

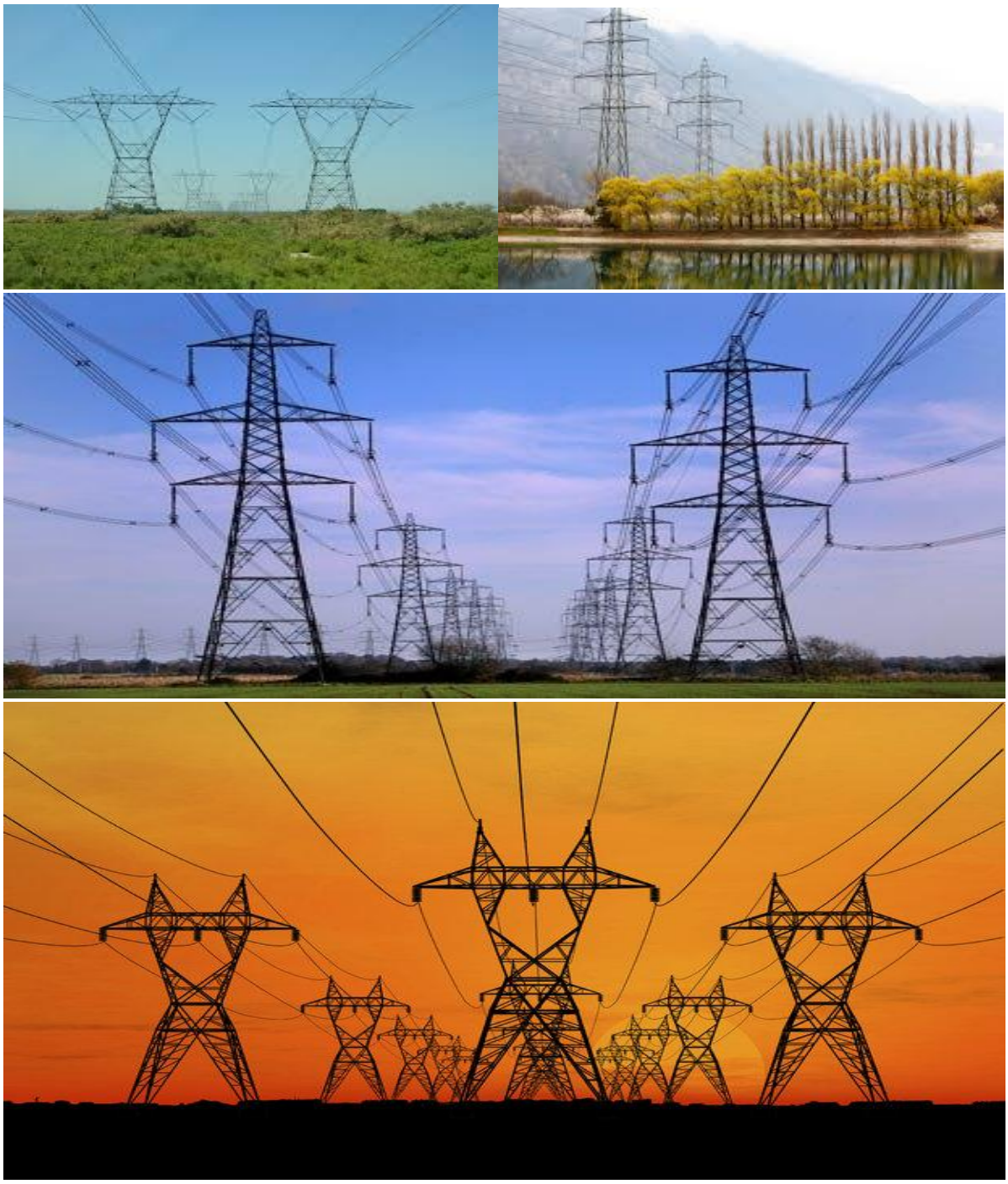
GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE PROPOSED DEVIATIONS OF ± 14 KM OF THE PLUTO-MAHIKENG 400KV POWERLINE WITHIN THE JB MARKS LOCAL MUNICIPALITY UNDER DR KENNETH KAUNDA DISTRICT MUNICIPALITY AND MAHIKENG LOCAL MUNICIPALITY WITHIN THE NGAKA MODIRI MOLEMA DISTRICT MUNICIPALITY, NORTH WEST PROVINCE

DFFE REFERENCE:NOT YET ASSIGNED

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APPENDIX 1

GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION FOR OVERHEAD ELECTRICITY TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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INTRODUCTION

1. Background

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).

2. Purpose

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.

3. Objective

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 EMPrs for applications of a similar nature.

4. Scope

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.

5. Structure of this document

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

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. 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 commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. 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 gazetted for implementation, it has been approved by the CA. 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 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	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

Part	Section	Heading	Content
			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. 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.
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) 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. This section applies only **to additional** impact management outcomes and impact

Part	Section	Heading	Content
			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.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to 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 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.

7. 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.

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicant's name and contact details, the site information, which includes coordinates of the corridor in which the proposed overhead electricity transmission and distribution infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and, where available, the farm name.

Sub-section 2 is to be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout using the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps must identify features both within the planned working area and any known sensitive features in the surrounding landscape within 50m from the development footprint. The overhead transmission and distribution profile must be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions must be used.

