DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED DEVELOPMENT OF APPROXIMATELY 170KM 1X400kV MAPHUTHA-WITKOP POWERLINE WITHIN THE JURISDICTION OF SEKHUKHUNE AND CAPRICORN DISTRICT MUNICIPALITIES IN THE LIMPOPO PROVINCE

OCTOBER 2018

DOCUMENT CONTROL

PROJECT TITTLE:

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED DEVELOPMENT OF APPROXIMATELY 170 1X400kV MAPHUTHA-WITKOP POWERLINE WITHIN THE JURISICTION OF SEKHUKHUNE AND CAPRICON DISTRICT MUNICIPALITIES IN THE LIMPOPO PROVINCE

QUALITY CONTROL		
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ACRONYMS

CARA	Conservation of Agricultural Resources Act (Act 43 of 1983)
CBA	Critical Biodiversity Areas
SEO	Site Environmental Officer
DAFF	Department of Agriculture, Fisheries and Forestry
DEA	Department of Environmental Affairs
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EA	Environmental Authorisation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
HSA	Hazardous Substance Act (Act 15 OF 1973)
HIA	Heritage Impact Assessment
KM	Kilometres
NEMA	National Environmental Management Act (Act 107 of 1998)
NEMWA	National Environmental Management Waste Act (Act 36 of 2008)
NEMAQA	National Environmental Air Quality Act (Act 39 of 2004)
NEMBA	National Environmental Management Biodiversity Act (Act 10 of 2004)
NHRA	National Heritage Resources Act (Act 25 of 1999)
NWA	National Water Act (Act 36 of 1998)
OHSA	Occupational Health and Safety Act (Act of 85 of 1993)
SACNASP	South African Council of Natural Scientist Profession
SAHRA	South African Heritage Resources Agency
TLB	Tractor Loader Backhoe
Tx	Transmission
WULA	Water Use Licence Application
SSC	Species of Special Concern
SCC	Species of Conservation Concern
MS	Method Statement

1. INTRODUCTION

Nsovo Environmental Consulting (hereafter Nsovo) has been appointed by Eskom Holdings SOC Ltd (hereafter Eskom) to compile an Environmental Management Programmed (EMPr) as part of the Environmental Impact Assessment process, which will be a guideline for the mitigation and management measures to be implemented during the construction phase of the proposed project. This EMPr is a living document that guides the day to day activities throughout the lifecycle of the project; it may from time to time, require revisions as be dictated by the course of construction.

This EMPr has been compiled for the proposed development of an approximately 170km 400kV powerline within the jurisdiction of Sekhukhune and Capricorn District Municipalities in the Limpopo Province. The proposed development will have impacts on the environment and surrounding communities;as such an Environmental Authorisation (EA) needs to be obtained prior to commencement of the activity/ies in accordance with the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998) [NEMA] and the Environmental Impact Assessment (EIA) Regulations of 2014 as amended in April 2017 (hereafter referred as the Regulations). It is therefore imperative that precaution measures are taken to ensure that environmental degradation is minimised while the project is undertaken. This will take a concerted effort from the project team and proper planning is of the utmost importance

This EMPr is applicable to all Eskom employees, contractors and subcontractors working on the development of the proposed project. The document will be adhered to and updated as necessary and such changes to the EMPr must be undertaken in accordance with the requirements of the NEMA; EIA Regulations and any other legislation relevant at the time. This EMPr has been developed to ensure compliance with the requirements of the National legislative and other relevant regulatory requirements and it forms part environmental impact assessment report.

2. DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Nsovo has been appointed by Eskom as the independent Environmental Assessment Practitioner (EAP) for the proposed project and meets the general requirements as stipulated in Regulations 13 (3) of the NEMA EIA 2014 Regulation as amended. Nsovo therefore is:

- Independent and objective;
- Has expertise in conducting EIA's;
- Takes into account all relevant factors relating to the application; and
- Provides full disclosure to the applicant and the relevant environmental authority.

Table 1 below provides the details of the EAP and relevant experience. A detailed CV and qualifications of the EAP is attached as **Appendix E1**.

Table 1: Details of the Environmental Assessment Practitioner (EAP)

Name of Company	Nsovo Environmental Consulting
Person Responsible	Masala Mahumela
Professional Registration	South African Council for Natural Scientific Professions (SACNASP)
Postal Address	P/Bag x29 Post net Suite 697 Gallo Manor 2052
Telephone Number	011 041 3689
Fax Number	086 602 8821
Email	Masala.mahumela@nsovo.co.za
Qualifications & Experience	B.Sc. Honours Environmental Management 10 years of experience
Project Related Expertise	In terms of project related expertise, the EAP has worked on the following projects: • EIA for the proposed Shongweni substation and Hector - Shongweni 400kV powerline in KwaZulu Natal Province. • EIA for the proposed Inyaninga substation and Inyaninga – Mbewu 400kV powerline in KwaZulu Natal Province. • EIA for the proposed Tubatse strengthening Phase 1 – Senakangwedi B integration within the jurisdiction of Greater Tubatse Local Municipality in Limpopo Province. • CEMPr, WULA and EA amendment for the proposed Juno - Gromis 400kV power line.

	• Basic Assessment for the proposed Decommissioning and Demolition of Verwoedberg Substation and 275kV power.

3. PURPOSE AND SCOPE OF THE EMPR

The EMPr sets out general environmental specifications, which are applicable to the construction activities associated with the proposed project. This document serves as a guideline for the management of the site and provides specifications and regulations that must in all instances be adhered to. It is the responsibility of all parties, including contractors and sub-contractors involved in the project to commit themselves to the implementation of the construction and operation EMPr in all phases of the project. The purpose of this EMPr is to give effect to precautionary measures, which are to be put in place for monitoring the activities that will take place on site. It has been developed to ensure compliance with the national legislative and regulatory requirements as well as Eskom's guidelines associated with projects of a similar nature.

The objectives of the EMPr are to:

- Ensure that the activity is undertaken in compliance with all statutory and regulatory environmental requirements;
- Ensure that the most updated Eskom Transmission's Environmental Policy is underwritten at all times;
- All landowners special conditions are identified and taken into consideration;
- Ensure that all environmental conditions stipulated in the EA are implemented;
- Detail mitigation measures, time-frames and criteria for assessing the success or failure of each measure;
- Provide detailed monitoring programmes to ensure compliance;
- Provide input and strategies for environmental quality control and risk management;
- To preserve the natural environment by limiting destructive actions on site;
- Ensure appropriate restoration of areas affected by construction; and
- Prevent long term environmental degradation.

4. PROJECT DESCRIPTION

The forecasted high growth rate between 2013 and 2030 is expected to exceed the maximum transfer capability of the Eskom transmission network supplying the Tubatse area due to recent developments of platinum and ferrochrome mines. The existing 400kV powerline network will be unable to cater for these recent and other proposed developments in the area. The primary objective of the proposed project is to develop a network strengthening solution for the Tubatse area, which will result in a Grid

Code compliant network in response to the forecasted high growth rate between 2013 and 2030 which is expected to exceed the maximum transfer capability of the transmission network supplying the area. Consequently, Eskom proposes to construct the new Maphutha-Witkop 400kV transmission powerline in order to mitigate the short-term network reliability constraints and also to create additional capacity for the forecasted load in the Tubatse area.

4.1. DESCRIPTION OF LOCALITY OF THE PROJECT

Figure 1 below shows a locality map of the proposed study area at a scale of 1:50 000. The proposed study area is currently used for various purposes and this includes but not limited to farming, residential, mining and other related activities. Refer to **Appendix A** for the locality and sensitivity maps.

