

2016

**DRAFT ENVIRONMENTAL MANAGEMENT
PROGRAMME FOR THE PROPOSED DEVELOPMENT
OF THE ESKOM AGULHAS 400/132kV2 X 500MVA
TRANSMISSION SUBSTATION AND LOOP IN AND
LOOP OUT LINES IN THE WESTERN CAPE PROVINCE**


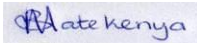
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DOCUMENT CONTROL

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE PROPOSED DEVELOPMENT OF THE ESKOM AGULHAS 400/132kV 2 X500MVA TRANSMISSION SUBSTATION AND LOOP IN AND OUT LINES IN THE WESTERN CAPE PROVINCE

Quality Control

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TABLE OF CONTENTS

| | | |
|-----------|---|-----------|
| 1 | INTRODUCTION | 7 |
| 2 | DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER | 7 |
| 3 | PROJECT DESCRIPTION | 9 |
| 3.1 | DESCRIPTION OF LOCALITY | 9 |
| 4 | PURPOSE AND SCOPE OF THE EMPR..... | 11 |
| 5 | GENERAL ENVIRONMENTAL GUIDELINES FOR THE CONSTRUCTION PHASE..... | 11 |
| 6 | APPLICABLE LEGISLATION..... | 11 |
| 6.1 | STANDARD ESKOM POLICIES TO BE COMPLIED WITH..... | 14 |
| 6.2 | METHOD STATEMENTS FOR THE ACTIVITIES TO BE CARRIED OUT | 15 |
| 7 | PROJECT TEAM..... | 16 |
| 7.1 | ROLES AND RESPONSIBILITIES OF THE PROJECT TEAM | 16 |
| 7.1.1 | Environmental Control Officer | 16 |
| 7.1.2 | Contractor | 18 |
| 7.1.3 | Authorising Department | 19 |
| 8 | DESCRIPTION OF MITIGATION MEASURES | 19 |
| 9 | PRE- CONSTRUCTION MANAGEMENT PROGRAMME | 20 |
| 9.1 | NEGOTIATIONS WITH AFFECTED LANDOWNERS..... | 20 |
| 9.2 | COMMISSIONING OF TENDER | 20 |
| 10 | CONSTRUCTION MANAGEMENT PROGRAMME | 21 |
| 10.1 | SITE ESTABLISHMENT | 21 |
| 10.1.1 | Site Plan:..... | 21 |
| 10.1.2 | Site Camps: | 22 |
| 10.1.3 | Vegetation clearing: | 22 |
| 10.1.4 | Water for human consumption:..... | 23 |
| 10.1.5 | Sewage Treatment:..... | 23 |
| 10.2 | SENSITIVE ECOLOGY | 23 |
| 10.3 | MATERIALS HANDLING, USE AND STORAGE | 26 |
| 10.3.1 | Safety:..... | 26 |
| 10.3.2 | Hazardous Material Storage: | 26 |
| 10.3.3 | Fuels and Gas Storage: | 26 |
| 10.4 | EMPR TRAINING | 27 |

| | | |
|-----------|---|-----------|
| 10.5 | WATER SUPPLY..... | 28 |
| 10.6 | VEHICULAR ACCESS AND MOVEMENT OF CONSTRUCTION VEHICLES..... | 28 |
| 10.7 | MOVEMENT OF CONSTRUCTION PERSONNEL AND EQUIPMENT | 31 |
| 10.8 | PROTECTION OF FAUNA AND AVIFAUNA..... | 32 |
| 10.9 | HERITAGE AND/OR ARCHAEOLOGICAL SITES..... | 35 |
| 10.10 | SERVICING AND RE-FUELLING OF CONSTRUCTION EQUIPMENT | 36 |
| 10.11 | WASTE MANAGEMENT | 37 |
| 10.11.1 | SOLID WASTE MANAGEMENT | 38 |
| 10.11.2 | LIQUID WASTE MANAGEMENT..... | 39 |
| 10.12 | SURFACE AND GROUND WATER MANAGEMENT | 40 |
| 10.13 | SENSITIVE AREAS (WATER COURSES AND BUFFERS) | 41 |
| 10.14 | HAZARDOUS MATERIALS..... | 46 |
| 10.15 | OIL SPILL MANAGEMENT | 47 |
| 10.16 | STORM WATER MANAGEMENT | 47 |
| 10.17 | FIRE | 49 |
| 10.18 | AIR POLLUTION | 50 |
| 10.19 | NOISE IMPACT..... | 51 |
| 10.20 | VISUAL IMPACT | 52 |
| 10.21 | TRAFFIC IMPACT..... | 53 |
| 10.22 | EXCAVATION, BACKFILLING AND TRENCHING | 54 |
| 10.23 | AGRICULTURAL ACTIVITIES | 54 |
| 10.24 | EROSION AND CONTROL..... | 55 |
| 10.25 | USE OF CEMENT AND CONCRETE | 58 |
| 10.26 | SITE CLEAN-UP AND REHABILITATION | 59 |
| 10.27 | INFRASTRUCTURE | 60 |
| 11 | OPERATION PHASE..... | 62 |
| 11.1.1 | Access road | 62 |
| 11.1.2 | Avifauna..... | 62 |
| 11.1.3 | Waste..... | 62 |
| 11.1.4 | Safety | 63 |
| 11.1 | MONITORING OF EMPR COMPLIANCE | 65 |
| 11.2 | DOCUMENT CONTROL | 65 |
| 12 | SUMMARY OF LAND OWNER DETAILS AND CONDITIONS..... | 67 |
| 13 | GENERIC CONDITIONS | 67 |
| 13.1 | SITE DOCUMENTATION/MONITORING..... | 67 |
| 13.2 | AUDITS | 68 |
| 13.3 | ACCESS TO DOCUMENTS | 68 |
| 13.4 | SOCIO-CULTURAL ISSUES..... | 68 |

14 FAILURE TO COMPLY WITH THE ENVIRONMENTAL CONSIDERATIONS 69**LIST OF TABLES**

| | |
|--|----|
| Table 1: Details of the EAP | 7 |
| Table 2: The GPS coordinates of the center points for the substation alternative sites | 10 |
| Table 3: Legislation pertaining to the proposed project..... | 12 |

LIST OF FIGURES

| | |
|-------------------------------------|-----------|
| Figure 1: Locality Map | 10 |
|-------------------------------------|-----------|

LIST OF APPENDICES

APPENDIX A: LOCALITY AND SENSITIVITY MAPS

APPENDIX B: EAP CV AND QUALIFICATION

| ACRONYMS | |
|----------|---|
| CARA | Conservation of Agricultural Resources Act (Act 43 of 1983) |
| CEO | Contractor 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) |
| NLTA | National Land Transport Act (Act 5 of 2009) |
| 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 |

1 INTRODUCTION

The construction of substation and power lines can have a major impact on the environment. It is therefore imperative that precautions are taken to ensure that environmental degradation is minimized while the project is undertaken. This will take a concerted effort from the project team and proper planning is of the utmost importance.

