

DRAFT

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

**PROPOSED ELECTRICAL LINE OF 2 X 400 kV WHICH RUNS FROM
ARIES SUBSTATION NEAR KENHARDT TO UPINGTON
SUBSTATION NEAR UPINGTON, IN THE KAI GARIB AND KHARA
HAIS LOCAL MUNICIPALITY, MGCWU DISTRICT MUNICIPALITY,
NORTHERN CAPE PROVINCE**

Green Gold Ref: GGG24/34

Report Date: 2024 08 30

PREPARED BY:

GREEN GOLD GROUP (PTY) LTD

PREPARED FOR:

ESKOM HOLDINGS SOC LTD



PROJECT DETAILS	
Project Title	Proposed electrical line of 2 X 400 kV which runs from the Aries substation NEAR Kenhardt to the Upington substation near Upington, in the Kai Garib and Khara Hais Local Municipality, Mgcawu District Municipality, Northern Cape Province
Applicant	Eskom Holdings SOC Ltd
Environmental Assessment Practitioner	Tokollo Kobe (EAPASA Reg. No.: 2021/3499)
Report Status	Draft Environmental Management Programme Report
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Revision 2	2 August 2024	Lebohang Moiloa Thato Mdluli	

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LIST OF ABBREVIATIONS AND ACRONYMS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&AP's	Registered interested and affected parties

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1. INTRODUCTION

1.1. Purpose and scope of EMPR

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended, (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the competent authority (CA).

This document constitutes a generic EMPr relevant to applications for the development or expansion of overhead electricity transmission and distribution infrastructure, and all listed and specified activities necessary for the realisation of such infrastructure.

The scope of this generic EMPr applies to the development or expansion of overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realisation of such infrastructure.

1.2. Objectives of EMPR

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPs for applications of a similar nature.

2. STRUCTURE OF THIS DOCUMENT

This document is structured in three parts with an Appendix as indicated in the table below:

Table 1 Breakdown of the structure of the report

PART	SECTION	HEADING	CONTENT
A		Provides general guidance and information and is not legally binding.	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template.	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved.
			<p>The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to the commencement of the activity.</p> <p>Where an impact management outcome is not relevant, the words inserted in the template under the “responsible “not applicable” can be persons” column.</p> <p>Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template is not required to be submitted to the CA as once the generic EMPr is gazette for implementation, it has been approved by the CA.</p> <p>To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the</p>

			applicant/proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site-specific information	<p>Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are legally binding. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of Part C.</p> <p>This section must be submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.</p>
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre- approved EMPr template (Part B: section 1)

		<p>This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it is required to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP, and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding.</p> <p>This section applies only to additional impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.</p>
Appendix 1		Contains the method statements to be prepared prior to the commencement of the activity. The method statements are not required to be submitted to the competent authority.

3. COMPLETION OF PART B: SECTION 1: THE PRE-APPROVED GENERIC EMPR TEMPLATE

The template is to be completed prior to the commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
- a 'responsible person'
- a method for implementation
- a timeframe for implementation
- For monitoring
- a responsible person
- frequency
- evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to the commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

4. AMENDMENTS OF THE IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in regulation 37 of the EIA Regulations; and
- Amendment of the impact management actions: in line with the process contemplated in regulation 36 of the EIA Regulations.

PART A – GENERAL INFORMATION

5. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

“clearing” means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

“construction camp” is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

“contractor” - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

“hazardous substance” is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

“Method Statement” means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover applicable details with regard to:

- Construction procedures;
- Plant, materials and equipment to be used;
- Transporting the equipment to and from site;
- How the plant/ material/ equipment will be moved while on site;
- How and where the plant/ material/ equipment will be stored;
- The containment (or action to be taken if containment is not possible) of leaks or spills

of any liquid or material that may occur;

- Timing and location of activities;
- Compliance/ non-compliance; and
- Any other information deemed necessary by the Project Manager.

“slope” means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

solid waste” means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

“spoil” means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

“topsoil” means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil; and

“works” means the works to be executed in terms of the Contract.

6. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead electricity transmission and distribution infrastructure projects as a minimum requirement.

6.1. Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

6.2. Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

6.3. Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

6.4. Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

6.5. Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr. The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

6.6. Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be

addressed immediately by the ECOs. (For example, a contractor's staff member littering or a drip tray that has not been emptied);

- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

6.7. Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.

