The contractor is responsible for rehabilitating all eroded areas in such a way that the erosion potential is minimised after construction has been completed. (b) Should there be any disturbed areas during	Contractor	On-going/ daily	

	the construction phase, they must be rehabilitated after the completion of the construction phase. (c) These areas must be cordoned off so that vehicles or construction personnel cannot gain access to these areas. (d) Limit the footprint area of the construction activities to what is absolutely essential in order to minimise environmental damage, especially where towers will encroach upon the wetland boundary. Construction vehicles must use existing roads where possible.			
B.14. Fauna and Flora		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the disturbance to animals, interruption of breeding patterns of birds as well as the destruction of habitats.	**B.14.1 Fauna Management** (a) All activities on site must comply with the regulations of the Animals Protection Act, 1962 (Act No. 71 of 1962), as amended. (b) All construction workers must be informed that the intentional killing of any animal is not permitted as faunal species are a benefit to society. Poaching is illegal and it must be a condition of employment that any employee caught poaching will be dismissed. Employees must be trained on how to deal with fauna species as intentional killing will not be tolerated. In the case of a problem animal e.g. a large snake, a specialist must be called in to safely relocate the animal if the EO or ECO is not able to. (c) Environmental induction training and awareness must include aspects dealing in safety with wild animals into and on site. Focus on animals such as snakes and other reptiles that often generate fear by telling workers how to move safely away and to whom to report the sighting. Workers should	Contractor	On-going/ daily	

	also be informed where snakes most often hide so that they can be vigilant when lifting stones, etc. (d) Disturbances to nesting sites of birds must be avoided, as far as possible. (e) Vegetation clearance should be conducted systematically from the start to the end of the route to allow fauna to move away. (f) Construction activities and vehicle traffic should be restricted to daylight hours when the majority of faunal species are inactive. (g) Species such as tortoises and porcupines should be removed to surrounding areas if encountered on site and not collected as this is illegal. (h) Should wild animals be encountered during the construction phase, these animals should not be hunted or harmed, but allowed to escape into surrounding land. (i) Sensitive habitats that include riparian areas, floodplains, rocky habitat, ridges, wetlands and other sensitive sites should be avoided as far as is possible. This will require proactive planning and route alignments to minimize the area that will be directly affected by pylons and construction activities. (j) Where-ever possible, the timing and duration of construction activities must be scheduled to prevent direct impacts on key breeding times and seasons. This would apply specifically to sensitive mammal species, carnivore species and larger bird species.			
This section aims to provide measures to minimise the disturbance to vegetation, prevent litigation concerning removal of vegetation, encourage natural habitat	**B.14.2 Flora Management** (a) Trees and natural vegetation or any other natural features inside and outside the work area, which will not be cleared for construction purposes as indicated by the ECO, must be clearly demarcated and not be	Contractor	As and when required	

fauna, minimise scarring of the soil surface and land features, minimise disturbance and loss of topsoil as well as the risk of fauna and flora destruction.	defaced, removed, painted for benchmarks or otherwise damaged, even for survey purposes. The latter can only be done if stipulated in the Environmental Authorisation and must be overseen by the EO and ECO. Any feature defaced by the contractor must be reinstated to the satisfaction of the ECO and penalties/fines may be imposed by the ER. (b) The contractor must rehabilitate any disturbed areas once construction activities have terminated for e.g. by removing all contaminated soils. The crew camp during construction must be located in an area that will be developed to impervious surfaces after construction, so as to ensure that natural vegetation cover is not disturbed. A method statement must be provided and maintained by the contractor. (c) Once construction is complete, rehabilitation of un-built areas must be undertaken in order to restore the aesthetic & ecological value of the area. It is recommended that the ECO be consulted with regard to the most appropriate rehabilitation vegetation and structures. Active re-vegetation must take place with locally indigenous vegetation under the supervision of the ECO. (d) No open fires shall be allowed on site under any circumstances, fires will only be permitted in adequate facility within the crew camp, Forest Act, 1984 (Act No. 122 of 1984). (e) Avoid strip clearing. (f) Vegetation should be removed only where construction is to take place. (g) Clearing of the servitude should be as narrow as possible to prevent major destruction of habitats.			