Nsovo Environmental Consulting (hereafter Nsovo) has been appointed by Eskom Holdings SOC Ltd (hereafter Eskom) to compile an Environmental Management Programme (EMPr) which will be a guideline for the mitigation and management measures to be implemented during the construction phase of the 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 as part of the Environmental Impact Assessment Report

The purpose of this EMPr is to give effect to precautionary measures, which are to be put in place for controlling the activities that take place on site. It has been developed to ensure compliance with National legislative and regulatory requirements.

2 DETAILS AND EXPERTISE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Nsovo is conversant with the definition and general requirements of an Environmental Assessment Practitioner (EAP) as defined in Section 1 of the National Environmental Management Act, 1998 (No 107 of 1998) (NEMA) and Regulation 13 of the Environmental Impact Assessment Regulations promulgated in December 2014. Nsovo 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: **Details of the EAP**

| | |
|---------------------------|--|
| Name of Company | Nsovo Environmental Consulting |
| Person Responsible | Munyadzi Rikhotso |
| Professional Registration | Registered with the South African Council for Natural Scientific |

| | |
|-----------------------------|---|
| | Professions (SACNASP). |
| Postal Address | Postnet Suite 697 Private Bag X29 Gallo Manor 2052 |
| Telephone Number | 011 0413689 |
| Fax Number | 086 602 8821 |
| Email | munyadzi@nsovo.co.za |
| Qualifications & Experience | B.Sc. Honours Environmental Management 12 years of experience |
| Project Related Expertise | <p>In terms of project related expertise the EAP has completed the following projects:</p> <ul style="list-style-type: none"> • 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. • Basic Assessment for the proposed Abersethin Substation and loop in and out power lines in Bethlehem. • Basic Assessment for Bloemendal Substation and loop in and out lines. • Basic Assessment for the proposed Abersethin Substation and loop in and out power lines in Bethlehem. • EIA, EMPr and WULA for Senakangwedi-Senakangwedi B Integration in Limpopo. <p>EIA for the proposed Tubatse strengthening phase 1 – Senakangwedi B integration within the jurisdiction of Greater Tubatse Local Municipality in Limpopo Province.</p> |

CV attached as Appendix B.

3 PROJECT DESCRIPTION

Eskom Transmission Grid Planning and Eskom Distribution Western Cape Operating Unit initiated a study to investigate possible solutions to address the constraints on the sub-transmission network to the east of Bacchus 2x500 MVA 400/132kV substation, which forms part of the Outeniqua CLN in the Western Cape Grid. The substation supplies Vryheid and Ashton sub transmission substations in the east. Ashton substation is supplied via Boskloof 132kV switching station, whilst Vryheid substation is supplied directly from Bacchus substation. Vryheid and Ashton substations are both equipped with 2x40MVA 132/66kV transformers and are radially supplied. As indicated above, in order to resolve the current constraints, Eskom has proposed the Vryheid Network Strengthening.

The proposed project entails the development of the following:

- The Agulhas 400/132kV 2 x 500 MVA Main Transmission Substation (MTS) which will have a total footprint of approximately 600m x 600m;
- The loop in and loop out lines to connect the proposed Agulhas MTS to the existing 400kV line Bacchus – Proteus 1;
- Build a Double Circuit Kingbird line from Agulhas MTS to Vryheid; and
- Extend Vryheid 132kV Busbar and build 2x132kV feeder bays.

3.1 DESCRIPTION OF LOCALITY

The proposed development will be located in Ward 3 of Swellendam Local Municipality which falls within the jurisdiction of Overberg District Municipality in the Western Cape Province. The alternative substation sites and loop in and loop out lines are illustrated in the Figure 1 below.

The study area earmarked for the proposed substation is approximately 600m X 600m whereas the longest loop in and loop out lines will be ± 5 km long, depending on the final location of the substation. The proposed sites are located approximately 10km south west of Swellendam town along the N2 and R319 roads as depicted in Figure 1 below.

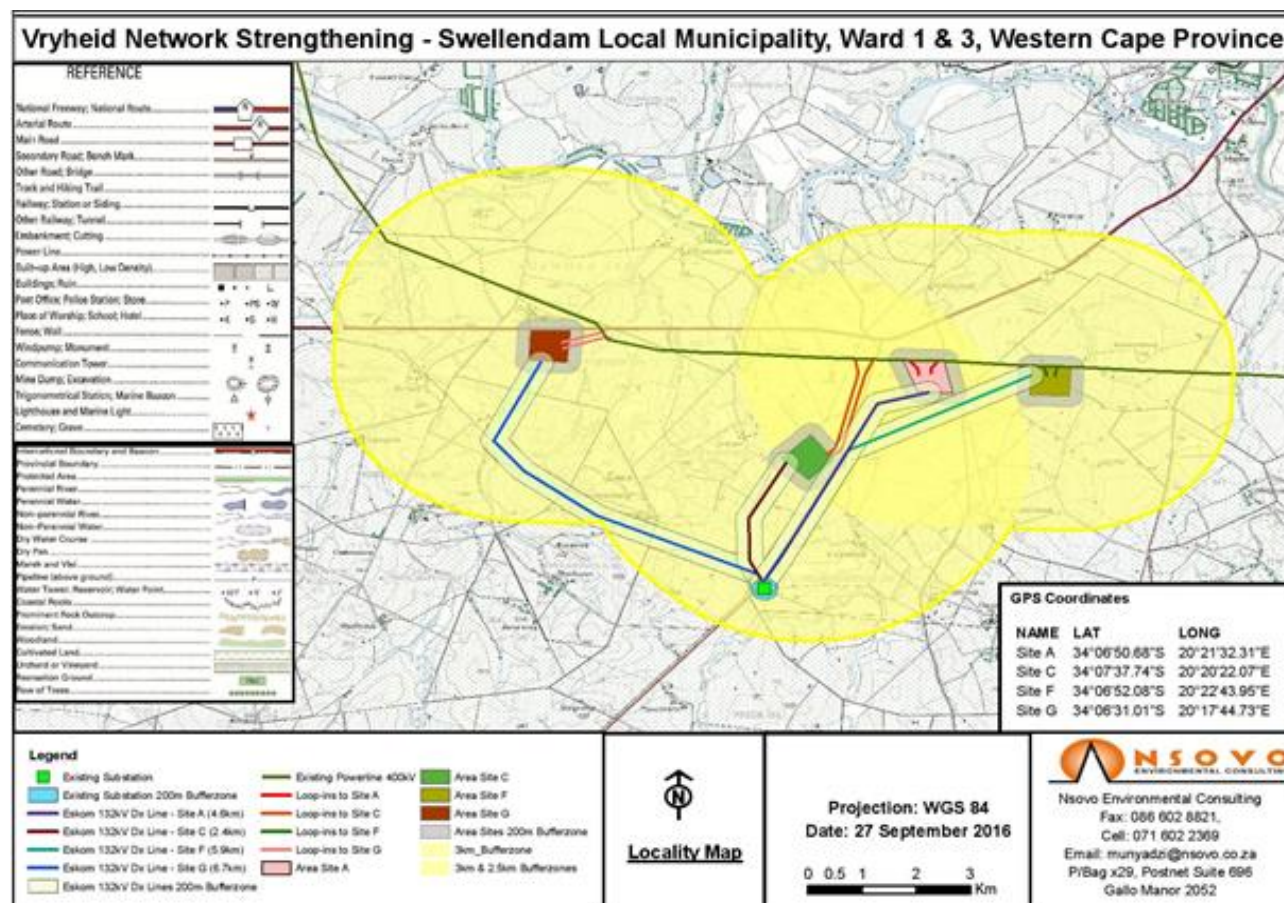


Figure 1: Locality Map

Locality and sensitivity maps have been attached as Appendix A.