Sub-section 3 is the declaration that the applicant/proponent or holder of the EA in the case of a change of ownership must complete, which confirms that the applicant/EA holder will comply with the pre-approved generic EMPr template in Section 1 and understands that the impact management outcomes and actions are legally binding.

(a) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted as part of such an application for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART A – GENERAL INFORMATION

1. 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:

(i) Construction procedures;
(ii) Plant, materials and equipment to be used;
(iii) Transporting the equipment to and from site;
(iv) How the plant/ material/ equipment will be moved while on site;
(v) How and where the plant/ material/ equipment will be stored;
(vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
(vii) Timing and location of activities;
(viii) Compliance/ non-compliance; and
(ix) 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

2. ACRONYMS and ABBREVIATIONS

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

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

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 1: *Guide to roles and responsibilities for implementation of an EMPr*

Responsible Person (s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	Role 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. Responsibilities - 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 Site Supervisor (DSS)	Role

Responsible Person (s)	Role and Responsibilities
	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. <u>Responsibilities</u> - 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)	<u>Role</u> 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. 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 which 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.

Responsible Person (s)	Role and Responsibilities
	Responsibilities The responsibilities of the ECO will include the following: - 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 in order 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 which 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; - 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-compliances, 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.

Responsible Person (s)	Role and Responsibilities
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for 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. <u>Responsibilities</u> - 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; - 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	<u>Role</u> 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

Responsible Person (s)	Role and Responsibilities
	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. Responsibilities - 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)	Role 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: Responsibilities - 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;

Responsible Person (s)	Role and Responsibilities
	- 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.

4. 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.

4.1 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.

4.2 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.

4.3 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.

4.4 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.

4.5 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.

4.6 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.

4.7 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.

4.8 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 signed off by the ECOs.

4.9 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 used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. 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:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. Photographic recordings of incidents;
13. All areas before, during and post rehabilitation; and
14. Include relevant photographs in the Final Environmental Audit Report.

4.10 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:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. 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 in (**section 4.11**) below.

4.11 Claims for damages

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

1. Record the full detail of the complaint as described in (**section 4.10**) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. 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
4. 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.

4.12 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:

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

4.13 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.

4.14 Final environmental audits

On final 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.

PART B: SECTION 1: Pre-approved generic EMPr template

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

This section provides a pre-approved generic EMPr template with aspects that are common to the development of overhead electricity transmission and distribution infrastructure. There is a list of aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure, and for each aspect a set of prescribed impact management outcomes and associated impact management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement, in order to mitigate the impact of such aspects identified for the development or expansion of overhead electricity transmission and distribution infrastructure.

The template provided below is to be completed by providing the information under each heading for each environmental impact management action.

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to 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 also be duly signed and dated on each page by the contactor and 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.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities; – 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: a)Safety notifications; and b) No littering. – Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities;	**Contractor, ECO**	**Onsite training and Posters**	**Commencement of the project and as and when required**	**ECO**	**Once off**	**Certificates, Attendance registers, course material and photographs**

c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j)Fire prevention; and k) Disease prevention. – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or 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.						

5.2 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.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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; – Sites must be located where possible on previously disturbed areas; – The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and – The use of existing accommodation for contractor staff, where possible, is encouraged.	**Contractor**	**Method statement provided, Fencing and strict access control and warning signs**	**Throughout the project**	**ECO**	**Throughout the project**	**Method statement and site inspection**

5.3 Access restricted areas

Impact management outcome: Access to restricted areas prevented.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; – 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 is prohibited.	**Contractor**	**Method statement provided, Fencing and strict access control and warning signs**	**Throughout the project**	**ECO**	**Throughout the project**	**Method statement and site inspection**

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area; – 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. – 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.	**Contractor**	**Use existing roads and negotiated access roads, Photograph and signed agreement records**	**Throughout the project**	**ECO**	**Once off**	**Photograph and signed agreement records**

5.5 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.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with **section *4.9: photographic record***; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; – 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; – 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	**Contractor**	**Maintain fencing and notices at the fence and gates and also site inspection**	**Throughout the project**	**ECO**	**Throughout the project**	**Photograph and signed agreement records, site inspection**

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; – 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.						

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; – 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 that 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. – 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.	**Contractor**	**Environmental awareness training, prevent unauthorized wate abstraction**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection and audit reports**

5.7 Storm and waste water management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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 storm water runoff 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.	**Contractor**	**Implementation of stormwater management**	**Throughout the project**	**ECO**	**Once off**	**Site inspection**

5.8 Solid and hazardous waste management

Impact management outcome: Waste is appropriately stored, handled and safely disposed of at a recognised waste facility.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All measures regarding waste management must be undertaken using an integrated waste management approach; – 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; – 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 company; – 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.	**Contractor**	**Covered waste storage areas and Emptying bins regularly**	**Throughout the project**	**ECO**	**Throughout the project**	**Audit report**

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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 permanent watercourse or estuary crossing must only be undertaken where no alternative access to 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 favored 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;	**contractor**	**Site inspection and implementing management action**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection and monitoring report**

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 be implemented e.g. including ensuring that construction equipment is well maintained; 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 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.						