The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on

the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions, as approved in generic and site-specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause an environmental impact.

6.8. Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's CEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action, the CEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign off on the Corrective Action Report and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has been signed off by the ECOs.

6.9. Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during, and post-rehabilitation evidence of the project as well as used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

Allow the ECOs access to take photographs of all areas, activities and actions. The ECOs shall keep an electronic database of photographic records which will include:

- Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
- All bunding and fencing;
- Road conditions and road verges;
- Condition of all farm fences;
- Topsoil storage areas;
- All areas to be cordoned off during construction;
- Waste management sites;
- Ablution facilities (inside and out);

- Any non-conformances deemed to be “significant”;
- All completed corrective actions for non-compliance;
- All required signage;
- Photographic recordings of incidents;
- All areas before, during and post-rehabilitation; and
- Include relevant photographs in the Final Environmental Audit Report.
- Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

- Record the name and contact details of the complainant;
- Record the time and date of the complaint;
- Contain a detailed description of the complaint;
- Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
- Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO’s written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described below.

6.10. Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

- Record the full detail of the complaint as described above;
- The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
- Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer’s negotiator and legal department; and
- A formal record of the response by the ECOs to the claimant as well as the

rectification of the method of making payments not amount will be recorded in the EMPr file.

6.11. Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

- Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
- Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
- Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
- Ensure that contact with affected parties is courteous at all times.

6.12. Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes must be included in the EMPr file and be submitted to the CA at intervals as indicated in the EA.

An Environmental Audit Report must be prepared monthly. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum, the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

6.13. Final environmental audits

Upon completion of the rehabilitation and/or requirements of the EA, a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

7. PROJECT DESCRIPTION

Eskom Holding SOC Limited is proposing to construct a 2X 400kV Transmission Powerline Infrastructure from Aries Substation Near Kenhardt to Upington substation near Upington. The proposed powerline length is 145 km.

7.1. Project Location

At a regional level, the study area lies within the Northern Cape Province and is situated within the Kai! Garib Local Municipality and Khara Hais Local Municipality. The route for the proposed powerline deviation extending from the Aries substation near Kenhardt to the Upington substation near Upington is an approximate distance of 145 km.

Physical Address and Farm Name	The power line crosses multiple properties over 145km distance
Coordinates (center)	Mid-point: 28° 52' 47.0" S 20° 42' 33.3" E
Local Authority	Kai! Garib Local Municipality and Khara Hais Local Municipality
District Authority	ZF Mgcawu District Municipality
Province	Northern Cape Province
Nearest town(s)	Aries substation near Kenhardt to Upington substation near Upington
Use of Land Immediately Adjacent to Farm	Mostly agricultural The power line crosses multiple properties over 145km distance
Surrounding Communities	The power line crosses multiple properties over 145km distance

8. ROLES AND RESPONSIBILITIES

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines, however, project specific requirements will ultimately determine the need for the appointment of specific person(s) to undertake specific roles and or responsibilities. As such, it must be noted that in the event that no specific person, for example, an environmental control officer (ECO) is appointed, the holder of the EA remains responsible for ensuring that the duties indicated in this document for action by the ECO are undertaken.

Table 2 Description of roles and responsibilities

Responsible Person(s)	Role and Responsibilities
Developer's Project Manager (DPM)	<p><u>Role</u></p> <p>The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.

Developer Supervisor (DSS)	<p><u>Site</u></p> <p>The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day-to-day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.</p> <p><u>Role</u></p> <p>Responsibilities</p> <ul style="list-style-type: none"> - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<p><u>Role</u></p> <p>The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr.</p>

	<p>The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested & Affected Parties (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements that have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.</p> <p><u>Responsibilities</u></p> <p>The responsibilities of the ECO will include the following:</p> <ul style="list-style-type: none"> - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies, and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections/audits of the construction site according to the generic EMPr and applicable licenses to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment that are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions, etc) as well as corrective and preventive actions taken;
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	<ul style="list-style-type: none"> - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training to reviewing the training programmes of the Contractor; - In case of non-compliance, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<p><u>Role</u></p> <p>The dEOs will report to the Project Manager and are responsible for the implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s); - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports;

	<ul style="list-style-type: none"> - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	<p><u>Role</u></p> <p>The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.

contractor Environmental Officer (cEO)	<p><u>Role</u></p> <p>Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria:</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, - EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.
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8.1. DESIGN AND PLANNING PHASE