The GPS coordinates of the centre points for the alternative substation sites are indicated in Table below.

Table 2: The GPS coordinates of the center points for the substation alternative sites

| Substation Alternative Site | Latitude | Longitude |
|-----------------------------|---------------|---------------|
| Alternative A | 34°06'52.81"S | 20°21'23.13"E |
| Alternative C | 34°07'40.77"S | 20°20'20.33"E |
| Alternative F | 34°06'54.57"S | 20°22'42.22"E |
| Alternative G | 34°06'31.00"S | 20°17'42.59"E |
| Existing Vryheid Substation | 34°08'58.02"S | 20°19'52.64"E |

4 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, 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 EMPr in all phases of the project.

The objectives of the EMPr are to:

- Ensure that the activity is undertaken in compliance with all statutory and regulatory requirements
- Ensure that Eskom Environmental Policies is underwritten at all times;
- All Landowner special conditions are identified and taken into consideration as the proposed project is located within private properties;
- 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.

5 GENERAL ENVIRONMENTAL GUIDELINES FOR THE CONSTRUCTION PHASE

This EMPr has been compiled in fulfillment with the requirements of the National Environmental Management Act, 1998 (Act 107 of 1998). This document serves as a guideline for the management of the site by the Eskom and his/her Contractor and subcontractors, in order to minimize adverse environmental impacts. Eskom will be responsible for ensuring compliance of the Contractor with the EMPr and will rely on the Environmental Control Officer (ECO) to monitor compliance. The Contractor must in turn monitor his/her employees to ensure compliance with the provisions of the EMPr.

The main Contractor shall receive a copy of the EMPr from Eskom on which he/she will be given the opportunity to clear any misconceptions and uncertainties. The EMPr will form part of the contract and will therefore be a legally binding document. In the event of discrepancy with regard to environmental matters or environmental specifications this document shall take precedence.

6 APPLICABLE LEGISLATION

This list is not intended as an exhaustive analysis of the applicable environmental legislations but 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). The principles set out in the National Environmental Management Act, 1998 (Act No. 107 of 1998), hereafter, referred to as NEMA, apply to all listed projects. Construction and operation have to be conducted in line with the generally accepted principles of sustainable development, integrating social, economic and environmental factors. |
| 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 necessity 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 | The object of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of the |

| Aspect | Relevant Legislation | Brief Description |
|------------------------------|---|---|
| | Management: Air Quality Act, 2004 (Act 39 of 2004) | <p>air quality and to prevent air pollution.</p> <p>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 by dust or other measures aimed at the control of dust.</p> |
| 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 ¹ . The preamble to the Act recognizes 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. |
| 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 | The Constitution of South Africa, 1996 (Act No. 108 of 1996) provides for an environmental right (contained in the Bill of |

| Aspect | Relevant Legislation | Brief Description |
|--------|----------------------|--|
| | of 1996 | <p>Rights, Chapter 2). In terms of Section 7, the state is obliged to respect, promote and fulfill the rights in the Bill of Rights. The environmental right states that:</p> <p>“Everyone has the right -</p> <p>a) To an environment that is not harmful to their health or well-being; and</p> <p>b) To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -</p> <ul style="list-style-type: none"> -Prevent pollution and ecological degradation; -Promote conservation; and -Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.” |

6.1 STANDARD ESKOM POLICIES TO BE COMPLIED WITH

In addition to the approved EMP, 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 EMP to ensure that the **most recent 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);
- Guidelines for weed eradication at Eskom substations using herbicides (TRR/S.92/034);
- 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).

6.2 METHOD STATEMENTS FOR THE ACTIVITIES TO BE CARRIED OUT

The following Method Statements (MS) must be prepared and signed by Eskom's construction team, ECO and the Contractor prior to commencement of activities on site:

- Vegetation clearing;
- Fauna and flora management;
- Excavations for construction of substation and installation of pylons;
- Chemical/hazardous substance storage;
- Cement/concrete use;
- Logistics of the environmental awareness training;
- Fire management;
- Emergency Response;
- Storm water and soil erosion management;
- Waste management;
- Access road(s);
- Contaminated water management;
- Site establishment and site layout plan;
- Use of herbicides/pesticides;
- Temporary site closure;
- Site Rehabilitation;
- Blasting;
- Alien plants removal and use of herbicides and pesticides; and
- Dust suppression.

This list has not exhausted all the activities/aspects that may require MS prior to commencement of the work. The ECO may require more MSs to be submitted as the project progresses.

7 PROJECT TEAM

7.1 ROLES AND RESPONSIBILITIES OF THE PROJECT TEAM

7.1.1 Environmental Control Officer

An independent Environmental Control Officer (ECO) must be appointed to assist the Contractor(s) on site regarding environmental matters. The primary role of the ECO is as follows:

- To provide an on-site environmental management service to Eskom to ensure effective implementation of EA, EMPr and landowner conditions.
- To ensure implementation and compliance with any Eskom site procedures and requirements.
- Be responsible for the planning and management of all environmental activities for this position, but more specifically the following:

7.1.1.1 Communication Services

- To liaise closely with the Eskom and Contractor's Environmental Officer (CEO)
- To ensure that the landowners agreed General and Special Conditions are implemented.
- To negotiate the Access Plan between landowners and Contractor and to ensure its implementation, so as to provide timeous servitude access to the Contractor to carry out its duties with as little interference/objections as possible.
- ECO must identify if any large turning circles are required for large machinery, before this access is negotiated.
- To agree with landowners where gates are to be installed at fence crossings, before the Contractor gains entry to the properties for construction activities.
- To agree with landowners on the bush clearing method.
- To assist the CEO in conflict resolution.
- Measuring and evaluating crop damage and other related claims, resulting from the construction activities, in conjunction with the landowner and submitting the relevant forms to the Project Manager for payment to the landowner (but not where the Contractor was negligent). This to be done equitably and timeously.
- 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.

7.1.1.2 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, CEO, 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 in 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 CEO.
- Checking the CEO's record of environmental incidents (spills, impacts, legal transgressions, etc.) as well as corrective and preventive actions taken.
- Checking the CEO'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.
- Timeously 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.

7.1.1.3 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.

7.1.1.4 Reporting

- To complete a daily diary, weekly and monthly (completed by the 24th of each month) reporting to Land and Rights and the Project/SHEQ/SHE/Environmental.
- To prepare monthly monitoring reports to be submitted to the DEA, Environmental Compliance Section.
- Manage on the compliance of the Contractor according to the environmental authorization, environmental management plan 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 Landowners' agreed general and special conditions or detrimental to the environment.

7.1.1.5 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 landowners, community, contractors and suppliers.