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: – Indigenous vegetation which does not interfere with the development must be left undisturbed;	**Contractor**	**As per EA and Ecological report**	**Throughout the project**	**ECO**	**Throughout the project**	**Audit report**

– Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; – 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; – 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; – 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; – All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to ***Section 5.3: 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; – 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.						

5.11 Protection of fauna

Impact management outcome: Minimise disturbance to fauna.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; – 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; – Bird guards and diverters must be installed on the new line as per the recommendations of the specialist; – 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; – 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	**Contractor**	**As per EA and avifauna report**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection and audit report**

– 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.						

5.12 Protection of heritage resources

Impact management outcome: Minimise impact to heritage resources.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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***; – Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; – 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.	**Contractor**	**As per EA and Site inspection**	**Prior construction and throughout the project**	**ECO**	**Prior construction and throughout the project**	**Site inspection, audit report and photographs**

5.13 Safety of the public

Impact management outcome: All precautions are taken to minimise the risk of injury, harm or complaints.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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.	**Contractor**	**Fencing, signage, implementation of approved designs. Maintain complaints records**	**Throughout the project**	**ECO**	**Throughout the project**	**Contractors record and site inspection**

5.14 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.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – 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; – Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; 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; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;	**Contractor**	**Use of licensed sanitation suppliers**	**Throughout the project**	**ECO**	**Weekly**	**Site inspection and documentation**

f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.						

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – 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 to be made available to both construction workers and 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.	**Contractor**	**Use of pest control were required and HIV/Aids awareness training**	**Prior construction**	**ECO**	**Once off**	**Certificates and attendance register**

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; – 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 5.17***).	**Contractor**	**Approved ERAP and onsite training**	**Prior construction**	**ECO**	**Once off**	**Poof of approved ERAP and course material for training**

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; – 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; – 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;	**Contractor** **Contractor**	**Safe disposal certificates available,** **•Hazardous substances discussed in awareness training,** **•Bunded hazardous waste areas,** **•Clearly marked storage containers,** **• Spill kits made available** **• Diesel and fuel storage areas in line with fuel storage requirements**	**Throughout** **Throughout**	**ECO** **ECO**	**Throughout** **Throughout**	**Audit report** **Audit report**

– The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers 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 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 refueling 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 refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; – 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;		**•Refuelling of vehicles in designated bunded areas**				

– 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 5.7*** for procedures concerning ***storm and waste water management*** and ***5.8*** for ***solid and hazardous waste management.***						

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; – During servicing of vehicles or equipment, especially where emergency repairs are effected 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;	**Contractor**	**Demarcate a service area and implement emergency procedures for spills.**	**Throughout construction**	**ECO**	**Throughout the project**	**Site inspection and monitoring report**

– 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 5.7: storm and waste water management***.						

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater**.**

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface; – 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;	**Contractor**	**Appropriate cement mixing and storage facilities, Monitor water use. Use of bunded concrete washing area, Obtain waste disposal. certificates**	**During construction**	**ECO**	**Throughout the project**	**Site inspection and contractor documentation**

– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – 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 5.5: Fencing and gate installation***.						

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – 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 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;	**contractor**	**Enforce vehicle speed limits Implement dust controls from stockpiles where needed**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection**

– 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.						

5.21 Blasting

Impact management outcome: Impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Any blasting activity must be conducted by a suitably licensed blasting contractor; and – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	**contractor**	**Blasting license and notification of landowners**	**Once off**	**ECO**	**Once off**	**Documentation and proof of notification**

5.22 Noise

Impact Management outcome: Unnecessary noise is prevented by ensuring that noise from construction activities is mitigated.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; – 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 development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	**Contractor**	**EA compliance**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection**

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Designate smoking areas where the fire hazard could be regarded as insignificant; – 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.	**Contractor**	**Ongoing site maintenance Emergency signage available**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection**

5.24 Stockpiling and stockpile areas

Impact management outcome: Erosion and sedimentation as a result of stockpiling are reduced.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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.	**Contractor**	**Adhere to EA**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection**

5.25 Finalising tower positions

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No vegetation clearing must occur during survey and pegging operations; – 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.	**Contractor**	**Implement management action**	**Once off**	**ECO**	**Once off**	**Site inspection**

5.26 Excavation and Installation of foundations

Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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 5.18: Workshop equipment maintenance and storage***; and – Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***. – Batching of cement to be undertaken in accordance with **Section *5.19 : Batching plants***; – Residual cement must be disposed of in accordance with **Section *5.8: Solid and hazardous waste management***.	**Contractor**	**Implement management action**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection**

5.27 Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Prior to erection, assembled towers and tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation; – 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 in Section 8.4: Access Roads; – 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;	**Contractor**	**Implement management action**	**Throughout the project**	**ECO**	**Throughout the project**	**Site inspection**

– 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 that 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. – 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 5.29: Landscaping and rehabilitation. – The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.						

5.28 Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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 Section 5.17: Hazardous substances; – 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 which limit impact to the environment must always be considered e.g. by hand or by using a helicopter;	**Contractor**	**As indicated in the applicable management action**	**Throughout construction**	**ECO**	**Throughout construction**	**Site inspection**

– 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; – 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.						