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
SITE ESTABLISHMENT DEVELOPMENT				
Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.				
Altering of landscape and visual impacts due to lack of method statements and layout plans due to poor planning	A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;	Approved method statement must be maintained in the environmental file.	Monthly	Contractor, Applicant
ACCESS RESTRICTED AREAS				
Impact management outcome: Access to restricted areas prevented.				
Conflict and damage to property	Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development;	Identification and demarcation must be done prior to commencement of	Daily	Contractor/DPM ECO to monitor compliance

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
		construction activities within Eskom's servitude.		
	Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and			
	Unauthorised access and development-related activity inside access-restricted areas are prohibited.			
WATER SUPPLY MANAGEMENT				
Impact management outcome: Undertake responsible water usage.				
Water pollution and wastage of water	All abstraction points or boreholes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis;	All boreholes and abstraction points must be registered with DWS prior to the commencement of activities on-site.	Daily	Applicant/ EAP ECO to monitor compliance
WATER RESOURCE PROTECTION				
Impact management outcome: Protection of water resources				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Potential pollution or damage to a watercourse	Pillars falling within the Hartebeest River flood zone must be realigned.	A General Authorisation must be obtained prior to commencement.	Once-off	Applicant
	An extra pillar may be required to avoid intrusion into watercourses.			
VEGETATION CLEARING				
Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.				
Destruction of flora due to activities on-site	Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing;	Protected and endangered species must be identified during pre-construction. Compliance is to be established by the surveyor and verified by ECO.	Daily	Contractor, ECO and Applicant
	Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Mark and cordon-off (5x5m) around Aloe spp. identified around the proposed site.	Walk down must be conducted with ECO or specialist. Compliance must be monitored.	Daily	Applicant, Contractor, ECO
PROTECTION OF FAUNA				
Impact management outcome: Minimise disturbance to fauna.				
Harm of killing of animals. Injury and potential disruption of natural avifaunal migratory patterns	The breeding sites of raptors and other wild bird species must be taken into consideration during the planning of the development programme;	Compliance to be established by surveyor and verified by ECO (internal and external Audit)	Daily	Contractor, ECO & Applicant
	Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present;			
	Nesting sites on existing parallel lines must documented			
	Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Bird guards and diverters must be installed on the new line as per the recommendations of the specialist;			
PROTECTION OF HERITAGE RESOURCES				
Impact management outcome: Minimise impact to heritage resources.				
Damage to important artefacts and heritage features.	Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in Section 5.3: Access restricted areas;	Prior surveying is required. Compliance to be verified by ECO (Internal and external audit)	Daily	Contractor, ECO & Applicant
	Avoid the southeastern part of the hill.			
EMERGENCY PROCEDURES				
Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.				
Injury or illness	Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;	Compliance to be established by SHEQ Specialist and verified by ECO	Daily	ECO and Contractor
FINALISING TOWER POSITIONS				
Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Damage and loss of flora and fauna as a result of poor damage.	No vegetation clearing must occur during survey and pegging operations;	Compliance to be established by surveyor and verified by ECO throughout construction phase.	Daily	ECO and Contractor
	No new access roads must be developed to facilitate access for survey and pegging purposes;			
	Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas;			
	The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.			
	Identify no-go areas around threatened and protected species (<i>Hoodia gordonii</i> , <i>B. albitrunca</i> , <i>Aloe claviflora</i>).			

8.2. CONSTRUCTION PHASE

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
ENVIRONMENTAL AWARENESS TRAINING				
Impact management outcome: All onsite staff are aware and understand the individual responsibilities in terms of this EMPr.				
Non-compliance due to lack of training and knowledge.	All staff must receive environmental awareness training prior to commencement of the activities;	An attendance register must be maintained in the environmental file for all inductions, training, and awareness campaigns conducted.	Monthly	Contractor, ECO & DPM
	The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;			
	Refresher environmental awareness training is available as and when required;			
	All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr;			
	The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum:			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	<p>a) Safety notifications; and</p> <p>b) No littering.</p>			
	<p>Environmental awareness training must include as a minimum the following:</p> <p>a) Description of significant environmental impacts, actual or potential, related to their work activities;</p> <p>b) Mitigation measures to be implemented when carrying out specific activities;</p> <p>c) Emergency preparedness and response</p> <p>d) Emergency procedures;</p> <p>e) Procedures to be followed when working near or within sensitive areas;</p> <p>f) Wastewater management procedures;</p> <p>g) Water usage and conservation;</p> <p>h) Solid waste management procedures;</p> <p>i) Sanitation procedures;</p> <p>j) Fire prevention; and</p> <p>k) Disease prevention.</p>			
	<p>A record of all environmental awareness training courses undertaken as part of the EMPr must be available;</p>			
	<p>Educate workers on the dangers of open and/or unattended fires;</p>	<p>Induction material must contain training on the</p>	<p>Monthly</p>	<p>Contractor, ECO & DPM</p>