	(h) Prior to construction, the route should be walked by a qualified botanist, to located and remove sensitive species. (i) Should any sensitive species be found, management measure should be adopted for the species and fenced if applicable. (j) Sensitive plant species should be removed and relocated from points of direct impact before construction starts. (k) Sensitive habitats that include riparian areas, floodplains, rocky habitat, ridges, wetlands and other sensitive sites should be avoided as far as is possible. This will require proactive planning and route alignments to minimize the area that will be directly affected by pylons and construction activities. (l) A strategy must be developed prior to construction to prevent the spread and dispersal of alien plants. Where possible, strategies to prevent the regrowth and coppicing of felled exotic or alien trees must be formulated and enforced throughout the life time of the powerline;			
This section aims to provide measures to minimise the disturbance to sensitive avifauna species.	**B.14.3 Avifauna Management** (a) An appropriate pylon must be designed to ensure that large birds (i.e. vultures and secretary bird as well as larger eagles) are not likely to be electrocuted by the infrastructure. This will require adequate perches for birds to rest on, the prevention of areas on the pylon for birds to roost and nest in, adequate distances between power lines to prevent the earthing of the line and adequate measures to discourage birds from roosting at the substations; (b) Ensure that all new lines are marked with bird	Contractor	As and when required	

	flight diverters along their entire length, using industry standard markers and marker fitting protocols. (c) In situations where new lines traverse in parallel with existing, unmarked power lines, this approach has the added benefit of reducing the collision risk posed by the older line. (d) Ensure that all new power infrastructure is adequately insulated and bird-friendly in configuration. (e) Minimise disturbance impacts associated with the construction of the line by abbreviating construction time, scheduling construction activities around avian breeding schedules where necessary, lowering levels of associated noise, and reducing the size of the inclusive development footprint. (f) Minimise the extent of woodland cleared in the servitude required to track the route of all new lines – ideally by routing these lines within existing development corridors. *(g)* Establishing a practical and sustainable management plan for dealing with raptor stick-nests built on the new line. Ultimately, these may include nest sites of red-listed or otherwise scarce species such as *African Fish-Eagle, African Hawk Eagle, Martial Eagle and Lanner Falcon.*			
B.15. Wetland and Riparian Features		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the damage caused by construction activities on the various riverine and wetland features found near the study	**B.15.1 Footprint Management** (a) Limit the footprint area of the construction activities to what is absolutely essential in order to minimise environmental damage, especially where towers will encroach upon the wetland boundary. Construction vehicles	Contractor	On-going/ daily	

area.	must use existing roads where possible. (b) During construction all building materials should be kept out of the wetland areas as well as any active stream channels; (c) In any areas where disturbance of banks or wetland vegetation occurs, bank and bed profile should be re-instated in such a way as reinstate predevelopment habitat conditions (d) Keep all demarcated sensitive zones outside of the construction area off limits during the construction and rehabilitation phases of the development. (e) Appropriate sanitary facilities must be provided during the construction phase and all waste removed to an appropriate waste facility. (f) Water conservation must be actively promoted through water saving technologies. (g) No construction is to take place within 50m of the edge of any of the farm dams. **B.15.2 Vehicle Access** (a) All construction footprint areas should remain as small as possible and should not encroach onto surrounding more sensitive areas. It must be ensured that these areas are off-limits to construction vehicles and personnel as far as possible. (b) In the event of a breakdown, maintenance of vehicles must take place with care and the recollection of spillage should be practiced near the surface area to prevent ingress of hydrocarbons into topsoil. (c) It must be ensured that all hazardous storage containers and storage areas comply with the relevant SABS standards to prevent leakage. All vehicles must be regularly inspected for			