5.29 Socio-economic

Impact management outcome: Socio-economic development is enhanced.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation; – 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 neighboring owners and residents – 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.	**Contractor**	**communication with the community liaison officer and project steering committee**	**Monthly**	**ECO**	**Monthly**	**Record of meetings**

5.30 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in ***sections 5.17: management of hazardous substances*** and ***5.18 workshop, equipment maintenance and storage***; – 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; – 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;	**Contractor**	**Fire, security, and emergency preparedness plan should be adhered to**	**Before temporary closure**	**ECO**	**Once off**	**Reviewing the contractor's documentation for temporary site closure and site inspection**

– Drip trays must have been emptied and secured.						

5.31 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– 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; – 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; – Rehabilitation of tower sites and access roads outside of farmland;	**Contractor**	**As per Environmental Authorization requirements**	**End of construction**	**ECO**	**End of construction**	**Site inspection and report**

– 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 ***5.24: 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 ; – 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						

6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with the requirements of regulation 26(h) of the EIA Regulations.

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

7.1 Sub-section 1: contact details and description of the project

7.1.1 Details of the applicant: **National Transmission Company South Africa SOC Ltd (NTCSA)**

Name of applicant: **David Tunnicliff**

Tel No: **(011) 800 5145**

Fax No: **N/A**

Postal Address: **P.O. Box 1091, Johannesburg, 2001**

Physical Address: **Megawatt Park, Maxwell Drive, Sunninghill, Sandton**

7.1.2 Details and expertise of the EAP: **Vhubvo Consultancy**

Name of applicant: **Brenda Makanza**

Tel No: **011 312 2878**

Fax No: **N/A**

E-mail address: **brenda@vhubvo.co.za**

Expertise of the EAP is given below, and the Curriculum Vitae included is attached in **Appendix 2.**

Principal EAP	
EAP's name and surname:	Brenda Makanza
Postal address:	P.O. Box 7068, Midrand, 1685
Tel:	011 312 2878
Fax:	011 312 7824
E-mail:	brenda@vhubvo.co.za
Qualifications and relevant experience	• B.Sc. Honours Environmental Science. • Professional Diploma Geographic Information Systems • Twenty-one (21) in the environmental consulting field. Refer to Appendix 2 for CV and Qualifications
Professional affiliations	• South African Council for Natural Scientific Professions (SACNASP). Registration Number 400016/17. • Environmental Assessment Practitioners of South Africa (EAPASA). Registration Number 2019/1542.

7.1.3 **Project name:** Proposed Deviations of ± 14 km of the Pluto-Mahikeng 400 kV Powerline within the JB Marks Local Municipality under Dr Kenneth Kaunda District Municipality and Mahikeng Local Municipality within the Ngaka Modiri Molema District Municipality, North West Province

7.1.4 **Description of the project:**

NTCSA is tasked with delivering reliable and affordable electricity to consumers across South Africa. To meet its mandate and address the growing needs of end-users, NTCSA must continuously plan, establish and expand its transmission infrastructure to support generation processes. It is therefore vital that transmission capacity keeps pace with both electricity generation capacity and electricity demand.

This growing demand places increasing pressure on Eskom and NTCSA's existing generation and transmission capacity. NTCSA has accordingly identified the need to develop further infrastructure to improve the reliability of electricity supply to the country, and in particular to provide for (a) the growth in electricity demand in the North West Province and (b) the injection of electricity from the proposed pumped storage schemes in Botswana. In doing so, NTCSA commits to a sustainable energy strategy that adheres to the policies and strategies of the national government of the Republic of South Africa. To this end, NTCSA identified the need to develop a new 400 kV transmission power line running from the Pluto Substation near Carletonville in the Gauteng Province, traversing the North West Province, and connecting into the proposed Mahikeng Main Transmission Substation (MTS) near Miga in the North West Province. This development will ensure a steady electricity supply to the North West area. The 400 kV power line and Mahikeng MTS were authorised in 2019; however, during line design, two sections were routed outside the approved corridor. The scope of work therefore entails the following:

i. Construction of two power line deviation sections, together totalling approximately 14.045 km, on the authorised Pluto–Mahikeng 400 kV power line within the North West Province. Both deviations fall outside the approved 2 km corridor and will be constructed concurrently with the broader authorised Pluto–Mahikeng project.
ii. (ii) Construction of a 3.5 m-wide access road approximately 14 km in length. The access road will be constructed within the deviation servitude.

7.1.5 **Project location:**

The proposed deviations spans across several farms of the two local municipalities, JB Marks and Mahikeng under the jurisdiction of two District Municipalities; Dr Kenneth Kaunda and Ngaka Modiri Molema of North West Province. The first deviation which is approximately 14km is 24 km North West of Pluto MTS while the second deviation, 0.45m is approximately from 15 km south east of Mahikeng.

The proposed powerline deviations traverses various land-uses such as residential built-up (farmsteads), agricultural and borders conservation areas. Villages such as Mahikeng, Klerkskraal, Merindol, Rentse and Roodepoort are in close proximity to the proposed deviation. Reference is made to Table 2 and Figure 1.