7.1.2 Contractor

- To provide all necessary supervision during the execution of the project. He/ She must be available on site at all times.
- To appoint a competent Contractor Environmental Officer (CEO).
- 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.
- Ensures compliance with pertinent environmental legislations and other legally binding documents.

7.1.3 Authorising Department

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

8 DESCRIPTION OF MITIGATION MEASURES

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

9 PRE- CONSTRUCTION MANAGEMENT PROGRAMME

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

9.1 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. | <ul style="list-style-type: none"> Ensure that all affected landowners are negotiated with prior to construction. Ensure that landowner special conditions are recorded and implemented. | <ul style="list-style-type: none"> Signed landowner consent forms. | Eskom | Prior commencement of construction activities |

9.2 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 by informing all parties of appropriate environmental protection measures. | <ul style="list-style-type: none"> The successful tendering Contractors will be made aware of the contents of this EMPr and any penalties arising from noncompliance prior to the commencement of work. All tendering Contractors will be made aware of the audit and monitoring requirements as stipulated in this EMPr. Appoint an Environmental Control Officer (ECO) who will be responsible to monitor compliance to the EMPr. Inform the department of the appointment of the ECO and provide the candidate's contact details. | <ul style="list-style-type: none"> Signed Declaration by contractor. Appointment Letter Proof of submission to DEA. | <ul style="list-style-type: none"> Eskom Contractor | Prior commencement of construction activities |

10 CONSTRUCTION MANAGEMENT PROGRAMME

10.1 SITE ESTABLISHMENT

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|--|--|-----------------------------|
| To ensure minimal disturbance of the environment during the site establishment. | <p>Prior to establishment of construction and site camps, the following items are to be undertaken by Project Manager and ECO:</p> <ul style="list-style-type: none"> • Identification suitable areas for the establishment of construction and site camps. • Site inspections of the areas identified for the construction camps are to be undertaken by Heritage, Vegetation and Ecology Specialists prior to establishment commencing. <p>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 on least sensitive locations preferably within already disturbed areas. After completion of the contract, these areas have to be rehabilitated.</p> <p>10.1.1 Site Plan:</p> <p>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:</p> <ul style="list-style-type: none"> • Site access (including entry and exit points). • All material and equipment storage areas including storage areas for hazardous substances. • Construction offices and other structures. • Security requirements including temporary and | <ul style="list-style-type: none"> • Observation • Site Plan • Landowner agreements | <ul style="list-style-type: none"> • ECO • Contractor • CEO | Prior to site establishment |

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------|--|---------------------|-------------------|----------------------|
| | <p>permanent fencing, and lighting.</p> <ul style="list-style-type: none"> • Solid waste management facilities. • Storm water control measures. • Provision of potable water and mobile chemical ablution facilities. <p>Throughout the period of construction, the Contractor shall restrict all activities to within the designated areas as per the construction layout plan. Any relaxation or modification of the construction layout plan is to be approved by the ECO.</p> <p>10.1.2 Site Camps:</p> <p>The following restrictions shall be placed on the site camp for the construction staff in general:</p> <ul style="list-style-type: none"> • The use of water courses for washing of clothes. • 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. • Use of surrounding veld as toilets. <p>10.1.3 Vegetation clearing:</p> <ul style="list-style-type: none"> • The natural vegetation encountered on site is to be conserved and left intact as much as possible. • Only flora within the construction footprint must be cleared. Clearance must be as per the approved Method statement in line with Eskom policies. • Search and rescue should be done by a Specialist in consultation with the ECO. | | | |

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------|---|---------------------|-------------------|----------------------|
| | <p>10.1.4 Water for human consumption:</p> <p>Water for human consumption must be available at all times.</p> <p>10.1.5 Sewage Treatment:</p> <ul style="list-style-type: none"> • 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 and will be entirely responsible for enforcing their use and for 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. | | | |

10.2 SENSITIVE ECOLOGY

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|--|-------------------|-----------------------|
| <ul style="list-style-type: none"> • To ensure that the sensitive area is not disturbed. • To ensure minimal or if all possible no disturbance to the vegetation on and around the site. • To prevent negative impact on animal life. | <p>None of the site alternatives are within intact vegetation therefore, general conditions will apply. The following conditions must be adhered to:</p> <ul style="list-style-type: none"> • Demarcate the construction footprint to avoid unnecessary vegetation clearing. Ensure that 'No-Go' areas are clearly demarcated and/or fenced before construction starts. Barriers are to be maintained in good order throughout the course of the construction. • The natural vegetation encountered on the site is to be | <ul style="list-style-type: none"> • Observation • ECO to monitor • Site plan | Eskom Contractor | Prior to construction |

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------|---|---------------------|-------------------|----------------------|
| | <p>conserved and left intact as much as possible.</p> <ul style="list-style-type: none"> • 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 of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas. • 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 into the areas disturbed by the construction activities are regularly removed and re-infestation monitored. <p>Considering the loss of natural habitat in the area and the fragmentation of the remaining areas the following measures must be implemented:</p> | | | |

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------|---|---------------------|-------------------|----------------------|
| | <ul style="list-style-type: none"> Any active faunal burrows within the development footprint should be located and marked before construction and avoided until the occupant animals can be excluded or have moved away due to the nearby construction activities. Any fauna threatened by construction activities should be removed to safety by the ECO or other suitably qualified person. During construction all vehicles should adhere to 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. Where necessary, dust suppression should be used to reduce dust impacts on surrounding areas. All construction staff should 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 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. | | | |

10.3 MATERIALS HANDLING, USE AND STORAGE

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|---|--|----------------------|--|
| <ul style="list-style-type: none"> To ensure safe handling, storage use and disposal of hazardous substances. To ensure full compliance with the requirements of the applicable legislation. | <p>The Contractor's management and maintenance of plant and machinery will be strictly monitored according to the criteria given below:</p> <p>10.3.1 Safety:</p> <ul style="list-style-type: none"> 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. <p>10.3.2 Hazardous Material Storage:</p> <ul style="list-style-type: none"> Hydrocarbons and hazardous substances will only be stored under controlled conditions. All hazardous materials will be stored in a secured, designated area with restricted entry. 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). <p>10.3.3 Fuels and Gas Storage:</p> <ul style="list-style-type: none"> Fuel must be stored in a steel tank supplied and maintained | <ul style="list-style-type: none"> Observation Incident Report | ECO & Contractor CEO | Continuous throughout the construction phase |

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------|---|---------------------|-------------------|----------------------|
| | <p>by the Contractor according to safety procedures.</p> <ul style="list-style-type: none"> The tanks/ bowzers shall be situated 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/ bowzers. Gas welding cylinders and LPG cylinders must be stored in a secure, well-ventilated area. The Contractor must supply sufficient firefighting equipment in the event of an accident and strictly no smoking will be allowed where fuel is stored and used. | | | |

10.4 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. | <ul style="list-style-type: none"> The CEO shall arrange for Environmental Awareness Training programs for all personnel on site. The training must include the content of the EMPr and the CEO must sensitise the team on the importance of compliance. Weekly toolbox talks must be undertaken by the CEO. | <ul style="list-style-type: none"> Signed training attendance Register Declaration of good conduct signed by all site personnel | <ul style="list-style-type: none"> CEO | Prior construction and to continue throughout construction through toolbox talks. |