	leaks. Re-fuelling must take place on a sealed surface area to prevent ingress of hydrocarbons into topsoil. (d) All spills should be immediately cleaned up and treated accordingly. **B.15.2 Soil Conditions** (a) All soils compacted as a result of construction activities falling outside of project footprint areas should be ripped and profiled. Special attention should be paid to alien and invasive control within these areas. Alien and invasive vegetation control should take place throughout all construction and rehabilitation phases to prevent loss of floral habitat. (b) Monitor all systems for erosion and incision.			
B.16. Heritage Features		**Responsibility**	**Frequency**	**Notes**
This section aims to provide measures to minimise the damage caused by construction activities on the various heritage resources found throughout the study area.	B.16.1 Abandoned Homestead along the Alternative Powerline 1 (Preferred) and Alternative Powerline 2 B.16.2 Burial Sites (a) WBS 1- was rated highly significant and the powerline route Alt 1(Preferred) & Alt2) must be shifted further south to avoid the burial site. (b) WBS 2- was rated highly significant and the powerline route (Alt 1(Preferred) & Alt2) should be avoided or shifted further south. (c) A valid permit for the relocation of the graves must be obtained from SAHRA, SAPS, Dept. of Health, etc.(if required)	Contractor	As and when required	

B.17. Surface Water Areas		Responsibility	Frequency	Notes
	B.17.1. Construction near surface water features (a) No construction is to take place within 50m of the edge of any of the farm dams; (b) A storm water management plan must be compiled and implemented to address issues such as storm water runoff and potential erosion; (c) No pylon structures must be placed within any watercourses and erosion prone areas; (d) The mechanical control and monitoring of alien plants to be used within 100m of watercourses or farm dams.	Contractor	During the construction phase	
B.18. Vegetation Features		**Responsibility**	**Frequency**	**Notes**
	B.18.1. Vegetation within the proposed development site (a) For all species protected in terms of the National or Provincial Legislation within the proposed development areas, permits must be obtained from relevant authorities before construction commence; (b) Recommendations by the Ecological Specialist must be adhered to and implemented; (c) Mitigation options must be considered in terms of the following hierarchy: (1) avoidance; (2) minimisation; (3) restoration; and (4) offsets; (d) The positioning of the proposed substations to avoid any pristine grassland areas and be placed primarily	Contractor and applicant	During the construction phase	

	within disturbed areas; (e) It should be noted that based on the ecological specialist investigations, the powerline route alternative 3 and substation site alternative 3 is not recommended and powerline route alternatives 1 and 2 are preferred and recommended for approval.			

3.3 Section C: Operation Phase Activities

C.1. Power Lines		Responsibility	Frequency	Notes
	C.1.1 Power Lines (a) Inspect Power lines regularly for signs of vandalism or theft of support structures or conductors. (b) Install anti-climb wires to deter individuals from climbing towers. (c) Monitor the growth of vegetation in the servitude and keep the clearance between vegetation and lines to those legally required. (d) Monitor bird nests on Power lines, which if present must be managed according to Eskom's Bird Nesting Guidelines. (e) All collisions and electrocutions should be recorded and passed to relevant authorities including Eskom management; (f) If collision and electrocution increases, management measures should be considered to mitigate such impacts.	Proponent	In accordance with Eskom specifications and guidelines	
C.2. Access Tracks		**Responsibility**	**Frequency**	**Notes**
	C.2.1 Access Tracks (a) The maintenance of access tracks is the responsibility of Eskom. (b) Access tracks must be repaired when necessary to avoid the formation of ruts. (c) Eskom's Erosion Guidelines should be used manage erosion of access and servitudes. (d) All weeds and invasive vegetation in the electrical servitude should be monitored and eradicated on a continuous basis for the period the servitude will be in use.	Proponent	In accordance with Eskom specifications and guidelines	

C.3. Vegetation Features		Responsibility	Frequency	Notes
	B.3.1. Vegetation within the proposed development site (a) Rehabilitation and revegetation together with the Protected Plant Rescue and Protection Plans must be implemented and adhered to.	Applicant	Once the construction phase cease	

This section must be updated as operational needs dictate.

3.4 Section D: Decommissioning Phase Activities

Please note that it is not envisaged the Wolvekrans 132kV Power line and associated substation will be decommissioned. However, should this come into effect at a later stage in time, this EMPr will have to be updated to include specific measures and methodologies for the decommissioning activities. Below are the major activities anticipated to occur during decommissioning.