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
		dangers of open/unattended fires		
	A staff attendance register of all staff to have received environmental awareness training must be available.			
	Course material must be available and presented in appropriate languages that all staff can understand.			
SITE ESTABLISHMENT DEVELOPMENT				
Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.				
Degradation of the environment around the site.	Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;	ECO must monitor compliance.	Monthly	Contractor, ECO to monitor compliance
	Sites must be located where possible on previously disturbed areas;			
	The camp must be fenced in accordance with fencing and gate installation mitigation measures discussed in this EMP; and			
	The use of existing accommodation for contractor staff, where possible, is encouraged.			
ACCESS ROADS				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.				
Degradation of access roads and creation of nuisance around the site.	Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area;	Agreements on access roads must be in place prior to commencement. Compliance with agreements must be monitored throughout construction by internal and external ECO.	Daily	Applicant/ Contractor or DPM Internal and external ECO to monitor compliance
	An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;			
	The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;			
	All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition			
	All contractors must be made aware of all these access routes.	All staff must be inducted and educated on access routes that may be used.	Daily	ECO

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;			
	Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads;			
	In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;			
	Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands			
	Access roads must only be developed on pre-planned and approved roads.			
	Traffic must be limited around sensitive flora species as identified by specialists.			
FENCING AND GATE INSTALLATION				
Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Theft and damage to property as a result of uncontrolled access to the site.	Use existing gates provided to gain access to all parts of the area authorised for development, where possible;	Agreements on access roads and gates must be in place prior to commencement.	Daily	Applicant/ Contractor or DPM ECO to monitor compliance
	Existing and new gates are to be recorded and documented in accordance with section discussing photographic record;	Compliance with agreements must be monitored throughout construction by internal and external ECO.		
	All gates must be fitted with locks and be kept locked at all times during the development phase unless otherwise agreed with the landowner;	Photographic records must be kept in the environmental file.		
	At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner;			
	Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Where gates are installed in jackal-proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;			
	Original tension must be maintained in the fence wires			
	All gates installed in electrified fencing must be re-electrified			
	All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities;			
	Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora;			
	Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner.			
	All fencing must be developed of high-quality material bearing the SABS mark;			
	The use of razor wire as fencing must be avoided;			
	Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	On completion of the development phase all temporary fences are to be removed;			
	The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.			
WATER SUPPLY MANAGEMENT				
Impact management outcome: Undertake responsible water usage.				
Waste and pollution of water resources.	The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.	Staff must be trained on ways to conserve water.	Daily	ECO to monitor compliance
	Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.			
STORM AND WASTEWATER MANAGEMENT				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Impact management outcome: Impacts to the environment caused by stormwater and wastewater discharges during construction are avoided.				
Contamination of water resources and pollution of the soil.	Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager;	Applicant/ Contractor ECO	Daily	ECO to monitor compliance
	All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;			
	Natural stormwater runoff is not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;			
	Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.			
SOLID AND HAZARDOUS WASTE MANAGEMENT				
Impact management outcome: Waste is appropriately stored, handled and safely disposed of at a recognised waste facility.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
<p>Nuisance due to poor waste management practises.</p> <p>Attraction of rodents and pests.</p>	All measures regarding waste management must be undertaken using an integrated waste management approach;	<p>An integrated waste management approach must be developed and maintained in the environmental file prior to the commencement of construction with ongoing maintenance and updates to the strategy.</p> <p>Compliance to be verified by ECO (Internal and External Audits).</p>	Daily	ECO, Contractor
	Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;			
	A suitably positioned and clearly demarcated waste collection site must be identified and provided;			
	The waste collection site must be maintained in a clean and orderly manner;			
	Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Staff must be trained in waste segregation;			
	Bins must be emptied regularly;			
	General waste produced onsite must be disposed of at registered waste disposal sites/ recycling companies;			
	Hazardous waste must be disposed of at a registered waste disposal site;			
	Certificates of safe disposal for general, hazardous and recycled waste must be maintained.			
PROTECTION OF WATERCOURSES AND ESTUARIES				
Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.				
Pollution and contamination of watercourses.	All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;	Contractor, ECO & Applicant	Daily	Compliance to be verified by ECO (Internal and External Audits)
Erosion and degradation of watercourses.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	In the event of a spill, prompt action must be taken to clear the polluted or affected areas;			
	Where possible, no development equipment must traverse any seasonal or permanent wetland			
	No return flow into the estuaries must be allowed and no disturbance of the Estuarine Functional Zone should occur;			
	Development of a permanent watercourse or estuary crossing must only be undertaken where no alternative access to the tower position is available;			
	There must not be any impact on the long-term morphological dynamics of watercourses or estuaries;			
	Existing crossing points must be favoured over the creation of new crossings (including temporary access)			
	When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	<p>be implemented e.g. including ensuring that construction equipment is well maintained;</p> <p>c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and</p> <p>d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.</p>			
VEGETATION CLEARING				
Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.				
<p>Soil erosion as a result of excessive clearing of land.</p> <p>Harm to destruction to Threatened and Protected Species.</p>	<p>Indigenous vegetation which does not interfere with the development must be left undisturbed;</p>	<p>Protected and endangered species must be identified during pre-construction.</p> <p>Compliance is to be established by the surveyor and verified by ECO.</p>	Daily	Contractor, ECO and Applicant