10.5 WATER SUPPLY

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|--------------------------|-------------------|---------------------------------------|
| <ul style="list-style-type: none"> 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) | <ul style="list-style-type: none"> The Contractor must ensure that all water sources are authorized 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 portable water for human consumption at all times. | Water consumption record | ECO Contractor | Ongoing during the construction phase |

10.6 VEHICULAR ACCESS AND MOVEMENT OF CONSTRUCTION VEHICLES

| Possible Impact | Objective | Applicable Legislation /Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|--|---|--|---|----------------------|--|
| <ul style="list-style-type: none"> Damage to protected /endangered vegetation. Damage to sensitive areas. Erosion and | <ul style="list-style-type: none"> To prevent ecological damage. Minimise damage to the identified | <ul style="list-style-type: none"> CARA NEMBA NWA | <ul style="list-style-type: none"> 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, | <ul style="list-style-type: none"> Access plan approved by the ECO No complaints from landowners. No access | <ul style="list-style-type: none"> Photographic record of private roads prior to the Contractor using the roads. Site plan | ECO & Contractor CEO | Continuous during the construction phase |

| Possible Impact | Objective | Applicable Legislation /Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|------------------|--|--------------------------------|--|--|---|-------------------|----------------------|
| loss of topsoil. | <p>d watercourses.</p> <ul style="list-style-type: none"> Minimise erosion of embankments and subsequent siltation of watercourses. | | <p>access roads, haul roads or paths before commencing any other work. If proved insufficient for control, these will be replaced. Ensure that access roads to the site are of a suitable quality to eliminate soil erosion and channel storm water.</p> <ul style="list-style-type: none"> 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 disturbance area should be kept minimal (A two track dirt road will be the most preferred option). | <p>roads through wetlands</p> <ul style="list-style-type: none"> No visible erosion scars 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 | <ul style="list-style-type: none"> Regular monitoring of access roads 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 |
|-----------------|-----------|--------------------------------|--|-----------------------|---------------------|-------------------|----------------------|
| | | | <ul style="list-style-type: none"> The Contractor must not construct a road with a reserve wider than 13, 5 metres, or where no reserve exists where the 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 to their original state. All existing farm roads (private roads) damaged during the construction phase, should at the end of construction be repaired to the satisfaction of the landowner, as per the conditions of the written contractual agreement between the landowner and the Contractor. | | | | |

10.7 MOVEMENT OF CONSTRUCTION PERSONNEL AND EQUIPMENT

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|--|--|--|---|-------------------|---|
| <ul style="list-style-type: none"> Impact on sensitive environs. Trespassing Safety and security. | <ul style="list-style-type: none"> To ensure controlled and manageable movement of personnel and equipment. | <ul style="list-style-type: none"> TRMP VACV 2 REV1 | <ul style="list-style-type: none"> 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 Contractor/ labourers must obtain permission from the CEO. 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 | <ul style="list-style-type: none"> No trespassing of contractor's workforce. No complaints from landowners | <ul style="list-style-type: none"> Observation Security registers. Complaints register | ECO & Contractor | Continuous throughout the construction phase. |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|--|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>to the environment and injury to persons are taken in the event of an accident and shall provide a Method statement to that effect.</p> <ul style="list-style-type: none"> The Contractor is to ensure that no machinery, personnel, material, or equipment enters 'No-Go' areas during the course of the project. | | | | |

10.8 PROTECTION OF FAUNA AND AVIFAUNA

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|---|---|--|--|--|---|
| <ul style="list-style-type: none"> Damage to habitat Negative impact on bird due to electrocution and faulting Negative impact on animal life. | <ul style="list-style-type: none"> To conserve animal life. To ensure that impact on natural vegetation is kept to the minimum in order to conserve | <ul style="list-style-type: none"> NEMBA | <p>Considering the loss of natural habitat in the area and the fragmentation of the remaining areas the following measures must be implemented:</p> <ul style="list-style-type: none"> Avoid unnecessary disturbance of faunal habitats. Any bird nests that are found must be left intact/undisturbed and must be reported to the Environmental Control Officer (ECO). | <ul style="list-style-type: none"> No reported faunal injuries No complaints from landowners | <ul style="list-style-type: none"> Observation Complaints register that records complaints from landowners Daily inspection | <ul style="list-style-type: none"> ECO CEO | On-going during the construction phase. |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|---|--------------------------------|--|-----------------------|---------------------|-------------------|----------------------|
| | <p>suitable habitats as much as possible.</p> <ul style="list-style-type: none"> 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 | | <ul style="list-style-type: none"> The loop in loop out 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 used as much as possible 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 should 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 interfered with by the construction team. | | | | |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|--|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | <p>fauna species is kept to a minimum</p> <ul style="list-style-type: none"> 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 | | <ul style="list-style-type: none"> 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 CEO 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 breeding in the vicinity, the ECO must be notified. | | | | |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <ul style="list-style-type: none"> Anti-collision devices must be installed as soon as the wires are strung. | | | | |

10.9 HERITAGE AND/OR ARCHAEOLOGICAL SITES

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|--|--|--|---|---|---------------------------------|
| <ul style="list-style-type: none"> Destruction of sites of archaeological and heritage significance. Loss of historic cultural landscape. Loss of intangible heritage value due to change in land use. | <ul style="list-style-type: none"> To preserve any heritage, cultural or archaeological sites that might be encountered during the construction phase. Protection of known sites against destruction, vandalism and theft. Preservation and appropriate management | <ul style="list-style-type: none"> NHRA | <p>The heritage significance of each alternative site 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:</p> <ul style="list-style-type: none"> If, during construction, archaeological or palaeontological objects or material is discovered, the find must immediately be reported to the ECO and the heritage authority must be notified. No person may, without a permit, destroy damage, excavate, alter, | <ul style="list-style-type: none"> Detailed record of chance finds. No destruction of or damage to known archaeological sites Management of existing sites and new discoveries in accordance with the recommendations of the Archaeologist. No litigation due to | <ul style="list-style-type: none"> Intermittent observation. | <ul style="list-style-type: none"> ECO & Contractor CEO Archaeologist | On-going during all excavations |

| | | | | | | | |
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| | of any new archaeological sites should this be discovered during construction. | | <p>deface or otherwise disturb any archaeological or palaeontological site or any meteorite. If any archaeological material (e.g. fossils, bones, artefacts etc.) is found during excavation, the contractor shall stop work immediately and inform the Construction Manager.</p> <ul style="list-style-type: none"> The Contractor shall not commence working in that area until written permission has been received from the SAHRA. | destruction of sites. | | | |
|--|--|--|---|-----------------------|--|--|--|

10.10 SERVICING AND RE-FUELLING OF CONSTRUCTION EQUIPMENT

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|--|--|---|---|--|--|
| <ul style="list-style-type: none"> Impact on soil and water resources due to accidental spillages. | <ul style="list-style-type: none"> To conserve soils, surface and ground water. To prevent spillages of hazardous substances | <ul style="list-style-type: none"> NEMWA NWA OHSA | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> No evidence of hazardous substances polluting the site. | <ul style="list-style-type: none"> On-going monitoring with regular inspections; and Service Records. | <ul style="list-style-type: none"> ECO & Contractor CEO | On-going during the construction phase |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <ul style="list-style-type: none"> Drip trays must be placed under stationary vehicles and machinery at all times. 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. Fuels 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. | | | | |