Table 2: Location

Province	North West
DEVIATION 1	
Length	± 14 km
District	Dr Kenneth Kaunda
Local Municipality	JB Marks
Ward No(s)	31
Affected Farms	Buchansvale 61 IQ/2, Goedgedacht 27 IQ /1, Klipgat 18 IQ /4, Klipgat 18 IQ /8, Klipgat 18 IQ /9, Nooitgedacht 69 IQ /0, Nooitgedacht 69 IQ /3, Illmasdale 70 IQ /2
No. of Towers	31
Strategic Transmission Corridor	Central and Northern
DEVIATION NO.2	
Length	±45 m
District	Ngaka Modiri Molema
Local Municipality	Mahikeng
Ward No(s)	9
Affected Farm(s)	Bauwel 128 JO/4
Towers	Between span for Tower 110 to 111
Strategic Transmission Corridor	Northern

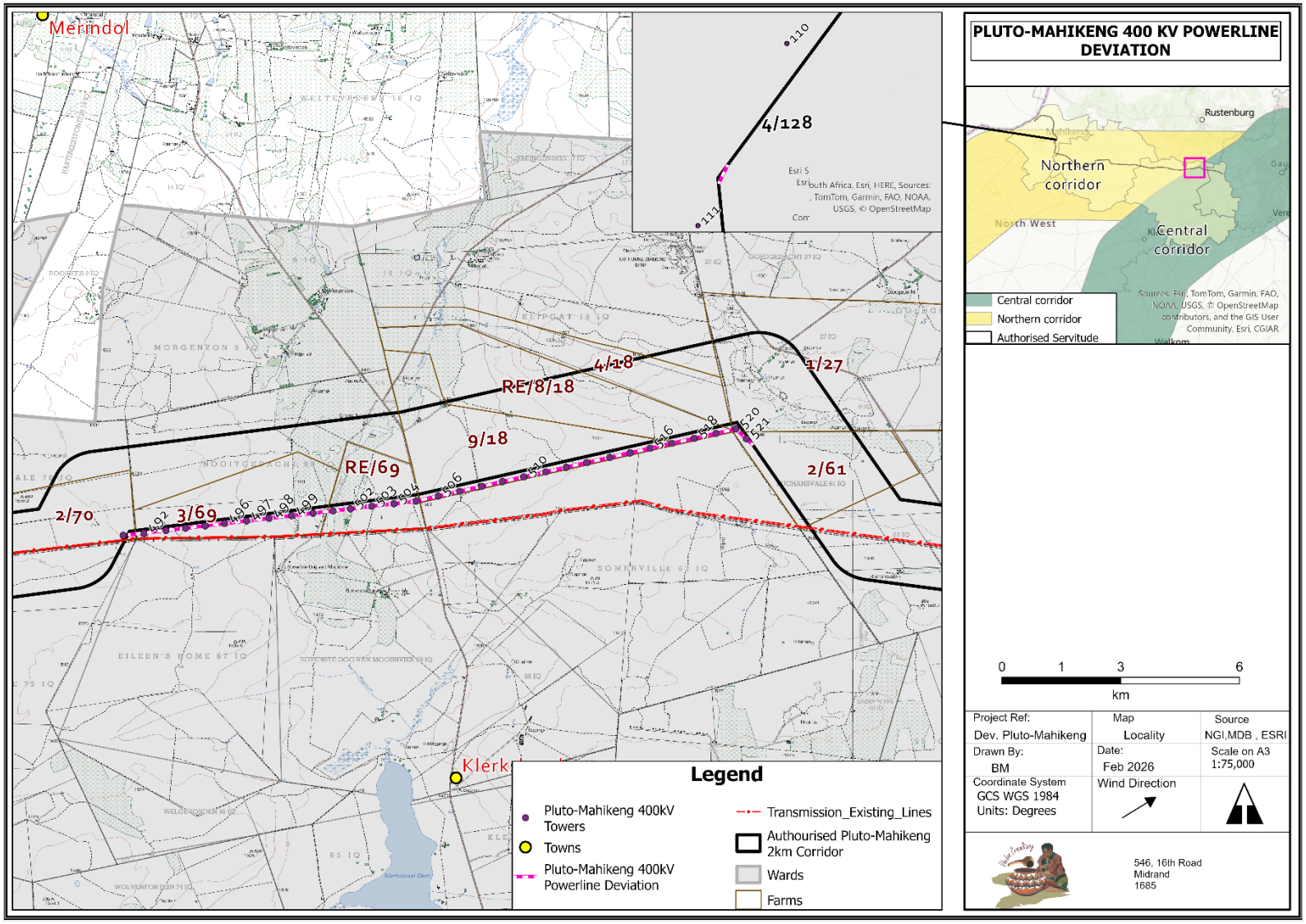


Figure 1: Locality Map

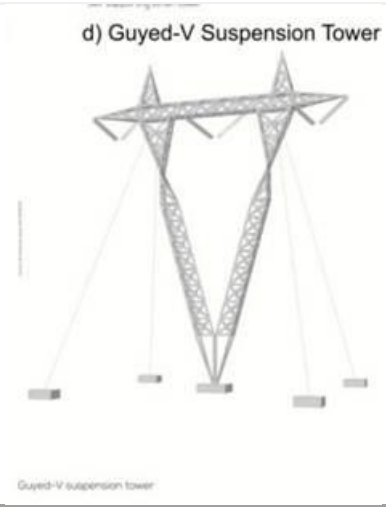
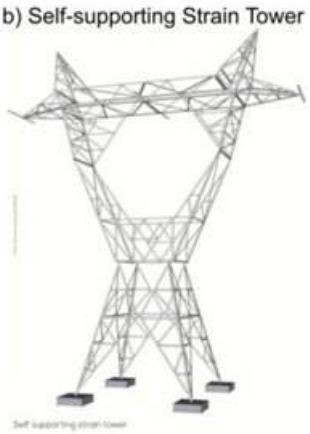
Table 3: Location