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;			
	The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals;			
	Trees felled due to construction must be documented and form part of the Environmental Audit Report;			
	Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;			
	Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained;			
	A daily register must be kept of all relevant details of herbicide usage;			
	No herbicides must be used in estuaries;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance with the section addressing access restricted areas.			
Servitude:				
	Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager;			
	Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the land owner and the EA holder			
	Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility;			
	Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation;			
	In the case of the development of new overhead transmission and distribution infrastructures, a one-metre “trace-line” must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the” trace-line”. Alternative methods of stringing which limit impact to the environment must always be considered.			
PROTECTION OF FAUNA				
Impact management outcome: Minimise disturbance to fauna.				
Harm and killing of fauna.	No interference with livestock must occur without the landowner’s written consent and with the landowner or a person representing the landowner being present;	Compliance to be established by surveyor and verified by ECO (internal and external Audit)	Daily	Contractor, ECO & Applicant
	No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas;			
	No deliberate or intentional killing of fauna is allowed;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and			
	No Threatened or Protected species (ToPs) and/or protected fauna as listed according NEMBA (Act No. 10 of 2004) and relevant provincial ordinances may be removed and/or relocated without appropriate authorisations/permits.			
PROTECTION OF HERITAGE RESOURCES				
Impact management outcome: Minimise impact to heritage resources.				
	Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;	Compliance to be verified by ECO (Internal and external audit)	Daily	Contractor, ECO
	All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.			
	As far as possible, avoid the area demarcated around the Tower position. Monitoring foundation excavations.			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Construction activities may disturb or destroy sites, features or artefacts of archaeological and/or historical importance.	The preferable course of action at is avoidance of the features to prevent impacts on the recorded sites. If this is not possible extensive Phase 2 mitigation will be required which will require mapping and test excavations before a destruction permit can be applied for.	Continuous monitoring throughout the pre-construction and construction phases must be conducted. Northern Cape Heritage Resources Authority (NCHRA) should be notified should any artefacts be identified.	Continuously	Contractor, ECO
	The koppie (74 m from pillar 43) should be indicated on development plans and avoided during construction.	All identified sensitive features must be clearly demarcated and barricaded as a no-go zone before the commencement of construction works. No-go zones must be communicated with all workers during inductions.	Monthly	ECO and Contractor

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	The area at Pillar 176 – 177 is sensitive (Waypoint 6) and should be avoided for stringing and construction.	Continuous monitoring throughout the pre-construction and construction phases must be conducted.		CEO, ESA, ECO
	Pylon excavations must be monitored and could require further mitigation at waypoint 383 (Pillar 177 to 179);			CEO, ESA, ECO
	Pillars 219, 260 – 261, and 299 should be micro-sited to avoid the Stone Age features at waypoints 3431, 3461, and 3481.			CEO, ESA, ECO
	The small shelter at waypoint 10 (Pillar 193 – 194) should be demarcated and avoided during construction.			CEO, ESA, ECO
	The remains of structures should be avoided by the development by moving the relevant pillars (Pillar 190 and 191 at waypoint 91), if this is not possible mitigation will be required consisting of mapping and recording prior to applying for a destruction permit.			CEO, ESA, ECO