D.1. Waste Management		**Responsibility**	**Frequency**	**Notes**
	D.1.1 Waste Management (a) Waste generation must be managed according to international best practice. (b) All materials that can be recycled must be recycled where possible.	Proponent	In accordance with Eskom specifications and guidelines	
D.2. Emergency Response for Spillages		**Responsibility**	**Frequency**	**Notes**
	D.2.1 Soil Contamination (a) Contaminated soil must be removed and disposed of at an appropriate registered landfill site.	Proponent	In accordance with Eskom specifications and guidelines	

D.3. Decommissioning Activities and associated Heavy Machinery and Equipment		Responsibility	Frequency	Notes
	D.3.1 (a) All decommissioning vehicles should be kept in good working condition; (b) All decommissioning vehicles should be parked in demarcated areas when not in use, and the soil in this area should be rehabilitated (if required); (c) No vehicles, machinery, personnel, construction material, cement, fuel, oil or waste should be allowed outside of the demarcated working areas; (d) No fuel storage, refuelling, vehicle maintenance or vehicle depots should be allowed within 30 m of the edge of any wetlands, drainage lines or farm dams; (e) Vehicles and machinery should not be washed within 30 m of the edge of any wetland, drainage line or farm dams; and (f) No effluents or polluted water should be allowed to discharge into any drainage lines, wetland areas or farm dams.	Proponent	In accordance with Eskom specifications and guidelines	
D.4. Site Rehabilitation of Disturbed Areas Surrounding the Newly Constructed Wolvekrans Substation		**Responsibility**	**Frequency**	**Notes**
	D.4.1 Rehabilitation of the environment surrounding the newly constructed Wolvekrans Substation (a) Ensure that all disturbed areas are stabilised as soon as possible after disturbance / usage. Particular attention must be given to slopes greater than 20° (1:5) and other areas prone to erosion which should be appropriately vegetated. Rehabilitated areas that are susceptible to erosion due to their position in the landscape should be	Proponent	On-going	

	adequately protected by soil conservation measures; (b) Ensure that all construction access roads are closed and the area rehabilitated upon completion of the construction works, unless otherwise specified by the EO and agreed with the landowner; (c) Remove from the site all construction equipment, surplus material, waste and temporary structures and works of every kind before the final hand-over. After completion of construction, the site should be properly cleaned of any construction waste, litter etc. and adequately rehabilitated/re-vegetated (as directed by the ECO); (d) Rehabilitate any environmental damage caused by construction activities before the final hand-over; (e) Removal of all excavated material (rocks, excess soil, etc.) and construction rubble after construction is completed; (f) Re-vegetated areas should be monitored by the Environmental Control Officer within 3 months after re-vegetation and during the next growing season to ensure that the vegetation has stabilised to the level prior to construction; (g) Rehabilitated areas showing inadequate surface coverage (less than 30% within 9 months after rehabilitation) should be prepared and re-vegetated from scratch with a suitable grass mix that is compatible with the surrounding vegetation; (h) Exotic weeds and invaders that are likely to establish on the rehabilitated areas are to be controlled to allow natural vegetation to properly establish; (i) Damage to rehabilitated areas should be repaired promptly; and (j) The erosion risk will be reduced significantly during the dry season (i.e. winter). Therefore, depending on the construction schedule, excavation activities should aim to be focussed during winter.			

Table 2: The rehabilitation schedule and procedure to be adhered to is as follows (this methodology should be updated during the construction phase)