10.11 WASTE MANAGEMENT

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

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|---|---|---|---|--|--|----------------------|
| <ul style="list-style-type: none"> Visual Impact Water resources Land pollution | <ul style="list-style-type: none"> To ensure the efficient management of waste on site To ensure minimal impact on the surrounding environment Minimise waste material being strewn in the environment | <ul style="list-style-type: none"> NEMWA | <p>10.11.1 SOLID WASTE MANAGEMENT</p> <ul style="list-style-type: none"> 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 Contractor may not dispose of any waste and / or construction debris by burning, or burying. Waste bins must be emptied regularly (minimum weekly) such | <ul style="list-style-type: none"> Presence of proper storage facilities that are properly labelled. Post-construction work areas are clear of all waste materials. | <ul style="list-style-type: none"> Intermittent Observation Waste Disposal Records | <ul style="list-style-type: none"> ECO & Contractor CEO | Daily |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|--|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>that they do not overfill.</p> <ul style="list-style-type: none"> The Contractor shall maintain 'good housekeeping' practices and ensure that all work sites and the construction camp is kept tidy and litter free. <p>10.11.2 LIQUID WASTE MANAGEMENT</p> <ul style="list-style-type: none"> 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. | | | | |

10.12 SURFACE AND GROUND WATER MANAGEMENT

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|-------------------------------|--|---|---|--|--|
| <ul style="list-style-type: none"> Possible contamination of water resources. | <ul style="list-style-type: none"> 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 the development. To ensure compliance | NWA | <ul style="list-style-type: none"> 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 into the surrounding natural environment. All soil contaminated must be excavated to the depth of contaminant penetration, placed in suitable drums/containers and 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 | <ul style="list-style-type: none"> Unpolluted water course | <ul style="list-style-type: none"> Observation Design Plans | <ul style="list-style-type: none"> Contractor ECO CEO | Continuous through the construction phase. |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------------------------------|-------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | with the requirements of the Act. | | <p>water runoff.</p> <ul style="list-style-type: none"> Storm water management measures must be as per the Method Statement prepared by the Contractor for ECO approval. 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. | | | | |

10.13 SENSITIVE AREAS (WATER COURSES AND BUFFERS)

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|-------------------------------|--|---|--|--|--|
| <ul style="list-style-type: none"> Changing the quantity and fluctuation | <ul style="list-style-type: none"> To preserve and conserve | NWA | Watercourses were identified on the proposed site alternatives and these included a wetland, drainage line and | <ul style="list-style-type: none"> Undisturbed sensitive environment | <ul style="list-style-type: none"> Observation WUL | <ul style="list-style-type: none"> CEO ECO Contractor | Throughout the construction and post construction to ensure proper |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---------------------------|--------------------------------|---|--|---------------------|-------------------|----------------------|
| <p>properties of the watercourse.</p> <ul style="list-style-type: none"> 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, zinc) and hydrocarbons. Changing the physical | the sensitive environment | | <p>seven non-perennial rivers. The following mitigation measures must be considered during different phases of the project:</p> <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> - the use of sand bags, hessian sheets, silt fences, retention or 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 | <p>s and/or properly rehabilitated.</p> <ul style="list-style-type: none"> Compliance with the WUL conditions | | | rehabilitation. |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|------------------------------------|-----------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| structure within a water resource. | | | <p>an area is complete or near complete and not left until the end of the project to be rehabilitated.</p> <ul style="list-style-type: none"> Any channel banks that will be affected must be re-profiled as per the original soil horizon structure and re-vegetated with indigenous species. 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 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 | | | | |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|--|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>other equipment adjacent to the watercourses is permitted.</p> <ul style="list-style-type: none"> • 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 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. | | | | |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <ul style="list-style-type: none"> Vehicles must not be permitted to be cleaned or serviced in or near aquatic ecosystems. Vehicle servicing if necessary must take place offsite. Construction must take place during the dry season to avoid the risk of rainfall events transporting construction chemicals downslope. Cordon-off areas that are under rehabilitation as no-go areas. If necessary, these areas should be cordoned off to prevent vehicular, pedestrian and livestock access. Runoff from roads must be managed to avoid erosion and pollution problems. Demarcate the watercourses and buffer zones to limit disturbance and clearly mark these areas as no-go areas. Recommendation from Department of Water and Sanitation as part of the licencing process must be taken into consideration throughout the construction phase. | | | | |

10.14 HAZARDOUS MATERIALS

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|---|---|---|--|--|--|
| <ul style="list-style-type: none"> Impact on soils and water resources | <ul style="list-style-type: none"> To ensure safe and proper handling of hazardous material | <ul style="list-style-type: none"> HSA | <ul style="list-style-type: none"> The Contractor must comply with all National, Regional and Local legislation with regard to the storage, transport, use and disposal of petroleum, chemical, harmful and hazardous substances and materials. Spill kits must be made available on site at all times. The CEO 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. | <ul style="list-style-type: none"> No incidents reported | <ul style="list-style-type: none"> Hazardous material data sheet Incident reports Observation of spillages and leakages | <ul style="list-style-type: none"> ECO & Contractor CEO | Continuous throughout the construction phase |

10.15 OIL SPILL MANAGEMENT

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|---|---|---|--|--|---|
| <ul style="list-style-type: none"> Impact on soils and water resources | <ul style="list-style-type: none"> To avoid ground and surface water contamination To ensure proper and safe handling of oil spillages. | <ul style="list-style-type: none"> HSA | <ul style="list-style-type: none"> 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 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. | <ul style="list-style-type: none"> No incident reported Proper use of drip trays Presence of oil spill kit | <ul style="list-style-type: none"> Observation Incident report | <ul style="list-style-type: none"> ECO Contractor CEO | On-going during the construction phase. |

10.16 STORM WATER MANAGEMENT

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|---|--|--|--|--|------------------------------------|
| <ul style="list-style-type: none"> Possible negative | <ul style="list-style-type: none"> To reduce the potential | <ul style="list-style-type: none"> NWA | <ul style="list-style-type: none"> The Contractor must ensure that rainwater pollutants from construction activities does not run-off into natural areas and thus result in a pollution | <ul style="list-style-type: none"> No evidence of erosion No | <ul style="list-style-type: none"> Site Plan Observation | <ul style="list-style-type: none"> ECO Contractor CEO | Continuous during the construction |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---------------------------|--|--------------------------------|--|---|---------------------|-------------------|----------------------|
| impact on water resources | impact from runoff on sensitive areas. | | <p>threat.</p> <ul style="list-style-type: none"> Storm water shall be diverted from the construction works. 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. | <p>evidence of increased siltation</p> <ul style="list-style-type: none"> No evidence of contaminated water courses. | | | |