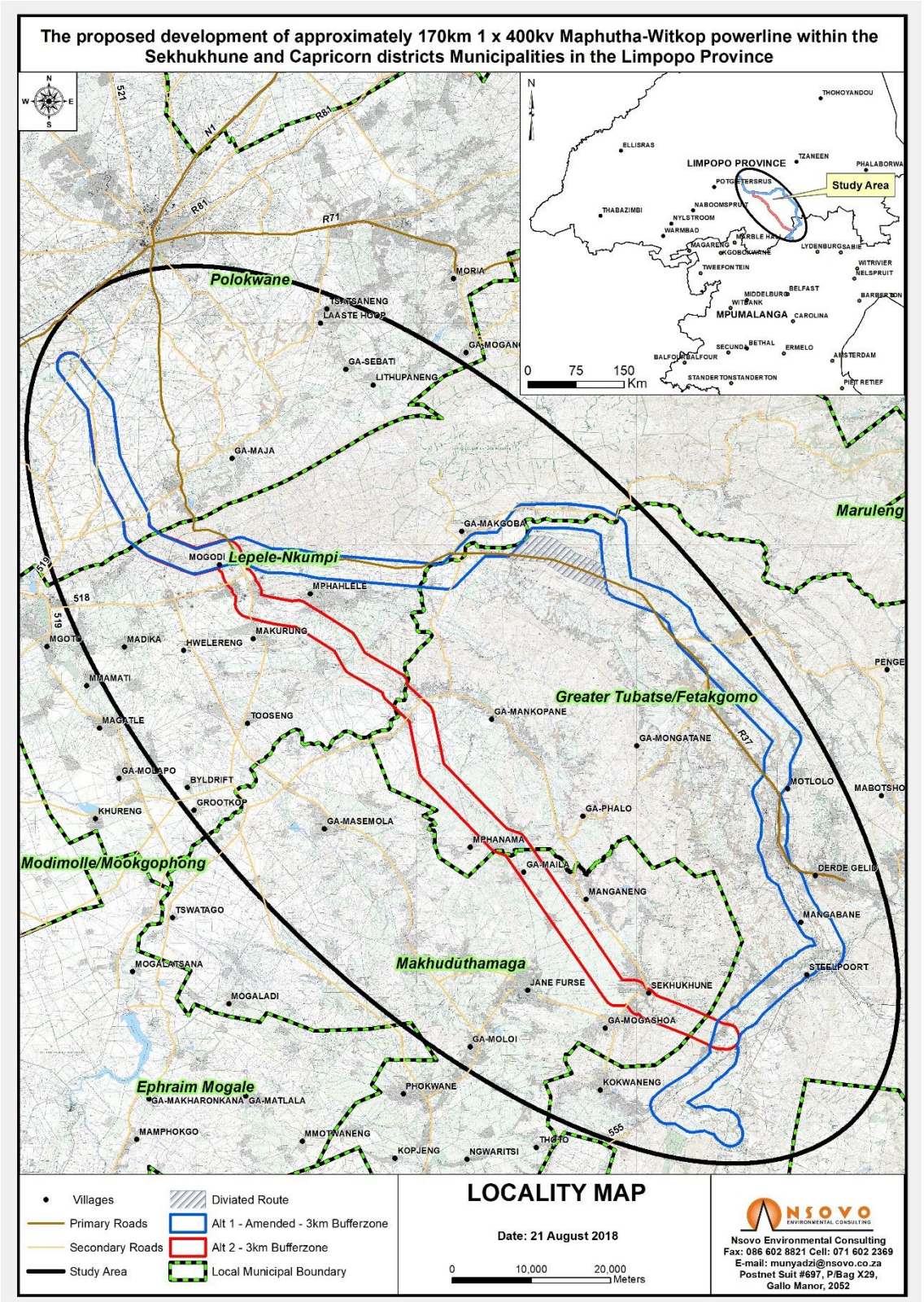

Figure 1: Locality map of the study area

The proposed project will traverse various villages and farm Table 2 below indicates the GPS coordinates of the start, middle and end points for the powerlines alternatives as follows:

Table 2: The GPS coordinates of the start, middle and end points for the powerlines corridor alternatives

Alternatives	Start	Middle	End
Alternative 1	24°02'52.13"S 29°21'24.71"E	24°18'16.61"S 29°59'57.28"E	24°53'15.23"S 30°01'53.68"E
Alternative 2	24°02'52.13"S 29°21'24.71"E	24°24'30.30"S 29°43'27.32"E	24°53'15.23"S 30°01'53.68"E

5. APPLICABLE LEGISLATION

In accordance with the requirement of Appendix 2 Section 1(e) of the Regulation description of applicable legislations in the EMPr is provided herein. Table 3 below list and describe the acts and legislations applicable to the proposed project which are considered to be pertinent to the proposed development.

Municipal policies, plans and by-laws as well as Eskom policies and best practices were considered during the compilation of the EMPr. The list of legislations applicable to the project is not an exhaustive analysis; however, it provides a guideline to the relevant aspects of each act.

Table 3: **Legislation pertaining to the proposed project**

Aspect	Relevant Legislation	Brief Description
Environment	National Environmental Management: Act 1998, (Act No. 107 of 1998)	The overarching principles of sound environmental responsibility are reflected in the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) apply to all listed projects. Construction and operation of activities have to be conducted in line with the generally accepted principles of sustainable development, integrating social, economic and environmental factors. This EMPr forms part of the Environmental EIA process which is in compliance with the NEMA and the EIA Regulations of December 2014 as amended. The proposed development involves "listed activities", as defined by NEMA. Listed activities are activities which may potentially have detrimental impacts on

Aspect	Relevant Legislation	Brief Description
		the environment and therefore require EA from the relevant Competent Authority, in this case the DEA.
Biodiversity	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	The purpose of the National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed.
Protected Areas	National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003)	The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.
Heritage Resources	National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The National Heritage Resources Act, 1999 (Act No. 25 of 1999) legislates the need for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 ha. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).
Air quality management and control	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)	The objective of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of air quality and to prevent air pollution. The Act makes provision for measures to control dust, noise and offensive odours. Section 32 of The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) deals with dust control measures in respect of dust control. Whilst none are promulgated at present, it provides that the Minister or MEC may prescribe measures for the control of dust in specified places or areas, either in general or by specified machinery or in specified instances, the steps to be taken to prevent nuisance or other measures aimed at the control of dust

Aspect	Relevant Legislation	Brief Description
Noise Management and Control	Noise Control Regulations in terms of the Environmental Conservation, 1989 (Act 73 of 1989)	The assessment of impacts relating to noise pollution management and control, where appropriate, must form part of the EMPr. Applicable laws regarding noise management and control refer to the National Noise Control Regulations issued in terms of the Environment Conservation, 1989 (Act 73 of 1989).
Water	National Water Act, 1998 (Act 36 of 1998)	This Act provides for fundamental reform of law relating to water resources and use. The preamble to the Act recognises that the ultimate aim of water resource management is to achieve sustainable use of water for the benefit of all users and that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users. There is watercourses located proximity to the proposed Corridors. It is highly likely that proposed project will traverse or encroach on water resources; therefore, the necessary licence (WUL) will be obtained in due course.
Agricultural Resources	Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	The Act aims to provide for control over the utilization of natural agricultural resources in order to promote the conservation of the soil, water resources and vegetation and to combat weeds and invader plants. Section 6 of the Act makes provision for control measures to be applied in order to achieve the objectives of the Act.
Human	The Constitution of South Africa, 1996 (Act No. 108 of 1996	The Constitution of South Africa, 1996 (Act No. 108 of 1996) provides for an environmental right (contained in the Bill of Rights, Chapter 2). The state is obliged "to respect, protect, promote and fulfil the social, economic and environmental rights of everyone…" The environmental right states that: "Everyone has the right - a) To an environment that is not harmful to their health or well-being; and

Aspect	Relevant Legislation	Brief Description
		b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that - • Prevent pollution and ecological degradation; • Promote conservation; and • Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."
Waste	National Environmental Management: Waste Act 59 of 2008	This act provides fundamental reform of the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development. This act also ensures the provision of national norms and standards for regulating the management of waste by all spheres of government. The National Environmental Management: Waste Act provides for specific waste management measures; licensing and control of waste management activities; remediation of contaminated land; compliance and enforcement; and for matters connected therewith.

6. STANDARD ESKOM POLICIES TO BE COMPLIED WITH

In addition to the approved EMPr, the EA and other permits and licenses, the construction activities must also comply with the standard Eskom documents listed below. It is the responsibility of all parties involved in the implementation of the EMPr to ensure that the most recently updated Eskom policies/documents are used.

- Standard for bush clearance and the maintenance of overhead power lines (ESKASABG3);
- Eskom Procedure for Vegetation Clearance and Maintenance within overhead power line servitude and on Eskom owned Land (EPC 32-247);
- Oil spill clean-up and rehabilitation (ESKAGAAD7);
- Eskom Environmental Waste Management Procedure (EPC 32 – 245);
- Eskom Environmental Liaison Committee (ELC) Performance Indicator Reporting Procedure (EPC 32 -249);
- Transmission Environmental Management System Manual (TMN 41 – 417);

- Transmission Emergency Preparedness and response procedure. In accordance with ISO 14001:2004 clause 4.4.7 (TPC 41 – 460);
- Transmission Environmental Aspects and Management Programmes / Plans requirements procedure (TPC 41 – 213);
- Transmission Environmental Legal, other requirements and evaluation of compliance procedure (TPC 41 -505);
- The Standard for the construction of overhead power lines (TRMSCAAC5);
- Transmission Environmental monitoring and measurement procedure (TPC 41 – 118); and
- Transmission Vegetation Management Guideline (TGL 41 – 334).

7. DETAILING METHOD STATEMENTS FOR THE ACTIVITIES TO BE CARRIED OUT

The environmental specifications are required to be underpinned by a series of Method Statements (MS), within which the Contractors and Service Providers are required to outline how any identified environmental risks will practically be mitigated and managed for the duration of the contract, and how specifications within this EMPr will be met. That is, the Contractor will be required to describe how specified requirements will be achieved through the submission of written Method Statements to the Eskom's construction team, Site Manager and ECO prior to commencement of activities on site:

The Method Statements must cover applicable details with regard to:

- The type of construction activity.
- Where the activity will take place.
- Identification of impacts that might result from the activity.
- Identification of activities or aspects that may cause an impact.
- Methodology and/or specifications for impact prevention for each activity.
- Methodology and/or specifications for impact containment for each activity.
- Emergency/disaster incident and reaction procedures.
- 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 material that may occur;
- Timing and location of activities;
- Compliance/non-compliance with the Specifications; and
- Any other information deemed necessary by the Site Manager.