No	Farm Name	Farm/ Erf No	Property Type	Portion	Latitude	Longitude
1	Nooitgedacht	69	Farm	0	26°9'8.93S	27°7'10.9E
2	Goedgedacht	27	Farm	0	26°7'13.49S	27°15'17.04E
3	Illmasdal	70	Farm	0	26°9'20.92S	27°3'22.05E
4	Klipgat	18	Farm	0	26°7'21.79S	27°11'0.24E
5	Buchansvale	61	Farm	0	26°9'43.44S	27°16'5.73E
6	Klipgat	18	Farm Portion	8	26°8'7.37S	27°11'3.4E
7	Klipgat	18	Farm Portion	14	26°8'45.35S	27°9'50.21E
8	Klipgat	18	Farm Portion	4	26°7'43.25S	27°11'26.54E
9	Goedgedacht	27	Farm Portion	1	26°7'57.52S	27°15'28.36E
10	Buchansvale	61	Farm Portion	2	26°9'6.31S	27°14'37.49E
11	Nooitgedacht	69	Farm Portion	3	26°9'37.83S	27°7'10.31E
12	Nooitgedacht	69	Farm Portion	0	26°9'30.61S	27°8'48.03E

7.16 Preliminary technical specification of the overhead transmission and distribution: The details regarding the number of towers and structures are given below:

- **Length:** 14.045km
- **Tower parameters**
  - **Number of towers:** 31
  - **Types of towers:** (see Table 2 for the towers to be used)
    - Guyed "VEE" Suspension Tower (520B), Angle Strain and Closing Span Tower (517E)
  - **Tower spacing (mean and maximum):**
    - Tower 520B - Mean: 452m, maximum: 520m
    - Tower 517E- Mean: 333 m, maximum: 486 m
  - **Tower height (lowest, mean and height):**
    - Tower 520B - Lowest: 22.5m, Mean: 27.75m and Maximum: 33m
    - Tower 517E- Lowest: 18.5m, Mean: 25.75m and Maximum: 33m
  - **Conductor attachment height (mean):**
    - 400kV: 21m
  - **Minimum ground clearance:**
    - 400kV: 8.1m

Table 4: 400 kV Towers

Type	Guyed "VEE" Suspension Tower (520B)	Angle Strain and Closing Span Tower (517E)
		
Tower Height	22.5 m - 33 m	18.5m – 33m
Footprint	32x50m, 30x40m	15X15m; 25x25m
Span	384-520 m	180m – 486m

Tower Locations

The table below presents the locations of the transmission towers associated with the proposed powerline deviations.

TOWER NO.	STRUCTURE	LATITUDE (S)	LONGITUDE (E)	FARM NAME	PORTION
110-111 Span				BAUWEL 128 JO	4
491	520B	26° 10' 2.27" S	027° 05' 34.07" E	ILLMASDALE 70 IQ	2
492	520B	26° 10' 0.41" S	027° 05' 49.99" E	NOOITGEDACHT 69 IQ	3
493	520B	26° 09' 58.4" S	027° 06' 7.17" E		3
494	520B	26° 09' 56.62" S	027° 06' 22.4" E		3
495	520B	26° 09' 54.63" S	027° 06' 39.34" E		3
496	520B	26° 09' 52.65" S	027° 06' 56.3" E		3
497	520B	26° 09' 50.67" S	027° 07' 13.21" E		3
498	520B	26° 09' 48.74" S	027° 07' 29.63" E		3
499	520B	26° 09' 46.57" S	027° 07' 48.13" E		3
500	520B	26° 09' 44.6" S	027° 08' 4.98" E		3
501	520B	26° 09' 42.66" S	027° 08' 21.55" E		RE
502	520B	26° 09' 40.97" S	027° 08' 35.9" E		RE
503	520B	26° 09' 39.2" S	027° 08' 51.04" E		RE
504	520B	26° 09' 37.39" S	027° 09' 6.39" E		RE
505	517E	26° 09' 35.64" S	027° 09' 21.38" E		RE
506	520B	26° 09' 31.8" S	027° 09' 38.37" E	KLIPGAT 18 IQ	9
507	520B	26° 09' 28.04" S	027° 09' 55.06" E		9
508	520B	26° 09' 24.19" S	027° 10' 12.11" E		9
509	520B	26° 09' 20.52" S	027° 10' 28.38" E		9
510	520B	26° 09' 16.82" S	027° 10' 44.79" E		9
511	520B	26° 09' 12.94" S	027° 11' 1.95" E		9
512	520B	26° 09' 9.36" S	027° 11' 17.83" E		9
513	520B	26° 09' 5.75" S	027° 11' 33.8" E		9
514	520B	26° 09' 1.71" S	027° 11' 51.72" E		9
515	520B	26° 08' 58.17" S	027° 12' 7.38" E		9
516	520B	26° 08' 54.65" S	027° 12' 22.96" E		9
517	520B	26° 08' 50.86" S	027° 12' 39.72" E		9
518	520B	26° 08' 46.91" S	027° 12' 57.2" E		RE/8
519	520B	26° 08' 43.11" S	027° 13' 14.03" E		RE/8
520	518D	26° 08' 39.61" S	027° 13' 29.5" E	LICHTENBURG TOWN AND TOWNLANDS 27 IQ	1
521	520B	26° 08' 47.13" S	027° 13' 37.43" E	BUCHANSVALE 61 IQ	2