10.17 FIRE

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|--|---|---|--|--|--|
| <ul style="list-style-type: none"> • Destruction of property • Loss of life • Destruction of crops and livestock | <ul style="list-style-type: none"> • To prevent open fires. • To ensure that the workforce is aware of emergency procedures should an incident occur | <ul style="list-style-type: none"> • NEMA • | <ul style="list-style-type: none"> • A fire Management Method Statement must be put in place by the Contractor. Landowners must be consulted in order to incorporate their specific firefighting 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 (firefighting 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 | <ul style="list-style-type: none"> • No reported fire incidents • No loss of life • No traces of cigarettes butts outside the designated smoking area. | <ul style="list-style-type: none"> • Fire Management Plan • Daily checks | <ul style="list-style-type: none"> • ECO • Contractor • CEO | On-going during the construction phase |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|-------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>areas.</p> <ul style="list-style-type: none"> Designated smoking areas must be provided, with special bins for discarding of cigarette stump. Fire must be reported immediately. | | | | |

10.18 AIR POLLUTION

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|--|--|---|--|--|--|
| <ul style="list-style-type: none"> Dust nuisance from excavations, vegetation clearing and dirt roads. Exhaust fumes from construction vehicles. | <ul style="list-style-type: none"> To ensure proper mitigation of air pollution To avoid dust nuisance from excavation activities and vehicles on dirt roads | <ul style="list-style-type: none"> NEMAQA | <p>The potential air pollutants would be dust emanating from excavation activities and access roads; emissions or exhaust fumes from faulty plant or equipment. The following measures must be put in place:</p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> No complaints from surrounding land owners recorded. No evidence of dust pollution plumes on site. | <ul style="list-style-type: none"> Observation Complaints register | <ul style="list-style-type: none"> ECO Contractor CEO | On-going throughout the construction phase |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>access road must be adhered to in order to minimise or avoid dust pollution.</p> <ul style="list-style-type: none"> Construction vehicles and equipment must be in good working order and serviced regularly. | | | | |

10.19 NOISE IMPACT

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|---|--|--|---|--|--|
| <ul style="list-style-type: none"> Noise during excavation/drilling of foundations and associated activities | <ul style="list-style-type: none"> To ensure minimal noise disturbance To ensure proper mitigation of noise. To avoid noise nuisance from operating construction | <ul style="list-style-type: none"> ECA | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> No complaints from surrounding land owners recorded. | <ul style="list-style-type: none"> Noise monitoring A register of complaints to be kept on site at all times and kept up to date. | <ul style="list-style-type: none"> Contractor ECO CEO | On-going during the construction phase |

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|------------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | equipment. | | must be recorded and reported to the ECO and addressed accordingly. Labourers to be provided with hearing protection as and when required. | | | | |

10.20 VISUAL IMPACT

| Possible Impact | Objective | Applicable Legislation/ Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|--|---|---|--|----------------------|---|
| <ul style="list-style-type: none"> Loss of sense of place. | <ul style="list-style-type: none"> To ensure proper mitigation of potential visual impacts. To maintain the site's aesthetics. | <ul style="list-style-type: none"> NEMA | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Clean and tidy site. No complaints from the landowners and affected parties. | <ul style="list-style-type: none"> Observation Complaints register | ECO & Contractor CEO | On-going during the construction phase. |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|-------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <ul style="list-style-type: none"> The site must be clean and tidy at all times. | | | | |

10.21 TRAFFIC IMPACT

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|--|--|--|--|--|--|
| <ul style="list-style-type: none"> Possible traffic increase Car accident Irregular traffic pattern during construction phase. Impact on road safety, congestion, wear and tear of the road surface. | <ul style="list-style-type: none"> To maximise road safety, and minimise congestion To ensure that traffic impacts as a result of the construction related activities are minimized. | <ul style="list-style-type: none"> NLTA | <ul style="list-style-type: none"> 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. Use minibus or taxis to minimise traffic. 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 | <ul style="list-style-type: none"> No increase in accident rate No complaints from the landowners and affected parties | <ul style="list-style-type: none"> Observation Complaints report | <ul style="list-style-type: none"> Contractor / ECO CEO | On-going during the construction phase |

| | | | | | | | |
|--|--|--|---|--|--|--|--|
| | | | vehicles to avoid morning and afternoon peak hours. | | | | |
|--|--|--|---|--|--|--|--|

10.22 EXCAVATION, BACKFILLING AND TRENCHING

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|--|---|--|--|--|----------------------|
| <ul style="list-style-type: none"> Possible erosion Injury of animal life | <ul style="list-style-type: none"> To prevent erosion. To ensure safety for both human and animals. | <ul style="list-style-type: none"> OHSA | While working at areas prone to erosion the following must be adhered to: <ul style="list-style-type: none"> Excavations must not be left open for longer than 7 days. Excavations must be barricaded/ fenced off at all times. | <ul style="list-style-type: none"> No incidence of animals trapped in trenches reported | <ul style="list-style-type: none"> Observation Incident report | <ul style="list-style-type: none"> Contractor / ECO CEO | On-going excavations |

10.23 AGRICULTURAL ACTIVITIES

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|---|-------------------------------|--|---|--|--|---|
| <ul style="list-style-type: none"> Negative Impacts on agricultural activities. | <ul style="list-style-type: none"> To limit the impact on agricultural activities. To avoid undue loss of | CARA | <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> No encroachment into agricultural crops No negative feedback from landowners | <ul style="list-style-type: none"> Observation Complaints register | <ul style="list-style-type: none"> ECO CEO Contractor | During and after maintenance procedures |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|----------------------|-------------------------------|--------------------------------|-----------------------|---------------------|-------------------|----------------------|
| | livestock and crops. | | reason. | | | | |

10.24 EROSION AND CONTROL

| Possible Impact | Objective | Applicable Legislation /Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|---|---|---|--|--|--|--|
| <ul style="list-style-type: none"> Impact on soils and habitats and sensitive environs. | <ul style="list-style-type: none"> To prevent erosion and sedimentation. | <ul style="list-style-type: none"> NWA | <p>To prevent any form of erosion the following must be adhered to:</p> <ul style="list-style-type: none"> 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 | <ul style="list-style-type: none"> No visible signs of erosion. | <ul style="list-style-type: none"> Observation Complaints register | <ul style="list-style-type: none"> Contractor ECO CEO | On-going particularly during excavations |

| Possible Impact | Objective | Applicable Legislation /Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|--|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>compacted and must be replaced as the final soil layer.</p> <ul style="list-style-type: none"> • Stockpiled soil must be protected by erosion-control berms if exposed for a 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 | | | | |

| Possible Impact | Objective | Applicable Legislation /Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|-----------|--------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| | | | <p>onto site.</p> <ul style="list-style-type: none"> Where required, cut-off trenches can be installed to divert substantial run-off and prevent erosion as and when necessary. Where new roads are constructed, water diversion berms should 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. Any roads along slopes should have water diversion structures placed at regular intervals to ensure that they do not capture overland flow and become eroded. | | | | |