Step	Method	Equipment
1	Remove all construction material from the area where construction has been completed.	To be undertaken by hand
2	The ground should be sloped so as to attain a natural slope and to attain a natural water flow, if it has been altered during construction (the natural slope should be altered as little as possible during construction).	To be undertaken by hand
3	Topsoil that has been stockpiled during construction must be applied to the area to undergo rehabilitation. The depth of the topsoil layer to be applied depends on the natural depth of topsoil in the area, and the amount of topsoil that may have been lost during construction.	Topsoil must be applied from the topsoil stockpiled during construction
4	The area should be mulched to improve water retention, and brushwood applied to act as a soil stabiliser. Mulch and brushwood must be applied more heavily in areas which are presently well-wooded (or as directed by the ECO).	The mulch used should be woodchip, obtained commercially or from trees removed during site clearance. The brushwood is obtained from the bushes and trees removed during site clearance.
5	The naked ground will be seeded with a stabilising grass mix, suited to the conditions. The quantity of seed used will depend on the slope, with a steeper slope requiring a heavier application of seed. For slopes: • >15º: 25-50 kg/ha • <15º: 15-25 kg/ha The natural seed bank in the topsoil will supplement the seed mix applied. These figures should act as a guide only, and the	The seed mix should consist of species naturally found within the surrounding area.

	ECO will determine the correct quantities to be applied.	
6	The areas which have been seeded must be regularly watered directly after seeding until the grass cover becomes established. Watering should ensure that no erosion of the topsoil and seed mix takes place.	A hosepipe must be available on site.
7	If the grasses have not established after a period of two months after seeding, the areas should be reseeded. If necessary, another dressing of topsoil should be applied prior to seeding.	As above
8	Slope stabilisation measures may be necessary in places where grass has not been able to establish and there is an erosion risk. The measures implemented depend on the situation, and can be varied as necessary. The ECO will direct the Contractor as required.	Various slope stabilisation measures are available and vary in effectiveness according to the situation including; • Onion bags • Logs/bark held in place with pegs

ANNEXURE 1

DECLARATION OF UNDERSTANDING BY THE DEVELOPER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:
Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 2

DECLARATION OF UNDERSTANDING BY THE ENGINEER

I, _____

Representing _____

Declare that I have read and understood the contents of the Environmental Management Plan for:
Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 3

DECLARATION OF UNDERSTANDING BY THE CONTRACTOR

I, _____

Representing _____
Declare that I have read and understood the contents of the Environmental Management Plan for:
Contract _____

I also declare that I understand my responsibilities in terms of enforcing and implementing the Environmental Specifications for the aforementioned Contract.

Signed: _____

Place: _____

Date: _____

Witness 1: _____

Witness2: _____

ANNEXURE 4 A

METHOD STATEMENT: Solid Waste Management

CONTRACT:……. **DATE**:……..

WHAT WORK IS TO BE UNDERTAKEN? [Give a brief description of the works to be undertaken on site that will generate waste (hazardous and non-hazardous wastes)]: * Note: please attach extra pages if more space is required.

*__Insert additional pages as required__

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT: Solid Waste Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**……

HOW IS WASTE TO BE MANAGED ON SITE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

DECLARATIONS for Method Statement: Solid Waste Management (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 B

METHOD STATEMENT: Crew Camps and Construction Lay Down Areas

CONTRACT:…… **DATE**:……..

WHAT CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS ARE REQUIRED ON SITE DURING CONSTRUCTION? (Give a brief description of these): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

WHERE ARE THE CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS TO BE LOCATED? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT:
Crew Camps and Construction Lay Down Areas (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**……

HOW ARE CREW CAMPS AND CONSTRUCTION LAY DOWN AREAS TO BE MANAGED? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

DECLARATIONS for Method Statement

Crew Camps and Construction Lay Down Areas (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated: _____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 C

METHOD STATEMENT: Cement and Concrete Batching

CONTRACT:……. **DATE**:……..

WHAT WORK IS TO BE UNDERTAKEN? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT:
Cement and Concrete Batching (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**…….

HOW ARE THE WORKS TO BE UNDERTAKEN? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

DECLARATIONS for Method Statement

Cement and Concrete Batching (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 D

METHOD STATEMENT: Dust Control

CONTRACT:…… **DATE**:……..

WHAT WORK IS TO BE UNDERTAKEN ON SITE THAT COULD GENERATE DUST? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT: Dust Control (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**……

HOW ARE THE WORKS TO BE UNDERTAKEN SO AS TO MINIMISE AND CONTROL DUST GENERATION ON SITE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

DECLARATIONS for Method Statement: Dust Control (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 E

METHOD STATEMENT:
Hydrocarbon and Emergency Spill Procedure

CONTRACT:……. **DATE**:……..