Specific method statements required may include but not limited to:

- Vegetation clearing;
- Site establishment and site layout plan
- Fauna and Flora management;
- Excavations for installation of pylons;
- Chemical/hazardous substance storage;
- Workshop and Material Equipment Storage
- Plant- Refuelling
- Cement/concrete use;
- Logistics of the environmental awareness training;
- Fire management;
- Emergency response;
- Storm water and soil erosion management;
- Waste management;
- Servitude and Access road(s);
- Contaminated water management;
- Temporary site closure;
- Site Rehabilitation;
- Blasting;
- Alien plants removal and use of herbicides and pesticides; and
- Dust suppression.
- Noise Control

The above is not exhaustive list of the required MS; there may be other activities/aspects that may require same prior to the commencement of the work. The ECO and site manager may require more MSs to be submitted as the project progresses.

8. PROJECT TEAM

8.1. ROLES AND RESPONSIBILITIES OF THE PROJECT TEAM

8.1.1. Environmental Control Officer

An independent ECO must be appointed throughout the construction and rehabilitation phases to provide an on-site environmental management service to Eskom. The ECO will be responsible for monitoring, reviewing, and verifying compliance by the Contractor with the environmental specifications. In addition ECO will generally be responsible for the planning and management of all environmental activities in order to ensure effective implementation of EA, EMPr, landowner conditions and applicable permits and licences. More specifically the ECO will undertake the following responsibilities.

Communication Services

- To liaise closely with the Eskom and Contractor's Environmental Officer (SEO).
- To ensure that the landowner agreed General and Special Conditions are implemented.
- To agree with landowner on the bush clearing method.
- To assist in conflict resolution.
- To ensure that the Contractor rehabilitates any damage caused during construction.
- To indicate where bird guards, bird diverters, bird lights and aviation warning spheres are to be installed as specified in the EMPr, EA conditions and or the line profile.
- After the final rehabilitation has been completed on a property, to obtain the immediate release from the landowner.

Environmental Management

- Monitoring of site environmental progress in respect of time, deliverables and quality.
- Liaison between Project Manager, SHEQ/SHE/Environmental Manage, Senior Environmental Advisor, Site Supervisor, SEO, affected and interested parties, authorities and stakeholders on environmental matters.
- Recommending EMPr modifications to the Project/SHEQ/SHE/Environmental Manager as and when the particular site conditions warrant it.
- Communicating changes of the EMPr to all relevant parties.
- Maintaining climatic data on an ECO register using Eskom/Contractor EO readings.
- Issuing Contractors Communications and Site Instructions via the Site Supervisor or delegated person as delegated by the Project Manager.
- Monitoring performance of Contractor and sub-contractors to ensure compliance with environmental and statutory requirements.
- Validating the regular site inspection reports prepared by the SEO.
- Checking the SEO's record of environmental incidents (spills, impacts, legal transgressions, etc.) as well as corrective and preventive actions taken.

- Checking the SEO's complaints register in which all complaints are recorded, as well as actions taken.
- Assisting in the resolution of environmental related conflicts.
- Compiling and completing the environmental management related component of the handing-over documentation and any other related documents.
- Timorously identifying any sensitive site issues which may affect environmental aspects and the reporting of this to the Project/SHEQ/SHE/Environmental Manager.
- Monitoring that good housekeeping practices are followed and maintained by the Contractor.
- Monitoring that the ground rehabilitation is initiated on time, complying with the EA, EMPr and to the satisfaction of the landowner.
- Assisting the Contractor and Eskom EO with the environmental awareness training course to all site staff, targeted at the level of the workers so that they have a basic understanding of the environment that they are working in. The Contractor will provide an interpreter if needed.
- Monitoring that sensitive areas are demarcated within or alongside the construction areas i.e. sites identified in the EMPr, EA. All personnel are to be informed of such sites and the reason the site is demarcated.

Monitoring

- Validating the site environmental monitoring plan.
- Validating the "Punch List/daily pre-warning" and reporting all defects and non-conformances as per the Control of Nonconformity Procedure.
- Carrying out environmental surveillances.
- Validating and recording of certificates proving the legal disposal of waste streams.

Reporting

- To complete a daily diary and monthly reporting to Land and Rights and the Project/SHEQ/SHE/Environmental.
- To prepare monthly monitoring reports for submission to the DEA, Environmental Compliance Section as and when required.
- Manage the compliance of the Contractor according to the Environmental Authorization, EMPr and landowner conditions. The reports are to include photographic images of special occurrences taking place during the reporting period.
- To attend site meetings as required.
- To inform Land Development and Management and the Project/SHEQ/SHE/Environmental Manager of any activity that is not in accordance with the EA and respective Conditions, the EMPr and Landowner' agreed general and special conditions or detrimental to the environment.

Administration

- To assure a proper site ECO administration function to cater for all environmental site related correspondence.

- To execute environmental responsibilities as per Eskom's Risk Management System.
- To promote and maintain sound relationships with the landowner, community, Contractors and suppliers.

8.1.2. Contractor

- To provide all necessary supervision during the execution of the project and be available on site at all times;
- To appoint a competent Contractor Environmental Officer (SEO);
- To implement the projects as per the approved project plan;
- To ensure that implementation is conducted in an environmentally acceptable manner;
- To fulfil all obligations as per the agreed contract;
- To comply with special conditions as stipulated by Landowners during the negotiation process;
- To inform and educate all employees about the environmental risks associated with the different construction activities and lessen significant impacts to the environment;
- Eskom Environmental Representative to implement and integrate environmental management systems by ensuring compliance to ISO 14001 & monitoring performance;
- Report environmental incidents;
- Provides environmental training; and
- Ensures compliance with pertinent environmental legislations and other legally binding documents.

8.1.3.Authorising Department

The role of the Authority is to enforce compliance with the EA and the EMPr.

9. DESCRIPTION OF MITIGATION MEASURES

This section serves to prescribe mitigation measures to prevent, reduce, eliminate or compensate for impacts, to acceptable/insignificant levels.

9.1. PRE-CONSTRUCTION MANAGEMENT PROGRAMME

The pre-construction management programme is to be used as a guideline during the planning, design and detailing of the development components. This part of the programme is to be referenced by all personnel involved in decision making during the planning and design phases.

9.1.1. Negotiations with affected landowners

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure that landowners are aware of activities taking place within their properties.	• Ensure that all affected landowners are negotiated with prior to construction. • Ensure that landowner's special conditions are recorded and implemented.	• Signed landowner consent forms.	• Eskom.	• Prior commencement of construction activities.

9.1.2. Commissioning of tender

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Ensure that proper environmental conditions are established prior to commencing with construction activities by informing all parties of appropriate environmental protection measures.	• The successful tendering Contractors will be made aware of the contents of this EMPr and any penalties arising from non-compliance prior to the commencement of the work. • All tendering Contractors will be made aware of the audit and monitoring requirements as stipulated in this EMPr. • Appoint a suitably qualified independent Environmental Control Officer (ECO) who will be responsible to monitor compliance to the EMPr.	• Signed Declaration by contractor. • Appointment Letter. • Proof of submission to DEA.	• Eskom. • Contractor.	• Prior commencement of construction activities.

9.2. CONSTRUCTION MANAGEMENT PROGRAMME

9.2.1.Site establishment

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure minimal disturbance of the environment during the site establishment.	Prior to establishment of construction and associated infrastructure, the Project Manager and ECO must Identify suitable areas for the establishment of site office and construction camp on least sensitive locations preferably within already disturbed areas. Once these items have been addressed, site establishment shall take place in an orderly manner and all amenities shall be installed before the main workforce moves onto site. Construction camps on the site must be established Post construction of the development rehabilitation must be done in accordance with the rehabilitation plan and/or approved Method Statement. **9.2.1.1. Site Plan:** Documentation for the proposed camp site must be prepared by the Contractor prior to the commencement of construction activities and must be submitted to Eskom for approval. This documentation must include, but not limited to the following: • Site access (including entry and exit points); • All material and equipment storage areas including storage areas for hazardous substances;	• Observation. • Site Plan. • Landowner agreements.	• ECO • Contractor • SEO	• Prior to site establishment

	• Construction of offices and other associated infrastructure; • Security requirements including temporary and permanent fencing and lighting; • Solid waste management facilities; • Storm water control measures; and • Provision of potable water and mobile chemical ablution facilities. Throughout the period of construction, the Contractor shall restrict all activities within the designated areas as per the construction layout plan. Any modification of the construction layout plan is to be approved by the ECO. **9.2.1.2. Site Camps:** The following restrictions must be placed on the site camp for the construction staff in general: • The use of water courses for domestic purposes such washing clothes, drinking and bathing; • The use of welding equipment, oxy-acetylene torches and other bare flames where veld fires can be a hazard; • Collection of firewood; • Poaching of any form; and • Use of surrounding veld as toilets. **9.2.1.3. Vegetation clearing:**			

	• The natural vegetation encountered on site is to be conserved and left intact as much as possible. • Only vegetation within the approved construction footprint must be cleared. Clearance must be as per the approved Method Statement in line with Eskom policies. • Search and rescue must be done by a Specialist in consultation with the ECO. **9.2.1.4. Water for human consumption:** Potable water must be available at all times. **9.2.1.5. Sewage Treatment:** • Chemical toilets must be supplied (1 per 15 persons) and must be regularly cleaned and maintained by the Contractor. • The Contractor must arrange for regular emptying of toilets by a suitably qualified and registered service provider; and must be entirely responsible for enforcing their use and maintenance. • The ablution facilities must be at least 100m distance from the watercourses and associated buffers. • All ablution facilities must be anchored to prevent them from being toppled by the wind.			