10.25 USE OF CEMENT AND CONCRETE

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|--|--|---|--|--|-----------------------------------|
| <ul style="list-style-type: none"> Soil, surface and ground water pollution. | <ul style="list-style-type: none"> To conserve soils, surface and groundwater. To minimise waste concrete from polluting the environment | <ul style="list-style-type: none"> NEMA NEMWA HSA | <p>Cement and concrete are regarded as highly hazardous to the natural environment due to their high pH and the chemicals contained therein. To avoid ground pollution the following must be implemented:</p> <ul style="list-style-type: none"> Pre-mix concrete shall be the preferred option where possible. <p>If concrete mixing is undertaken on site, the following measures must be put in place:</p> <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Areas of construction are clear of all concrete residue/waste following construction. | <ul style="list-style-type: none"> Observation Site Plan | <ul style="list-style-type: none"> Contractor ECO CEO | Throughout the construction phase |

10.26 SITE CLEAN-UP AND REHABILITATION

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|--|---|--|---|--|--------------------------|---|
| <ul style="list-style-type: none"> Erosion Spread of alien invasive plant species | <ul style="list-style-type: none"> Minimise damage to topsoil and environment at tower positions Successful rehabilitation of all damaged areas Prevention of erosion. To ensure that the site is fully rehabilitated to its original state. To ensure that the site is clean and neat. | <ul style="list-style-type: none"> NEMBA NEMA | <ul style="list-style-type: none"> 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 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 CEO 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. | <ul style="list-style-type: none"> No loss of topsoil due to construction activities No loss of topsoil due to construction activities 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 | <ul style="list-style-type: none"> Rehabilitation Plan Observation | ECO CEO Contractor | <p>On completion of construction</p> <p>Random surveys by landowner</p> |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------|--|-------------------------------|--------------------------------|--|---------------------|-------------------|----------------------|
| | <ul style="list-style-type: none"> Minimize claims and litigation from landowners | | | <p>shall be allowed on site under any circumstance</p> <ul style="list-style-type: none"> No evidence of rubble or litter left on site. Successful completion of the contract with all landowners signing the release form six months after completion of the project. | | | |

10.27 INFRASTRUCTURE

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

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|-------------------------------|---|---|--|--|--|
| <ul style="list-style-type: none"> Damage to fence, gates and other services Loss of livestock | <ul style="list-style-type: none"> Minimise damage to infrastructure such as fence, gates. Prevent loss of livestock Minimize claims and litigation from landowners | Fencing Act (Act 31 of 1963) | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> No complaints from the landowners with regards to broken fences and gates. All gates closed during the construction phase. | <ul style="list-style-type: none"> Complaints register Observation | <ul style="list-style-type: none"> ECO CEO Contractor | <ul style="list-style-type: none"> During construction and completion of construction Random surveys landowner |

11 OPERATION PHASE

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|---------------------------------------|---|-------------------------------------|--|--|----------------------|
| <ul style="list-style-type: none"> Access roads used for maintenance might impact on vegetation and water courses. Bird collisions with power lines and possible bird electrocutions. Waste generation during the operation phase will have a negative impact on the environment, if not | <ul style="list-style-type: none"> To prevent ecological damage. Minimise damage to the identified watercourses. Reduce the deaths of birds caused by collision and electrocution. To prevent littering on site by storing waste appropriately. Prevent loss of life of people and livestock due to electrocution. | NEMA NWA NEMWA NEMBA OHSA | <p>11.1.1 Access road</p> <ul style="list-style-type: none"> Existing access roads should be used as far as possible, ensuring proper maintenance and upgrade. No vehicles should be allowed to cross water courses in any area other than an approved crossing. Appropriate erosion measures must be in place to prevent any impact in surrounding habitat. <p>11.1.2 Avifauna</p> <p>The pylons (both transmission and distribution) must be fitted with bird perches on top to draw birds away from the potentially risky insulators.</p> <p>11.1.3 Waste</p> <ul style="list-style-type: none"> Where possible, construction | No complaints from the land owners. | <ul style="list-style-type: none"> Complaints register Observation | <ul style="list-style-type: none"> Project Manager ECO | Weekly |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|-----------|-------------------------------|---|-----------------------|---------------------|-------------------|----------------------|
| <p>controlled adequately.</p> <ul style="list-style-type: none"> Waste generation during the operational phase will have a negative impact on the environment if not controlled adequately. Waste will include general and hazardous wastes. There is the potential risk of electrocution (people and livestock) | | | <p>waste on site must be reused or recycled.</p> <ul style="list-style-type: none"> Disposal of waste must be in accordance with relevant legislative requirements. The Contractor must familiarize themselves with the definitions of waste and the handling, storage and transport of it as prescribed in the applicable environmental legislation. Burning of waste material will not be permitted. <p>11.1.4 Safety</p> <ul style="list-style-type: none"> Safety and security issues should be addressed as a priority. It is recommended that the landowners are contacted in advance to ensure that they are forewarned of the construction and maintenance activities planned in the area. | | | | |

| Possible Impact | Objective | Applicable Legislation/Policy | Mitigation / Management Action | Performance Indicator | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|-----------|-------------------------------|--------------------------------|-----------------------|---------------------|-------------------|----------------------|
| if access to the site is not controlled. | | | | | | | |

11.1 MONITORING OF EMPR COMPLIANCE

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|--|--|---|--|-------------------------------|
| To implement an on-going monitoring and performance audit programme. | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> Observation Checklist Daily Register Attendance Registers Photographic evidence Audit and Monitoring Reports | <ul style="list-style-type: none"> ECO & Contractor CEO | On-going post rehabilitation. |

11.2 DOCUMENT CONTROL

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|-----------------------------|--|---------------------------|-------------------|----------------------|
| • To ensure compliance with | • A copy of the EMPr and the EA will be made | • Availability of an EMPr | • ECO & | On-going during |

| Objective | Mitigation / Management Action | Monitoring Criteria | Responsible Agent | Monitoring Frequency |
|---|---|---|---|--------------------------------|
| <p>the requirements of the regulatory authority</p> <ul style="list-style-type: none"> • To assign roles and responsibilities to ensure compliance • To implement and comply with the requirements of the EMPr. | <p>available on site at all times.</p> <ul style="list-style-type: none"> • The EMPr as well as the EA will be used for referral as the project progresses. The EA will 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. | <p>copy on site</p> <ul style="list-style-type: none"> • Report submission Transmittal | <ul style="list-style-type: none"> • Contractor • CEO | <p>the construction phase.</p> |

12 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.

13 GENERIC CONDITIONS

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

13.1 SITE DOCUMENTATION/MONITORING

The standard Eskom site documentation shall be used to keep records on site. All documents shall 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 shall 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 Environmental Control Officer is not available, the Contract Manager/Site 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 diary.
- Records of all remediation / rehabilitation activities.
- Copies of monthly reports to the Environmental Advisor.
- Copy of the EMP.
- Copy of the EA.

13.2 AUDITS

During the construction period at least monthly Environmental Audits shall be conducted by the ECO to determine compliance with the recommendations of the EMPr and conditions of the EA.

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 CEO 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.

13.3 ACCESS TO DOCUMENTS

Interested and Affected Parties (Landowners) must be allowed access to the EMPr document should they so wish. They have the right to monitor specific aspects of the Construction and Operation EMPr in conjunction with the ECO and Contractor in a reasonable and informal manner, without unreasonably disrupting construction activities.

13.4 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.

14 FAILURE TO COMPLY WITH THE ENVIRONMENTAL CONSIDERATIONS

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