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. The sensitivity map must be prepared from the national web based environmental screening tool, when available for compulsory use at: https://screening.environment.gov.za/screeningtool. The sensitivity map shall identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.

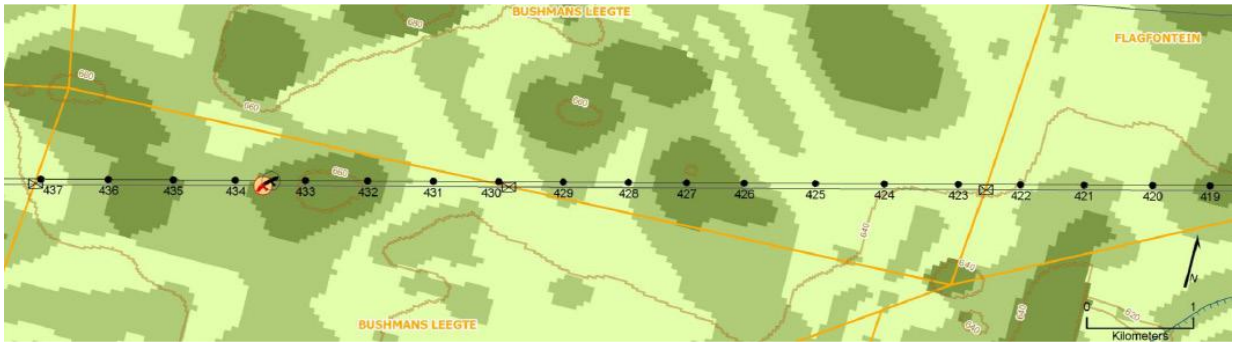


Figure 2: Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile.

The sensitivity maps are shown overleaf.