9.2.2.Sensitive Ecology

Objective/s	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure that the sensitive areas are not disturbed. • To ensure minimal or no disturbance to the vegetation on and around the site. • To prevent negative impact on both flora and fauna.	Sensitivity assessment was conducted by the ecologist within the proposed corridors and large tracts of the corridors have either been transformed for crop production or heavily degraded as a result of overgrazing which has reduced the potential sensitivity of these areas. Therefore, the following general conditions must be adhered to: • The powerline profile must be designed so as to avoid areas of high sensitivity and CBAs. • Demarcate the authorised construction footprint to avoid unnecessary vegetation clearing. Ensure that 'No-Go' areas are clearly demarcated and/or fenced before construction activities commence. Barriers must be maintained in good order throughout the course of the construction. • The natural vegetation encountered on the site must be conserved and left intact as much as possible. • Only vegetation directly affected by the works may be felled or cleared. • No open fires are permitted within naturally vegetated areas. • Formalise access roads and make use existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.	• Observation. • ECO to monitor • Site plan.	• Eskom. • Contractor.	• Prior to construction

Objective/s	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• Retain vegetation and soil in position for as long as possible in that area (DWAF, 2005). • No bush clearing is to be undertaken without the knowledge of the property owner. It is recommended that the owner is informed of the basic construction process during initial interaction so that they are aware of the vegetation clearing that will occur. • Only manual removal of weed will be permitted on site. Chemical and mechanical (TLB, bulldozer) control is not allowed on site. • Implement an alien invasive plant monitoring and management plan whereby the spread of alien and invasive plant species are regularly removed and re-infestation monitored on site. • Any fauna threatened by construction activities must be removed to safety by the ECO or other suitably qualified person. • During construction all vehicles must adhere to demarcated tracks or roads and the speed limit must not exceed 40km/h on larger roads and should be 20-30km/h on smaller access tracks. • Where necessary, dust suppression must be implemented to reduce dust impacts on surrounding areas. • All construction staff must undergo environmental induction before construction commences in order to raise awareness and reduce potential faunal impacts.			

Objective/s	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• To avoid impacts on amphibians, all spills of hazardous material should be cleared in the appropriate manner according to the nature and identity of the spill and all contaminated soil removed from the site. • Avoid sensitive faunal habitats such as drainage lines and wetlands.			

9.2.3. Materials handling, use and storage

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure safe handling, storage use and disposal of hazardous substances. • To ensure full compliance with the requirements of the applicable legislation.	The Contractor's management and maintenance of plant and machinery will be strictly monitored according to the criteria given below: **9.2.3.1. Safety:** • All the necessary handling and safety equipment required for the safe use of hydrocarbons shall be provided by the Contractor to be used and/or worn by the staff. • The Contractor must comply with the Occupational Health and Safety Act (Act 85 of 1993) and Construction Regulations, 2003 as this governs what the Contractor must do and provide for his staff. **9.2.3.2. Hazardous Material Storage:** • Hydrocarbons and hazardous substances will only be stored in a secured, designated area with restricted entry.	• Observation • Incident Report	• ECO; • Contractor; and • SEO.	• Continuous throughout the construction phase

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• Storage of hazardous products will only be in suitable containers. The containers must indicate the nature of the stored materials and Material Safety Data Sheets (MSDS). • All hydrocarbons, irrespective of the volumes shall be stored on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 110% of the total capacity of all the storage tanks. • Gas welding cylinders and LPG cylinders must be stored in a secure, well-ventilated area. The Contractor must supply sufficient fire fighting equipment in the event of an accident and strictly no smoking will be allowed where fuel is stored and used.			

9.2.4.EMPr training

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure that all site personnel have basic level of environmental awareness training.	• The SEO shall arrange for Environmental Awareness Training programs for all personnel on site. • The training must include the content of the EMPr and the SEO must sensitise the team on the importance of compliance. • Weekly toolbox talks must be undertaken by the SEO and proof including attendance register and training content kept in the file.	• Signed training attendance Register • Declaration of good conduct signed by all site personnel	• SEO.	• Prior construction and to continue throughout construction through toolbox talks.

9.2.5.Water supply

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure availability of water for various uses as and when required. • To ensure that water usage is minimized. • To conserve water resources at all times. • To encourage a 3R (Reduce, Reuse, Recycle).	• The Contractor must ensure that all water sources are authorised and proof of such must be presented to the ECO. • Contractor must ensure absolute conservation of water throughout construction. • If possible grey water must be used for dust suppression. • Contractor must supply potable water for human consumption at all times.	• Water consumption record	• ECO • Contractor	• On-going during the construction phase

9.2.6. Vehicular access and movement of construction vehicles

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Damage to protected /endangered vegetation. • Damage to sensitive areas. • Erosion and loss of topsoil.	• To prevent ecological damage. • Minimise damage to the identified watercourses. • Minimise erosion of	• CARA. • NEMBA. • NWA.	• A physical access Method Statement along the servitude shall be compiled by the Contractor and approved by the ECO. • Access roads will be maintained by the Contractor. The Contractor will erect and maintain marker pegs along the boundaries of the working areas, access roads, haul roads or paths before commencing any other work. If proven	• Access plan approved by the ECO • No complaints from landowners. • No access roads through wetlands • No visible erosion scars	• Photographic record of private roads prior to the Contractor using the roads. Site plan • Regular monitoring of access roads	• ECO; • Contractor & SEO	• Continuous during the construction phase.

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	embankments and subsequent siltation of watercourses.		insufficient for control, these will be replaced by other suitable methods. • Ensure that access roads to the site are of a suitable quality to eliminate soil erosion and channel storm water. • No illegal use of private roads during construction. • The Contractor shall sign post the access roads, immediately after the access has been negotiated. • No roads shall cut through water courses as this may lead to erosion causing siltation of streams. • All negotiated existing private access roads used for construction purposes shall be maintained at all times to ensure that the land owners have free and easy access to and from their properties. • Where new roads are required, the disturbed area must be kept minimal (A two track dirt road will be the most preferred option). • The Contractor must not construct a road with a reserve wider than 13, 5 metres, or where no reserve exists where the	once construction is completed • Erosion is not evident on slopes. • Use of designated access roads. • No complaints from the landowners. • No destruction of or damage to known archaeological sites.	conditions • Monitoring of impacts into the surrounding areas.		

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			road is wider than 8 metres as this triggers a listed activity as per 2014 EIA Regulation. • Upon completion of the project all roads shall be repaired/rehabilitated to their original state. • All existing farm roads (private roads) damaged during the construction phase, must at the end of construction be repaired/rehabilitated to the satisfaction of the landowner, as per the conditions of the written contractual agreement between the landowner and the Contractor.				

9.2.7.Movement of construction personnel and equipment

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on sensitive environs. • Trespassing • Safety and security.	• To ensure controlled and manageable movement of personnel and	• TRMPV ACV2 REV1	• The Contractor must ensure that all construction personnel, labourers and equipment remain within the demarcated construction sites at all times. • Where construction personnel move outside the boundaries of the site, the	• No trespassing of contractor's workforce. • No complaints from landowners	• Observation. • Security registers. • Complaints register.	• ECO; and • Contractor.	• Continuous throughout the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	equipment .		Contractor/ labourers must obtain permission from the SEO. • All equipment moved onto site or off site is subject to the legal requirements as well as Eskom specifications for the transport of such equipment. The Contractor shall meet these safety requirements under all circumstances. • All equipment transported shall be clearly labelled as to their potential hazards according to specifications. • All the required safety labelling on the containers and trucks used shall be in place. • The Contractor shall ensure that all the necessary precautions against damage to the environment and injury to persons are taken in the event of an accident and shall provide a Method statement to that effect. • The Contractor is to ensure that no machinery, personnel, material, or equipment enters 'No-Go' areas during the course of the project.				