WHAT HAZARDOUS SUBSTANCES (INCL. FUELS) ARE TO BE STORED ON SITE? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

WHERE ARE THE THESE SUBSTANCES TO BE STORED ON SITE? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT:
Hydrocarbon and Emergency Spill Procedures (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**……

HOW ARE HAZARDOUS SUBSTANCES TO BE MANAGED TO AVOID SPILLAGES AND WHAT EMERGENCY PROCEDURES ARE TO BE IMPLEMENTED IN CASE OF A SPILLAGE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

DECLARATIONS for Method Statement

Hydrocarbon and Emergency Spill Procedures (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 F

METHOD STATEMENT:
Fire Management

CONTRACT:……. **DATE**:……..

WHAT WORK IS TO BE UNDERTAKEN? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT:
Fire Management (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**…….

HOW ARE THE WORKS TO BE UNDERTAKEN? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

DECLARATIONS for Method Statement

Fire Management (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 G

METHOD STATEMENT:
Diesel tanks and refueling procedures

CONTRACT:……. **DATE**:…….

WHAT WORK IS TO BE UNDERTAKEN? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required**

WHERE ARE THE WORKS TO BE UNDERTAKEN? (Where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*Insert additional pages as required**

METHOD STATEMENT:
Diesel tanks and refuelling procedures (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**…….

HOW ARE THE WORKS TO BE UNDERTAKEN? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*Insert additional pages as required

DECLARATIONS for Method Statement

Diesel tanks and refuelling procedures (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

ANNEXURE 4 H

METHOD STATEMENT: Noise Control

CONTRACT:…… **DATE**:……..

WHAT WORK IS TO BE UNDERTAKEN ON SITE THAT COULD GENERATE DUST? (Give a brief description of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provide an annotated plan and a full description of the extent of the works): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

METHOD STATEMENT: Noise Control (contd.)

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

Start Date:…….. **End Date:**……

HOW ARE THE WORKS TO BE UNDERTAKEN SO AS TO MINIMISE AND CONTROL DUST GENERATION ON SITE? (Provide as much detail as possible, including annotated sketches and plans where possible): * Note: please attach extra pages if more space is required

*__Insert additional pages as required__

DECLARATIONS for Method Statement: Noise Control (contd.)

1) ENGINEER

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:_____

2) ECO

The work described in this Method Statement, if carried out according to the methodology described, is satisfactory to prevent or control environmental harm and is thus approved:

_____ _____

(Signed) (Print name)

Dated:._____

2) CONTRACTOR

I understand the contents of this Method Statement and the scope of the works required of me. I further understand that this Method Statement may be amended on application to and with approval by the Engineer, and that the SHE Coordinator, Construction Manager and ECO will audit my compliance with the contents of this Method Statement

_____ _____

(Signed) (Print name)

Dated: _____

TYPICAL INCIDENTS INCURRING PENALTIES	VALUE
Failure to secure construction site from public access	R5,000
Failure to demarcate working areas and servitudes and/or maintain fences and/or demarcation tape.	R1,000
Failure to stockpile topsoil correctly (per incident)	R2,000
Failure to stockpile materials in designated areas (per incident)	R500
Discharging effluent and/or polluted stormwater onto the ground or into surface water (per incident)	R2,000
Failure to provide adequate sanitation, waste disposal facilities or services (per incident)	R1,000
Failure to demarcate construction area boundaries before commencing construction clearance and other activities (per incident)	R5,000
Venturing into or undertaking construction related activities within no-go areas, without formal written approval from the ECO (per incident)	R5,000
No induction regarding environmental matters and site housekeeping practices (per employee)	R2,000
Stockpile of soils and materials outside demarcated areas (per incident)	R1,000
Inappropriate mixing of cement/concrete and poor management of concrete slurry (per incident)	R2,000
Burning of waste on site (including cement bags) (per incident)	R 2,000
Untidiness and litter at camp (per incident)	R200
Unauthorised removal of indigenous trees, medicinal or other plants (per incident)	R2,000
Damaging/killing animals/birds (per incident)	R 1,500
Failure to erect temporary fences as required (per incident)	R2,000
Failure to reinstate disturbed areas within the specified timeframe (per incident)	R2,000
Fire – costs of runaway fires will be borne by the Contractor, should he/she be proven responsible for such fires (per incident)	R25,000
Failure to provide adequate equipment for emergency situations (per incident)	R5,000
Defacing, painting or damaging natural or heritage features (per incident) – mandatory removal of employee from site	R5,000
Damaging cultural, historical and/or archaeological sites of importance (per incident) – mandatory removal of employee from site	R5,000
Failure to maintain basic safety measures on site	R1,000
Failure to carry out required community liaison, damage to property etc, without prior negotiation and/or compensation and other social infringements (per incident)	R1,000
Persistent and un-repaired oil leaks from machinery. The use of inappropriate methods of refuelling (per incident)	R2,000
Failure to provide drip trays and/or empty them frequently (per incident)	R500