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Graves and burial sites (as well as potential graves until proven otherwise) should be avoided with a 30m buffer zone and as such Waypoints 7, 11, 3491, 3501, and 3511 should be indicated on development plans and the associated pillars (184 – 187, 194 – 195 and 299) should be micro sited to avoid these features. Access for the family members should be ensured.			CEO, PP, ECO
	Recorded heritage features should be indicated on development plans and construction crews should be made aware of expected resources and applicable mitigation measures.			CEO, PM, PP, ECO
	The study area should be monitored by the ECO during construction to implement the Chance Find Procedure for the project (Section 7.2).			CEO, ECO
SAFETY OF THE PUBLIC				
Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.				
Injury and complaints due to lack of planning and procedure.	Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;			
	All unattended open excavations must be adequately fenced or demarcated;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;			
	Ensure structures vulnerable to high winds are secured;			
	Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.			
SANITATION				
Impact management outcome: Clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.				
Illness due to poor hygiene practices.	Mobile chemical toilets are installed onsite if no other ablution facilities are available;	Compliance to be established by SHEQ Specialist and verified by ECO (Internal and external audits)	Daily	Contractor, ECO & Applicant
	The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;	Waste disposal slips for general and chemical waste must be maintained in the environmental file.		
	Where mobile chemical toilets are required, the following must be ensured:			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	<p>a) Toilets are located no closer than 100 m to any watercourse or water body;</p> <p>b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause;</p> <p>c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMP;;</p> <p>d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out;</p> <p>e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;</p> <p>f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;</p> <p>A copy of the waste disposal certificates must be maintained.</p>			
PREVENTION OF DISEASE				
Impact Management outcome: All necessary precautions linked to the spread of disease are taken.				
	Undertake environmentally-friendly pest control in the camp area;	Compliance to be established by the SHEQ Specialist and ECO	Daily	Contractor, ECO & Applicant

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/AIDS;			
	The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area;			
	Information and education relating to sexually transmitted diseases are to be made available to both construction workers and the local community, where applicable;			
	Free condoms must be made available to all staff on-site at central points;			
	Medical support must be made available.			
	Provide access to Voluntary HIV Testing and Counselling Services.			
EMERGENCY PROCEDURES				
Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.				
Exacerbation of injury or illness as a result of a lack of poor planning	The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	Emergency preparedness plan must be available in the environmental file.	Daily	ECO, Contractor

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
and preparation for emergency scenario.		All staff must be trained on emergency procedures.		
	All staff must be made aware of emergency procedures as part of environmental awareness training;			
	The relevant local authority must be made aware of a fire as soon as it starts;			
	In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section).			
HAZARDOUS SUBSTANCES				
Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.				
Contamination and spillages resulting in pollution.	The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible;	Compliance to be verified by ECO	Daily	ECO and Contractor
	All hazardous substances must be stored in suitable containers as defined in the Method Statement;			
	Containers must be clearly marked to indicate contents, quantities and safety requirements;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;			
	Bunded areas to be suitably lined with a SABS approved liner;			
	An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;			
	All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);			
	All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;			
	Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;			
	The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowzers;			
	The tanks/ bowzers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall);			
	The floor of the bund must be sloped, draining to an oil separator;			
	Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;			
	All empty externally dirty drums must be stored on a drip tray or within a bunded area;			
	No unauthorised access into the hazardous substances' storage areas must be permitted;			
	No smoking must be allowed within the vicinity of the hazardous storage areas			
	Adequate fire-fighting equipment must be made available at all hazardous storage areas;			
	Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;			
	The responsible operator must have the required training to make use of the spill kit in emergency situations;			
	An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken;			
	In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to section for procedures concerning storm and waste water management and section for solid and hazardous waste management.			
WORKSHOP, EQUIPMENT MAINTENANCE AND STORAGE				
Impact management outcome: Soil, surface water and groundwater contamination are minimised.				
Soil and groundwater pollution as a result of poor storage and management of equipment.	Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area;	Compliance to be verified by ECO	Daily	ECO and Contractor