9.2.8.Protection of avifauna

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Displacement of avifauna as a result of habitat loss or transformation • Displacement of Avifauna as a result of disturbance • Damage to habitat • Negative impact on bird due to electrocution and faulting • Negative impact on animal life.	• To avoid or prevent the displacement of avifauna. • To prevent the disturbance of avifaunal habitat. • To conserve animal life. • To ensure that impact on natural vegetation is kept to the minimum in order to conserve suitable habitats as much as possible.	• NEMBA	The broader area within which the study area located is home to an exceptionally broad diversity of bird species. Therefore, the following measures must be implemented: • Construction activity must be restricted to the immediate footprint of the infrastructure. • Access to the remainder of the site must be strictly controlled to prevent unnecessary disturbance of Red Data species. • Installation of effective Eskom Approved anti bird collision line marking devices to make the cables more visible to birds must be in place. • Installation of Bird Guards on high risk towers to ensure that large birds cannot perch directly above the relevant live hardware.	• No reported faunal injuries • No complaints from landowners	• Observation • Complaints register that records complaints from landowners • Daily inspection	• ECO; and • SEO.	• On-going during the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• To prevent degradation of suitable sensitive fauna habitats. • To prevent contamination of water within the nearby watercourse thereby preserving several amphibian species. • To ensure that impact on sensitive fauna species is kept to a minimum		• Any bird nests that are found must be left intact/undisturbed and must be reported to the Environmental Control Officer (ECO). • The pylons must be located on the least sensitive environment within the assessed corridor. • Care must be taken in the vicinity of the drainage lines and existing roads must be for access during construction. • Special care must be taken in sensitive avifaunal micro-habitats such as drainage lines, pans and natural Renosterveld. • Contractors and working staff must stay within the development footprint and movement outside these areas including avian micro-habitats must be restricted. • Under no circumstances shall any animals (livestock or game) be hunted, handled, killed or be				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• To prevent injury or death of fauna species as a result of falling into open excavations. • To prevent collision of birds with power lines • To prevent electrical faulting.		interfered with by the construction team. • Domesticated animals are not allowed on site. • The Contractor shall keep the site clean and tidy from waste material that can attract animals. • Fauna rescue and relocation programme must be implemented. • Any open excavations must be regularly inspected to rescue any fauna that may have fallen in. • Records of any injured or deaths of fauna within the construction servitude must be kept by the SEO and ECO. • Construction must be restricted to daylight hours to prevent any disturbance such as floodlights. • During construction, if any of the Red Data species as indicated in the Avifauna report (Appendix D2) are noted to be roosting and/or				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			breeding in the vicinity, the ECO must be notified. • Anti-collision devices must be installed as soon as the wires are strung.				

9.2.9.Protection of flora and fauna

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impacts on vegetation and listed or protected species; • Direct faunal impacts;	• To conserve vegetation and listed or protected species. • To avoid the direct • To ensure the control of alien invasive species and to ensure that rehabilitation	• NEMBA • CARA	The proposed alignment may traverse and degrade sensitive vegetation, therefore, the following mitigation measures are recommended: • There should be a preconstruction walk-through of the power line corridor to identify species of conservation concern (SCC) or species special concern (SSC) that must be avoided or rescued. • Ensure that lay-down and other temporary infrastructure is within low sensitivity areas, preferably previously transformed areas if possible.	• No alien species. • No disturbance of protected flora. • Minimal disturbance of vegetation including crops.	• Observation. • Complaints register.	• ECO; • Contractor; and • SEO.	On-going during the construction phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	is as close as possible to the original state.		• Minimise the development footprint as far as possible and rehabilitate disturbed areas that are no longer required by the operational phase of the development. • Preconstruction environmental induction for all construction staff on site to ensure that basic environmental principles are adhered to. This includes topics such as no littering, appropriate handling of pollution and chemical spills, avoiding fire hazards, minimizing wildlife interactions, remaining within demarcated construction areas etc. • Demarcate all areas to be cleared with construction tape or other appropriate and effective means. However caution should be exercised to avoid using material that might entangle fauna. • During construction all vehicles must stay within the demarcated tracks or roads and the speed limit should not exceed 40km/h on larger roads and should be 20-30km/h on smaller access tracks.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• All construction staff must undergo environmental induction before construction commences in order to raise awareness and reduce potential faunal impacts. • To avoid impacts on amphibians, all spills of hazardous material should be cleared according to the nature and identity of the spill and all contaminated soil removed from the site. • Avoid sensitive faunal habitats such as drainage lines and wetlands.				

9.2.10. Heritage /or archaeological sites

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Destruction of sites of archaeological and heritage significance. • Loss of historic cultural landscape.	• To preserve any heritage, cultural or archaeological sites that might be encountered during the construction phase.	• NHRA.	The heritage significance of each corridor alternatives has been assessed in terms of the National Heritage Resources Act, 1999 (No 25 of 1999). No sites of heritage significance were identified, however the following conditions must be adhered to: • Should any unmarked burials exposed during construction,	• Detailed record of chance finds. • No destruction of or damage to known archaeological sites • Management of existing sites and new	• Intermittent observation.	• ECO; • Contractor; • SEO; and • Archaeologist.	• On-going during all excavations.

• Loss of intangible heritage value due to change in land use.	• Protection of known sites against destruction, vandalism and theft. • Preservation and appropriate management of any new archaeological sites should this be discovered during construction.		affected families must be consulted, relevant rescue relocation permits must be obtained from SAHRA/LHRA before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process in accordance with the National Heritage Resources Act, 1999 (25) of 1999. • Should archaeological materials (e.g. fossils, bones, artefacts etc.) or human burials remains be exposed during construction, work must cease on the affected area and the discovery must be reported to the heritage authorities immediately. The Contractor shall not recommence working in that area until written permission has been received from the SAHRA. • Where burial sites are accidentally disturbed during construction, the affected area must be demarcated as no go areas. • No person may, without a permit, destroy damage, excavate, alter,	discoveries in accordance with the recommendations of the Archaeologist. • No litigation due to destruction of sites.			

			deface or otherwise disturb any archaeological or paleontological site or any meteorite.				

9.2.11. Servicing and re-fuelling of construction equipment

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on soil and water resources due to accidental spillages.	• To preserve soils, surface and ground water. • To prevent spillages of hazardous substances.	• NEMWA • NWA • OHSA	During construction phase, the maintenance of construction materials and equipment may lead to environmental degradation and pollution. Therefore, the following mitigation measure must be adhered to: • All maintenance and repair work will be carried out within an area designated for this purpose, equipped with necessary pollution containment measures. • Refuelling, greasing or oiling of vehicle and construction machinery must be done on a drip tray or bunded surface. • Effective drip trays must be placed under stationary vehicles and machinery at all times.	• No evidence of hazardous substances polluting the site.	• On-going monitoring with regular inspections; and Service Records.	• ECO; • Contractor; and • SEO.	• On-going during the constructi on phase.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Construction vehicles are to be maintained in an acceptable state of repair. No vehicles or equipment with leaks or causing spills will be permitted on site. • Fuel required during construction must be stored at a central depot that must be located on a slab and be contained within a bund capable of containing at least 110% of the total volume in the containers. • Temporary fuel storage tanks and transfer areas also need to be located on an adequately bunded surface to contain accidental spillages.				

9.2.12. Waste management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Visual Impact • Water resources • Land pollution	• To ensure the efficient management of waste on site. • To ensure minimal waste impacts on the surrounding environment. • Minimise waste material being strewn in the environment.	• NEMWA	**9.2.12.1. Solid Waste Management:** • Waste must be separated at source (e.g. containers for glass, paper, metals, plastic, organic waste and hazardous waste). • An adequate number of scavenger proof refuse bins must be provided at the construction site and must be clearly labelled (general or hazardous) according to waste streams. • All waste must be transported in an appropriate manner (e.g. plastic rubbish bags) and disposed of at a licensed waste disposal facility. Proof of safe disposal must be kept on site. • The Contactor may not dispose any waste and / or construction debris by burning, or burying. • Waste bins must be emptied regularly (minimum weekly) such that they do not overfill.	• Presence of proper storage facilities that are properly labelled. • Post-construction work areas are clear of all waste materials.	• Intermittent. Observation. • Waste Disposal Records.	• ECO; • Contractor; and • SEO.	• Daily

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• The Contractor shall maintain 'good housekeeping' practices and ensure that all work sites and the construction camp is kept tidy and litter free. **9.2.12.2. Liquid Waste Management:** • An adequate number of suitable containers with lids must be provided at the construction site. • The Contractor will ensure that waste water is discharged in the drums provided. • All waste must be transported in an appropriate manner and disposed of at a licensed waste disposal site. • All requirements of the NEMWA, supporting policies and guidelines must be adhered to without fail.				

9.2.13. Surface and groundwater management

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Possible contamination of water resources.	• To conserve all natural water resources. • To avoid illegal diversion and destruction of water resources. • To ensure proper management of storm water run-off that causes erosion and .siltation/sedimentation. • To ensure that the rivers and streams are protected and incur minimal negative impact from	• NWA	In the proposed site, there are numerous minor and several major drainage systems which cross the corridors including the Olifants and Steelpoort Rivers. Therefore, the following mitigation measures must be implemented: • The Contractor must take reasonable precautions to prevent the pollution of ground and surface water resources as a result of construction activities. • No natural watercourse is to be used for the cleaning of tools. This includes for purposes of bathing, or washing of clothes etc. • No spills may be hosed / disposed into the surrounding natural environment. • All soil contaminated must be excavated to the depth of contaminant penetration, placed in suitable drums/containers and	• Unpolluted watercourse.	• Observation. • Design Plans.	• Contractor; • ECO; and • SEO.	• Continuous through the construction phase.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	the development. • To ensure compliance with the requirements of the Act.		removed to a hazardous waste facility. • No extraction of water from any natural resources without the relevant authorisation. • Erosion control measure must be put in place to control storm water runoff. • Storm water management measures must be as per the approved Method Statement prepared by the Contractor. • Erosion control on all access roads must be undertaken. • Any physical damage to any aspect of a watercourse must be prohibited. • Minimize the extent of damage to flood plains that is necessary to complete the works, and will not pollute any water course as a result of construction.				