TYPICAL INCIDENTS INCURRING PENALTIES	VALUE
Inappropriate use of bins and poor waste management on site (per incident)	R500
Inappropriate off-site disposal of waste from site (per incident)	R10,000
Deliberate lighting of illegal fires on site (per incident)	R1,000
The eating of meals on site outside the defined eating area. Individual not making use of the site ablution facilities (per incident)	R200
Inappropriate use of adjacent watercourses and water bodies – such as for unapproved water abstraction, washing of vehicles, wastewater disposal and use by employees for washing (per incident)	R1000
Any person, vehicle, item of plant, or anything related to the Contractor's operations causing a public nuisance (per incident)	R500
Construction vehicles not adhering to speed limits (per incident)	R200
Failure to maintain and register incidents in the incident register (per incident)	R1,000
Failure to remove all temporary features and leftovers from the construction site and works areas upon completion of the works (per incident)	R50,000
Any contravention with a Method Statement (per incident)	R5,000
Repeated contravention of the specifications or failure to comply with instructions (per incident)	R5,000

NOTE: THE SUBJECTION AND PAYMENT OF A PENALTY DOES NOT ABSOLVE THE CONTRACTOR FROM FULLY REMEDYING ANY TRANGRESSION OR ENVIRONMENTAL DAMAGE. SHOULD THE CONTRACTOR FAIL TO ADDRESS HIS NON-CONFORMANCE, ESKOM HAS THE RIGHT TO REMEDY THE INCIDENT AND RECOVER THE COSTS FROM THE CONTRACTOR.

ANNEXURE 5

INCIDENT AND ENVIRONMENTAL LOG

ENVIRONMENTAL INCIDENT LOG				
Date	**Env. Condition**	**Comments** *(Include any possible explanations for current condition and possible responsible parties. Include photographs, records etc. if available)*	**Corrective Action Taken** (*Give details and attach documentation as far as possible)*	**Signature**

Document Control
Form IP180_B

CLIENT	:	Eskom Holdings (SOC) Ltd, Eskom Distribution – Gauteng Operations Unit (Eskom)
PROJECT NAME	:	Wolvekrans- 132kV Powerline and Associated Substation
PROJECT NO	:	J35566
TITLE OF DOCUMENT	:	Environmental Management Programme
ELECTRONIC LOCATION	:	J35566 Wolverkrans EMP_v3_2016.09.20.docx

	Approved By	**Reviewed By**	**Prepared By**
ORIGINAL	**NAME** **Umeshree Naicker**	**NAME** **Chevonne Stevens**	**NAME** **Kavesha Damon**
DATE **2016/09/21**	**SIGNATURE**	**SIGNATURE**	**SIGNATURE**

GIBB (Pty) Ltd

Website	:	www.gibb.co.za			
Postal Address	:	P.O. Box 2700, Rivonia, 2128	Physical Address	:	54 Maxwell Drive, Woodmead North Office Park, 2191
Contact Person	:	U Naicker	Email Address	:	unaicker@gibb.co.za
Telephone No.	:	011 519 4701	Fax No.	:	011 807 5670