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;			
	Leaking equipment must be repaired immediately or be removed from site to facilitate repair;			
	Workshop areas must be monitored for oil and fuel spills;			
	Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;			
	The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil/water separator where maintenance work on vehicles and equipment can be performed;			
	Water drainage from the workshop must be contained and managed in accordance section addressing storm and wastewater management.			
BATCHING PLANTS				
Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Concrete mixing must be carried out on an impermeable surface;	Compliance to be established by the surveyor and verified by ECO throughout construction phase.	Daily	ECO and Contractor
	Batching plants areas must be fitted with a containment facility for the collection of cement-laden water.			
	Dirty water from the batching plant must be contained to prevent soil and groundwater contamination.			
	Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;			
	A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;			
	Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriately licenced disposal facility;			
	Empty cement bags must be secured with adequate binding material if these will be temporarily stored on-site;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions)			
	Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility;			
	Temporary fencing must be erected around batching plants in accordance with section addressing fencing and gate installation.			
DUST EMISSIONS				
Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.				
Reduced visibility as a result of generation of high dust levels	Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;	Compliance to be verified by ECO throughout construction phase.	Daily	ECO and Contractor
	Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible;			
	Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;			
	During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;			
	Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;			
	Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;			
	Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;			
	Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;			
	For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.			
BLASTING				
Impact management outcome: Impact to the environment is minimised through a safe blasting practice.				
Injury to landowners or staff members	Any blasting activity must be conducted by a suitably licensed blasting contractor; and	Compliance to be established by surveyor and verified by ECO.	Daily	Contractor, ECO & Applicant

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.			
NOISE				
Impact Management outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.				
Complaints from the neighbouring community Nuisance as a result of high noise levels.	The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only;	Compliance to be established by surveyor and verified by ECO	Daily	ECO and Contractor
	All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;			
	Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers;			
	Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.			
FIRE PREVENTION				
Impact management outcome: Prevention of uncontrollable fires.				
Fire outbreak and spreading due to a lack of planning and preparation to manage fire risk on-site.	Designate smoking areas where the fire hazard could be regarded as insignificant;	Compliance to be verified by ECO throughout the construction phase.	Daily	ECO and Contractor
	Firefighting equipment must be available on all vehicles located on site;			
	The local Fire Protection Agency (FPA) must be informed of construction activities;			
	Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;			
	Two-way swop of contact details between ECO and FPA.			
STOCKPILING AND STOCKPILE AREAS				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Impact management outcome: Erosion and sedimentation as a result of stockpiling are reduced.				
Erosion and degradation of soils. Spread of alien invasive vegetation on stockpiles.	All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies;	Compliance to be established by the surveyor and verified by ECO throughout the construction phase.	Daily	ECO and Contractor
	All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;			
	Topsoil stockpiles must not exceed 2 m in height;			
	During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);			
	Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.			
EXCAVATION AND INSTALLATION OF FOUNDATIONS				
Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Pollution of soils and groundwater resources	All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal site, if not used for backfilling purposes;	Compliance to be established by surveyor and verified by ECO throughout the construction phase.	Daily	ECO and Contractor
	Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;			
	Management of equipment for excavation purposes must be undertaken in accordance with section addressing Workshop equipment maintenance and storage; and			
	Hazardous substances spills from equipment must be managed in accordance with section addressing Hazardous substances.			
	Batching of cement to be undertaken in accordance with section on Batching plants;			
	Residual cement must be disposed of in accordance with section on Solid and hazardous waste management.			
ASSEMBLY AND ERECTING TOWERS				
Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.				

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
Damage to sensitive environmental features around the towers	Prior to erection, assembled towers and tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation;	Compliance to be established by surveyor and verified by ECO throughout the construction phase.	Daily	ECO, Applicant and Contractor
	In sensitive areas, tower assembly must take place off-site or away from sensitive positions;			
	The crane used for tower assembly must be operated in a manner which minimises impact to the environment;			
	The number of crane trips to each site must be minimised			
	Wheeled cranes must be utilised in preference to tracked cranes			
	Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact;			
	Access to tower positions to be undertaken in accordance with access requirements in specified section on Access Roads;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing;			
	No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor;			
	Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites;			
	Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil;			
	Excavated slopes must be no greater than 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes;			
	Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed;			
	Only existing disturbed areas are utilised as spoil areas;			
	Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Surface water runoff is appropriately channeled through or around spoil areas;			
	During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that;			
	The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in section addressing landscaping and rehabilitation;			
	The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect the re-vegetation of such areas to prevent erosion as soon as construction activities on the site are complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.			
STRINGING				
Impact management outcome: No environmental degradation occurs as a result of stringing.				
Harm and damage to sensitive environmental features during stringing.	Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid access restricted areas and other sensitive areas;	Compliance to be established by surveyor and verified by ECO throughout construction phase.	Daily	Contractor, ECO & Applicant