9.2.14. Sensitive areas (water courses and buffers)

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Changing the quantity and fluctuation properties of the watercourse. • Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount) • Alteration of water quality toxic contaminants (including toxic metal ions (e.g. copper, lead,	• To preserve and conserve the sensitive environment.	• NWA	The site sensitivity assessment were carried out in the proposed site and the extent of more sensitive features within each corridor includes drainage features, wetlands, rocky ridges and areas of good condition bushveld or grassland vegetation. The sections of the corridors towards Witkop substation are all considered moderately sensitive on account of the intact nature of the Polokwane Plateau Bushveld vegetation. The following mitigation measures must be considered during different phases of the project: • No stockpiling of any materials may take place adjacent to any of the water resources. • Erosion control measures must be implemented in areas sensitive to erosion, particularly in areas prone to erosion and where erosion has already occurred. These measures include but are not limited to - the use of sand bags, hessian sheets, silt fences, retention or	• Undisturbed sensitive environments and/or properly rehabilitated. • Compliance with the WUL conditions.	• Observation. • WUL.	• SEO; • ECO; and • Contractor.	• Throughout the construction and post construction to ensure proper rehabilitation.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
zinc) and hydrocarbons. • Changing the physical structure within a water resource.			replacement of vegetation and geotextiles such as soil cells which must be used in the protection of slopes. • Do not allow surface water or storm water to be concentrated, or to flow down slopes without erosion protection measures being in place. • All disturbed areas must be rehabilitated as soon as construction in an area is complete or near complete and not left until the end of the project to be rehabilitated. • Make use of existing access roads as much as possible and plan additional access routes to avoid vegetation communities. • Minimise the extent of the work footprint as far as possible. • Do not locate the construction camp or any depot for any substance which causes or is likely to cause pollution				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			within a distance of 100m of the delineated water resources. • All waste generated during construction is to be disposed of at an appropriate facility and no washing of paint brushes, containers, wheelbarrows, spades, picks or any other equipment adjacent to the watercourses is permitted. • Proper management and disposal of construction waste must occur during the construction of the development. • No release of any substance i.e. cement, oil, that could be toxic to fauna or faunal habitats within the watercourses. • Spillages of fuels, oils and other potentially harmful chemicals must be cleaned up immediately and contaminants properly drained and disposed of using proper solid/hazardous waste facilities (not to be disposed of within the natural environment). Any contaminated soil				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			must be removed and the affected area rehabilitated immediately. • A spill contingency plan must be drawn up for the construction phase. • No construction must take place within the riparian zone of the watercourse. • Vehicles must not be permitted to be cleaned or serviced in or near aquatic ecosystems. Vehicle servicing must take place offsite. • Cordon-off areas that are under rehabilitation as no-go areas. • Demarcate the watercourses and buffer zones to limit disturbance and clearly mark these areas as no-go areas. • Recommendations from Department of Water and Sanitation as part of the licensing process must be taken into consideration throughout the construction phase.				

9.2.15. Hazardous materials

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on soils and water resources.	• To ensure safe and proper handling of hazardous material.	• HSA	• The Contractor must comply with all National, Regional and Local legislations with regard to the storage, transport, use and disposal of petroleum, chemical, harmful and hazardous substances and materials. • Equipped spill kits must be made available on site at all times. • The SEO will furthermore be responsible for the training and education of all personnel on site who will be handling the material about its proper use, handling and disposal. • Storage of all hazardous material is to be safe, tamper proof and under strict control. • Exercise extreme care with the handling of diesel and other toxic solvents to ensure that spillage is avoided. • Any accidental chemical / fuel spills must be remediated immediately.	• No incidents reported	• Hazardous material data sheet • Incident reports • Observation of spillages and leakages	• ECO; • Contractor; and • SEO.	• Continuous throughout the construction phase.

9.2.16. Oil spill management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impact on soils and water resources	• To avoid ground and surface water contamination • To ensure proper and safe handling of oil spillages.	• HSA	• The Contractor must prevent potential hydrocarbon spills during construction. • Hydrocarbon must be stored in properly contained areas so as to minimise accidental spillage. • Use of effective drip trays under stationary vehicles. All spills must be reported to the ECO within 24 hours of the spill via a flash report. • The Contractor must be in possession of a mobile oil spill kit at all times. • The oil spill clean-up and rehabilitation standards need to be implemented.	• No incident reported • Proper use of drip trays • Presence of oil spill kit	• Observation • Incident report	• ECO; • Contractor; and • SEO.	• On-going during the construction phase.

9.2.17. Storm water management

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Possible negative impact on water resources	• To reduce the potential impact from runoff on sensitive areas.	• NWA	• The Contractor must ensure that rainwater pollutants from construction activities does not run-off into natural areas and thus result in a pollution threat. • Storm water shall be diverted from the construction works.	• No evidence of erosion • No evidence of increased siltation	• Site Plan • Observation	• ECO; • Contractor; and • SEO.	• Continuous during the construction.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Storm water management measures must be as per the Storm water Management Method Statement prepared by the Contractor for ECO approval. • Increased runoff due to vegetation clearance and/or soil compaction must be managed and steps must be taken to ensure that storm water does not lead to excessive levels of silt entering the watercourses. • Necessary storm water control mechanisms shall be employed to ensure the sustainability of all the structures. • Effort shall be made to ensure that storm water leaving the construction site is not contaminated by any substance, whether solid, liquid or gas.	• No evidence of contaminated water courses.			

9.2.18. Fire

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Destruction of property • Loss of life. • Destruction of crops and livestock.	• To prevent open fires. • To ensure that the workforce is aware of emergency procedures should an incident occur.	• NEMA	• A fire Management Method Statement must be put in place by the Contractor. Landowners must be consulted in order to incorporate their specific fire fighting measures. The Method Statement must be approved by the ECO. • All the necessary precautions to ensure that fires are not started as a result of activities on site must be implemented. • Fuels or chemicals must be stored at the designated storage area. • Gas and liquid fuels must not be stored in the same storage area. • All fire control mechanisms (fire fighting equipment) will be made available and accessible at all times and routinely inspected. • No open fires for heating or cooking will be permitted on site, unless agreed and then only on designated areas. • Designated smoking areas must be provided, with special bins for discarding of cigarette stump. • Fire must be reported immediately.	• No reported fire incidents • No loss of life • No traces of cigarettes buts outside the designated smoking area.	• Fire Management Plan. • Daily Checks.	• ECO; • Contractor; and • SEO.	• On-going during the construction phase.

9.2.19. Air pollution

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Dust nuisance from excavations, vegetation clearing and dirt roads. • Exhaust fumes from construction vehicles.	• To ensure proper mitigation of air pollution. • To avoid dust nuisance from excavation activities and vehicles on dirt roads.	• NEMAQA	The potential air pollutants would be dust emanating from excavation activities and access roads; emissions or exhaust fumes from equipment. The following measures must be put in place: • Appropriate dust suppression measures or temporary stabilising mechanisms (e.g. adherence to speed limit, chemical soil binders, straw, brush packs chipping) must be put in place throughout construction, particularly during prolonged periods of dry weather. • Removal of vegetation must be avoided until such time as soil stripping is required. • No burning of waste material is allowed. • A maximum speed of 30km/hr on the access road must be adhered to in order to minimise or avoid dust pollution. • Construction vehicles and equipment must be in good working order and serviced regularly.	• No complaints from surrounding land owners recorded. • No evidence of dust pollution plumes on site.	• Observation. • Complaints register.	• ECO; • Contractor ; and • SEO.	• On-going throughout the construction phase.

9.2.20. Noise impact

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Noise during excavation/ drilling of foundations and associated activities.	• To ensure minimal noise disturbance • To ensure proper mitigation measures of noise. • To avoid noise nuisance from operating construction equipment.	• ECA	Increased levels of noise during construction will be detrimental to fauna and human residents, therefore the following mitigation measures must be adhered to: • Noise associated with the construction activities can be mitigated by limiting the construction operation to business hours. • Machinery and vehicles are to be maintained in good working order. • Offending machinery and vehicles will be banned from use on site until they have been repaired. • The project team must endeavour to keep noise generating activities associated with construction to a minimum and within working hours. • Any complaints pertaining to noise must be recorded and reported to the ECO and addressed accordingly. Labourers to be provided with hearing protection as and when required.	• No complaints from surrounding landowners recorded.	• Noise monitoring. • A register of complaints to be kept on site at all times and kept up to date.	• Contractor; • ECO; and • SEO.	• On-going during the construction phase

9.2.21. Visual impact

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Loss of sense of place.	• To ensure proper mitigation measures of potential visual impacts. • To maintain the site's aesthetics.	• NEMA	• Storage facilities and other temporary structures on site must be located in such that they have as little visual impact on local residents as possible. • Soil excavated (if any) must not be stockpiled above 2m. • All temporary structures erected on site for the purposes of the project's construction phase will be removed from site upon completion of the project. • The pylons should not be painted but be galvanised and allowed to oxidise naturally over time. • Lighting will be sufficient to ensure security but will not constitute 'light pollution' to the surrounding areas. • The site must be clean and tidy at all times.	• Clean and tidy site. • No complaints from the landowners and affected parties.	• Observation. • Complaints register.	• ECO; • Contractor; and • SEO	• On-going during the construction phase.

9.2.22. Traffic impact

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency

• Possible traffic increase. • Car accident. • Irregular traffic impact during construction. • Impact on road safety, congestion, wear and tear of the road surface.	• To maximise road safety, and minimise congestion. • To ensure that traffic impacts as a result of the construction related activities are minimized.	• NLTA	• Effective traffic control must take place throughout the construction phase. • Access roads will be maintained by the Contractor and will ensure that access roads to the site are of a suitable quality to eliminate soil erosion and channel storm water. • Strategic positioning of entry and exit points to ensure as little impact/ effect as possible on the traffic flow. • Monitor adherence to traffic regulations. • Monitor drivers for use of alcohol and other substances that could impair judgment and driving. • Ensure that loads on trucks are properly secured during transport. • Schedule arrival and departure of heavy vehicles to avoid morning and afternoon peak hours.	• No increase in accident rate. • No complaints from the landowners and affected parties.	• Observation. • Complaints report.	• Contractor. • ECO. • SEO.	• On-going during the construction phase.

9.2.23. Excavation, backfilling and trenching

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Possible erosion • Injury of animal life	• To prevent erosion. • To ensure safety for	• OHSA	While working at areas prone to erosion, the following must be adhered to: • Excavations must not be left open for longer than 14 days.	• No incidence of animals trapped in	• Observation • Incident report	• Contractor / • ECO. • SEO.	• On-going excavations.

	both human and animals.		• Excavations must be barricaded/ fenced off at all times.	trenches reported.			

9.2.24. Soil and agricultural potential

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Potential loss of agricultural soil; • Disturbance of agricultural soil during construction; • Negative Impacts on agricultural activities.	• To avoid loss of agricultural soil. • To reduce / prevent the disturbance of agricultural soil. • To limit the impact on agricultural activities.	• CARA	During the construction, the removal or disturbance of vegetation cover will affect the soil and agricultural potential. Therefore, the following mitigation measures should implemented: • Access roads should avoid steep slopes wherever possible; • Where steep slopes are used, road stabilization measures (culverts, run-off trenches, banking of bends etc) should be implemented; • Restrict areas cleared of vegetation to road surfaces and infrastructure footprints only; • The rehabilitation of any bare soil areas caused by the construction process (including any access roads or tracks); • Special care should be given to areas with steeper topography and areas adjacent to water courses;	• No encroachment into agricultural crops. • No negative feedback from landowners.	• Observation • Complaints register	• ECO. • SEO. • Contractor.	• During and after maintenance.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• To avoid undue loss of livestock and crops.		• Maintain good relations with landowners. • Consult farmers prior to any clearing activities. • Avoid unnecessary destruction of crops by remaining within the servitude at all times. • No form of disturbance of agricultural stock will be permitted for whatever reason.				

9.2.25. Erosion and control

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Construction phase disturbance may result in large amounts of erosion and silt movement into drainage lines.	• To prevent erosion and sedimentation.	• NWA	To prevent any form of erosion the following must be adhered to: • Disturbance within or near the drainage lines should be kept to a minimum. • No pylons should be located within drainage lines or the adjacent floodplains. • Any roads along slopes should have water diversion structures placed at regular intervals to ensure that they do not	• No visible signs of erosion.	• Observation. • Complaints register.	• Contractor. • ECO. • SEO.	• On-going particularly during excavations.

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Construction disturbance is likely to increase the vulnerability of the disturbed areas to erosion • Impact on soils and habitats and sensitive environs.			capture overland flow and become eroded. • Any erosion problems observed along the power line servitude should be rectified as soon as possible using the appropriate re-vegetation and erosion control works. • During construction, the Contractor will protect areas susceptible to erosion by installing necessary temporary and / or permanent drainage and by taking suitable measures to prevent surface water concentration into nearby roadways. • Prior to construction, all topsoil must be stripped and stockpiled separately from subsoil and rocky material. Soil must be stripped in a phased manner so as to retain vegetation cover for as long as possible. • Stockpiled topsoil must not be compacted and must be reused as the final soil layer. • Stockpiled soil must be protected by erosion-control berms if exposed for a				

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			period of greater than 14 days during the wet/windy season. • Topsoil stockpiles must not be contaminated with oil, diesel, petrol, waste or any other foreign matter, which may inhibit the later growth of vegetation and micro-organisms in the soil. • Soil must not be stockpiled on drainage lines or near watercourses. • The timing of clearing and grubbing must be co-ordinated as much as possible to avoid prolonged exposure of soils to wind and water erosion. • If topsoil will be stockpiled for a longer period, it must be either vegetated with indigenous grasses or covered with a suitable material to prevent erosion and invasion by weeds. • To limit the introduction of alien species into the area, no soil may be imported onto site. • Where required, cut-off trenches can be installed to divert substantial run-off and prevent erosion as and when necessary.				

Possible Impact	Objective	Applicable Legislation /Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• Where new roads are constructed, water diversion berms must be constructed to prevent erosion. • Sensitive areas such as watercourses (wetlands, drainage lines, non-perennial rivers and riparian areas) must be cordoned off to control vehicles and construction personnel access.				

9.2.26. Use of cement and concrete

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Soil, surface and ground water pollution.	• To conserve soils, surface and groundwater. • To minimise waste concrete from polluting the environment.	• NEMA. • NEMWA. • HSA.	Cement and concrete are regarded as highly hazardous to the natural environment due to their high pH (potential Hydrology) and the chemicals contained therein. To avoid ground pollution the following must be implemented: • Pre-mix concrete shall be the preferred option where possible. • If concrete mixing is undertaken on site, the following measures must be put in place:	• Areas of construction are clear of all concrete residue/waste following construction.	• Observation. • Site Plan.	• Contractor. • ECO. • SEO.	• Throughout the construction phase.

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• The batching / mixing area must be properly designated, indicated on the site plan and kept neat and tidy at all times. • No batching / mixing activities will occur on a permeable surface. • Unused cement bags will be stored and disposed of appropriately. • The visible remains of the batch plant and concrete, either solid, or from washings shall be physically removed and disposed of appropriately at a licensed landfill site if not reused.				

9.2.27. Site clean-up and rehabilitation

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Erosion • Spread of alien invasive plant species.	• Minimise damage to topsoil and environment at tower positions. • Successful rehabilitation of all damaged areas.	• NEMBA • NEMA	• The Contractor must ensure that all temporary structures, materials, waste and facilities used for construction activities are removed upon completion of the project. • Fully rehabilitate (e.g. clear and clean area, rake, pack branches etc.) all	• No loss of topsoil due to construction activities • No loss of topsoil due to construction activities	• Rehabilitation Plan • Observation	• ECO • SEO • Contractor	On completion of construction Random surveys by landowner

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
	• Prevention of erosion. • To ensure that the site is fully rehabilitated to its original state. • To ensure that the site is clean and neat. • Minimize claims and litigation from landowners.		disturbed areas and protect them from erosion. • All replaced equipment and excess gravel, stone, concrete, bricks, temporary fencing and the like shall be removed from the site upon completion of the work. • No discarded materials of any nature shall be buried on the site or on any other land within the site. • Re-seeding shall be done on disturbed areas as per the rehabilitation Method Statement and as directed by the SEO and ECO. • Slopes in excess of 2% must be contoured and slopes in excess of 12% must be terraced. • The Contractor shall dispose of all excess material from site at a registered disposal facility. • Reusable material will be taken off site and reused elsewhere.	• All disturbed areas successfully rehabilitated within three months of completion of the contract • No visible erosion scars three months after completion of the contract. • No open fires shall be allowed on site under any circumstance. • No evidence of rubble or litter left on site. • Successful completion of the contract			

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
				with all landowners signing the release form six months after completion of the project.			

9.2.28. Infrastructure

Possible Impact	Objective	Applicable Legislation/Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Damage to fence, gates and other services. • Loss of livestock.	• Minimise damage to infrastructure such as fence, gates. • Prevent loss of livestock • Minimize claims and litigation from landowners.	• Fencing Act (Act 31 of 1963).	• The Contractor must ensure that all gates are left in the state as required by the landowner. • The Contractor must not interfere with landowner's locks. • No gates must be left open as this can lead to livestock loss. • Damage to fences during stringing must be avoided. • The climbing/crawling over/through fences without the permission of the landowner must be prohibited.	• No complaints from the landowners with regards to broken fences and gates. • All gates closed during the construction phase.	• Complaints register. • Observation.	• ECO; • SEO; and • Contractor.	• During construction and completion of construction. • Random surveys landowner.

9.2.29. Monitoring of EMPr and compliance

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
To implement an on-going monitoring and performance audit programme.	• The correct and successful implementation of impact mitigation measures in order to reduce adverse impacts on environmental aspects needs to be ensured by a proper monitoring program. • Monitoring of the general implementation of/adherence to the EMPr shall be the responsibility of the ECO. • Reporting on adherence/compliance to stipulations as communicated to Contractors, shall take place during scheduled site meetings. • Regular site meetings by the project team. • Continuous induction of staff and visitors on the EMPr conditions and requirements. • Put in place non-conformance, prevention and corrective procedures.	• Observation; • Checklist; • Daily Register; • Attendance Registers; • Photographic evidence; and • Audit and Monitoring Reports.	• ECO; • Contractor; and • SEO.	On-going post rehabilitation.