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Due care must be maintained during strining.			
	The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks;			
	Refueling of the winch and tensioner stations must be undertaken in accordance with Hazardous substances' section;			
	In the case of the development of overhead transmission and distribution infrastructure, a one-metre "trace line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along" trace lines". Vegetation clearing must be undertaken by hand, using chainsaws and hand-held implements, with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used;			
	Alternative methods of stringing that limit impact to the environment must always be considered e.g. by hand or by using a helicopter;			
	Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines, fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing;			
	Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner;			
	Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.			
SOCIO-ECONOMIC				
Impact management outcome: Socio-economic development is enhanced.				
Conflict with local community.	Develop and implement communication strategies to facilitate public participation;	Compliance to be verified by ECO throughout the construction phase.	Daily	Contractor, ECO & Applicant
	Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;			
	Sustain continuous communication and liaison with neighbouring owners and residents			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Create work and training opportunities for local stakeholders; and			
	Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This would reduce the risk to local farmers.			
TEMPORARY CLOSURE OF SITE				
Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.				
Pollution, fire breakout and theft of property.	Bunds must be emptied (where applicable)	Compliance to be verified by ECO throughout construction phase.	Daily	Contractor, ECO & Applicant
	Hazardous storage areas must be well ventilated;			
	Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;			
	Emergency and contact details displayed must be displayed;			
	Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;			

POTENTIAL RISK	MANAGEMENT /MITIGATION ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;			
	Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;			
	Structures vulnerable to high winds must be secured			
	Wind and dust mitigation must be implemented;			
	Cement and materials stores must have been secured;			
	Toilets must have been emptied and secured;			
	Refuse bins must have been emptied and secured;			
	Drip trays must have been emptied and secured.			

8.3. REHABILITATION PHASE

IMPACT	MANAGEMENT /MITIGATION/ ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
REHABILITATION				
LANDSCAPING AND REHABILITATION				
Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.				
Negative visual impacts, pollution of soil and groundwater, conflict with landowners/stakeholders	All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided;	Compliance to be established by surveyor and verified by ECO throughout construction phase.	Daily	Contractor, ECO & Applicant
	All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983			
	All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983;			
	Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition;			
	Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners;			

IMPACT	MANAGEMENT /MITIGATION/ ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Rehabilitation of tower sites and access roads outside of farmland;			
	Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;			
	Stockpiled topsoil must be used for rehabilitation (refer to Section relating to Stockpiling and stockpiled areas);			
	Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;			
	Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;			
	Subsoil must be ripped before topsoil is placed			
	The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;			
	Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;			

IMPACT	MANAGEMENT /MITIGATION/ ACTIONS	MONITORING		
		CRITERIA	FREQUENCY	RESPONSIBILITY
	Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly;			
	Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil.			
	Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area.			

9. PILLAR SPECIFIC MITIGATION MEASURES

Pillar-to pillar walkthroughs were done along the transmission line by the following specialists:

- Aquatic
- Avi-fauna
- Floral
- Archaeological

Site-specific mitigations have been recommended for pillars where medium to high sensitivities were identified. Pillar-specific mitigations are attached as **Annexure 1**.

10. CONCLUSIONS

All potential impacts to the environment have been considered in the development of this EMPr. The EMPr incorporates the relevant requirements of best environmental practises and specific environmental management measures relating to the design, construction and operational phases of the proposed development.

This EMPr is a binding document and compliance with the EMPr forms part of the contract documents of all contractors and sub-contractors working on the project. DFFE, as the competent authority, may request that this EMPr be reviewed at a later stage should some significant changes or factors require consideration arise. If this be the case, Eskom will be responsible for further updating the EMPr as required.

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Tokollo Kobe

Environmental Assessment Practitioner

EAPASA Reg. No: 2021/3499