9.2.30. Document control

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To ensure compliance with the requirements of the regulatory authority.	• A copy of the EMPr and the EA will be made available on site at all times. • The EMPr as well as the EA will be used for referral as the project progresses. The EA will	• Availability of an EMPr copy on site. • Report submission Transmittal.	• ECO; • Contractor; and • SEO.	• On-going during the construction phase.

Objective	Mitigation / Management Action	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• To assign roles and responsibilities to ensure compliance. • To implement and comply with the requirements of the EMPr.	also be presented on request to I &APs and stakeholders who may visit the site. • Monitoring and Audit Reports must be submitted to DEA and copies filed.			

9.3. OPERATION MANAGEMENT PROGRAMME

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
9.3.1.Access roads							
• Access roads used for maintenance purposes might impact on vegetation and water courses.	• To prevent ecological damage. • Minimize damage to the identified water courses.	• NEMA. • NWA. • NEMBA.	• Access roads are to be maintained in an acceptable manner. • Appropriate erosion measures must be in place to prevent any impact in surrounding habitat.	No complaints from the land owners.	• Complaints. register. • Observation	• Project Manager.	• Yearly.
9.3.2.Flora and Fauna							
• Increased erosion risk. • Faunal impacts during construction.	• To prevent the risk of erosion. • To prevent the faunal impacts;	• NEMBA. • Eskom bush clearing policy.	• CBAs should be avoided by the final power line corridor as much as possible, especially where these related to	• Intact Vegetation with no alien species.	• Vegetation re-growth. • Observation.	• Eskom.	• Infrequent/ only as and when deemed necessary.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
• Impacts on Critical Biodiversity Areas (CBA).	• To minimize the impacts on CBDs. • To ensure biodiversity stability. • To prevent alien invasion.		sensitive habitats such as forest or wetlands. • The development footprint should be kept to a minimum and natural vegetation should be encouraged to return to disturbed areas as far as possible. The taller woody vegetation should only be cleared where this is necessary for operational safety of the power line. Taller succulent species such as euphorbias should be left in place as they do not burn. • Maintaining vegetation around the pylons and under the power line will also assist with erosion control.				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			• An alien clearing programmed must be drawn up and implemented during the operational phase.				
9.3.3.Avifauna							
• The impact of collision of certain bird species with the overhead cables • Possible bird electrocutions. • Nesting on powerline • Electrical faulting due to birds	• Reduce the deaths of birds caused by collision and electrocution.	• NEMBA	• Installation of Bird Guards on high risk towers to ensure that large birds cannot perch directly above the relevant live hardware. • Installing effective line marking devices to make the cables more visible to birds. • Should electrocutions become an issue, the impact can be mitigated reactively using a range of insulation devices that exist and site-specific recommendations should be sought from	• No bird fatality caused by collision and electrocution.	• Observation.	• Project Manager.	• Yearly.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			the Eskom-Endangered Wildlife Trust Strategic Partnership. • High risk sections of power line will need to be marked with a suitable, effective Eskom approved line marking device on the earth wires as per Eskom standards. • These high-risk sections of line need to be identified once the final route is available and tower positions have been surveyed and finalized.				
9.3.4.Waste generation and disposal							
• Waste generation during the operational phase will have a negative	• To prevent littering on site by storing and disposing of waste appropriately.	NEMWA	• Solid waste generated during operation phase must be removed in a continuous and efficient manner.	• No complaints from the landowners.	• Complaints register. • Observation.	• Project Manager.	• Yearly.

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
impact on the environment if not controlled adequately.			• A waste management plan must be developed and maintained. • No solid waste should be dumped on the site. • All domestic waste generated on the site should be disposed of in a proper manner off site i.e. no burial on site. • Burning of waste will not be permitted.				
9.3.5.Storm water Management							
• Soil erosion on site may occur if storm water is not managed properly.	• To prevent soil erosion and water logging on site.	• NEMA. • NWA.	• It is recommended that proper storm water drainage system be ensured during operation phase.	• Erosion scars.	• Observation.	• Project Manager.	• Yearly.
9.3.6.Site Clean up							
• Leakage of hazardous waste can cause soil contamination.	• To prevent contamination of soil.	• NEMWA • NEMA	• In the event of incident or leakage of hazardous waste from storage site, a professional company must be appointed to	• No evidence of spillages.	• Observation	• Project Manager	• Yearly

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
			remove and clean up the waste as soon as possible and waste must be appropriately disposed of at a registered waste disposal site suitable for the type of waste. The contractor must obtain a safe disposal certificate and this must be submitted to the ECO for records. • ECO must carry out monthly inspections for the waste temporally stored on site.				
9.3.7.Safety							
• There is the potential risk of electrocution (people and livestock) if access to the	• Prevent loss of life of people and livestock due to electrocution	• NEMA	• Safety and security issues should be addressed as a priority. It is recommended that the landowners and affected community				

Possible Impact	Objective	Applicable Legislation/ Policy	Mitigation / Management Action	Performance Indicator	Monitoring Criteria	Responsible Agent	Monitoring Frequency
site is not controlled.			members are contacted in advance to ensure that they are forewarned of the construction and maintenance activities planned in the area. • The local community must be educated about the dangers of high voltage electricity.				
9.3.8.Environmental complaint register							
• Complaints from the affected parties not addressed.	• To ensure that all complaints raised are recorded and addressed.		• The environmental complaint register must be maintained during the operation phase.	• Availability of complaint a register on site.	• Complaints register.	• Operator • ECO	• Until decommissioning phase.

10. SUMMARY OF LAND OWNER DETAILS AND CONDITIONS

All contact with the Landowners shall be courteous at all times. The rights of the Landowners shall be respected at all times and all staff shall be sensitised to the effect on the works undertaken on private property. Eskom shall ensure that all agreements reached with the Landowner are fulfilled and that such areas be rehabilitated once construction is completed.

11. GENERIC CONDITIONS

In order to ensure compliance with Eskom's environmental policy as well as environmental legislation requirements, the following generic conditions are applicable:

11.1. SITE DOCUMENTATION / MONITORING

The standard Eskom site documentation must be used to keep records on site. All documents must be kept on site and be available for monitoring and auditing purposes. Site inspections by an environmental audit team may require access to this documentation for auditing purposes. The documentation must be signed by all parties to ensure that such documents are legitimate. Regular monitoring of all site works by the Environmental Control Officer is imperative to ensure that all problems encountered are solved punctually and amicably. When the ECO is not available, the Environmental officer, construction manager or supervisor shall keep abreast of all works to ensure no problems arise.

Monthly reports shall be forwarded to the appointed Land Development Environmental Advisor with all information relating to environmental matters. The following Key Performance Indicators must be reported on a two-weekly basis:

- Complaints received from Landowners and actions taken.
- Environmental incidents, such as oil spills, concrete spills, etc. and actions taken (litigation excluded).
- Incidents possibly leading to litigation and legal contraventions.
- Environmental damage that needs rehabilitation measures to be taken.

The following documentation shall be kept on site:

- Access negotiations and physical access plan;
- Complaints register;
- Site daily dairy;
- Records of all remediation / rehabilitation activities;
- Copies of monthly reports to the Environmental Advisor;
- Copy of the EMPr; and
- Copy of the EA.

- Copies of Project permits

11.2. AUDITS

During the construction period at least monthly environmental audits must conducted by the ECO to determine compliance with the recommendations of the EMPr and conditions of the EA. Audits shall be undertaken in accordance with the requirement of Appendix 7 of the EIA Regulations of December 2014 as amended.

The appointed ECO, as well as the contractors on site, are responsible for ensuring compliance with the EMPr. It is recommended that periodic EMPr compliance reports (audits) are compiled by the ECO and submitted to SEO for correction of non-compliance issues. It is the responsibility of the ECO to report any non-compliance, which is not correctly rectified to the DEA.

11.3. SOCIO-CULTURAL ISSUES

- A plan of action must be drawn up in the case of an emergency (veld fire, damaged power line, vegetation problems etc.);
- Property owners or occupiers must be treated with respect and courtesy at all times;
- The culture and lifestyles of the communities living in close proximity to the substation must be respected;
- Removal of agricultural products is prohibited. Receipts must be obtained for any merchandise purchased or received from landowners;
- Vehicles must be driven carefully in hazardous road conditions (sharp bends, narrow roads, bad weather, children playing on or near the road, domestic animals on or near the road etc.);
- Vehicle movement must be kept to a minimum during rain to avoid damage to the access road;
- Environmental clauses (as referred to in this Construction and Operation EMPr) must be included into contract documents for all contractors;
- Tribal graves, archaeological sites and sites of historical interest are to be treated with respect and protected;
- No firewood is to be collected except with the written consent of the landowner; and
- A register must be maintained of all complaints or queries received as well as action taken.

12. FAILURE TO COMPLY WITH THE ENVIRONMENTAL CONSIDERATIONS

The ECO will, acting reasonably, have the authority to instruct the Contractor to suspend part or all of the construction activity if such activity causes unacceptable damage to the environment by not adhering to the specifications .The suspension will be enforced until such time as the offending parties' actions, procedures and/or equipment are corrected and adequate mitigation measures implemented. .