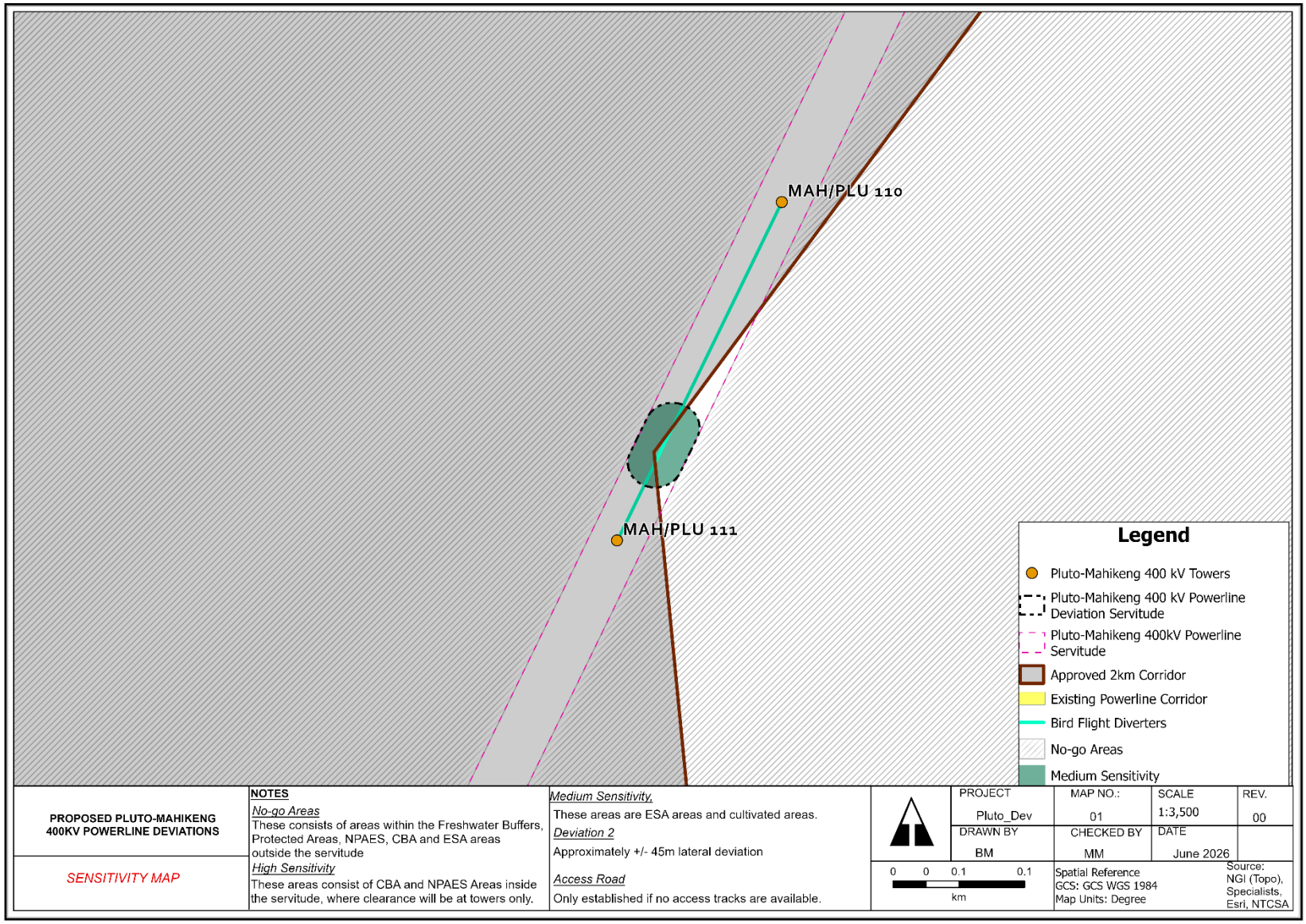


Figure 3: Span between T110 and T111 (Deviation 2)

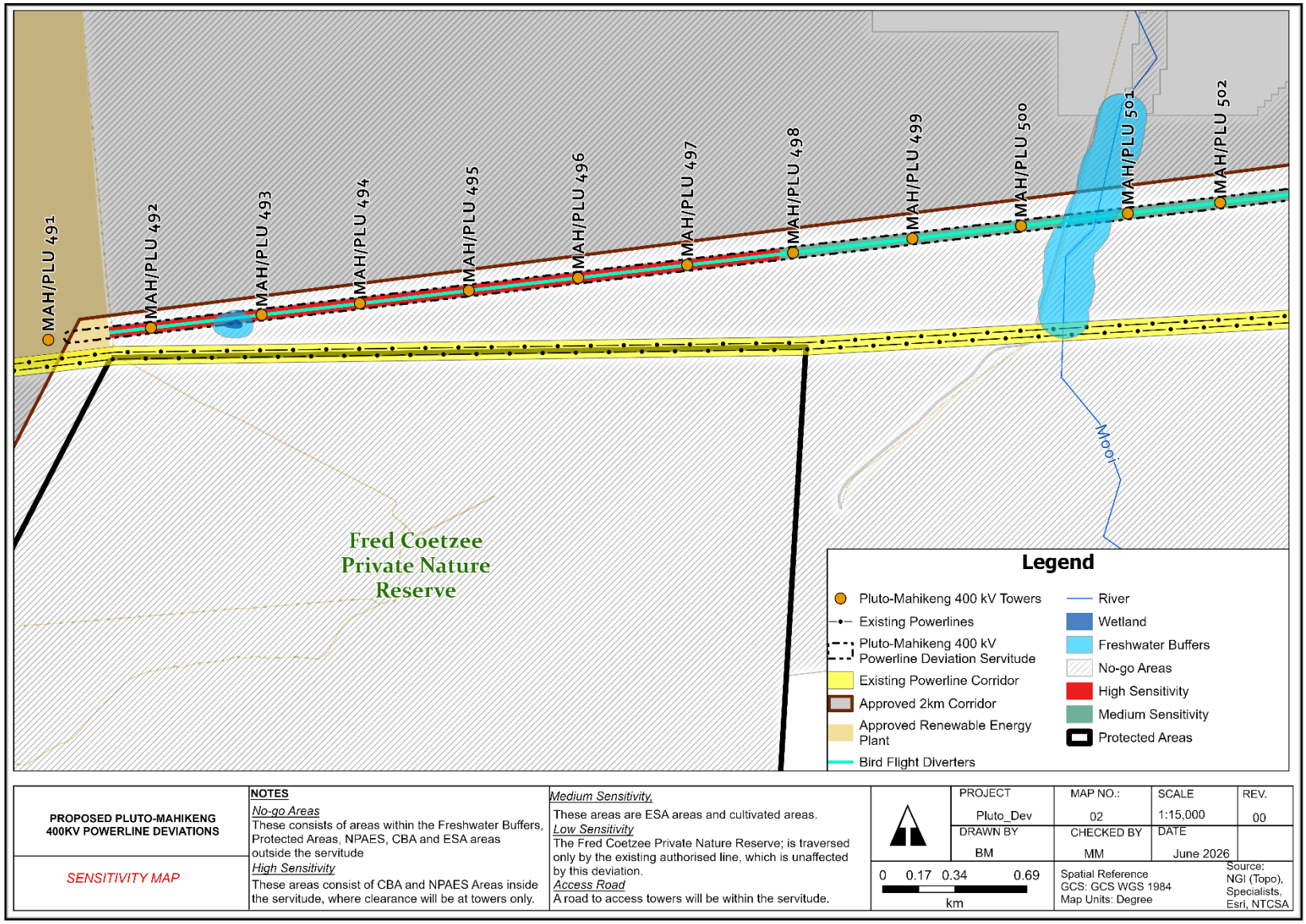


Figure 4: Beginning of Deviation 2 (Towers T491-T502)

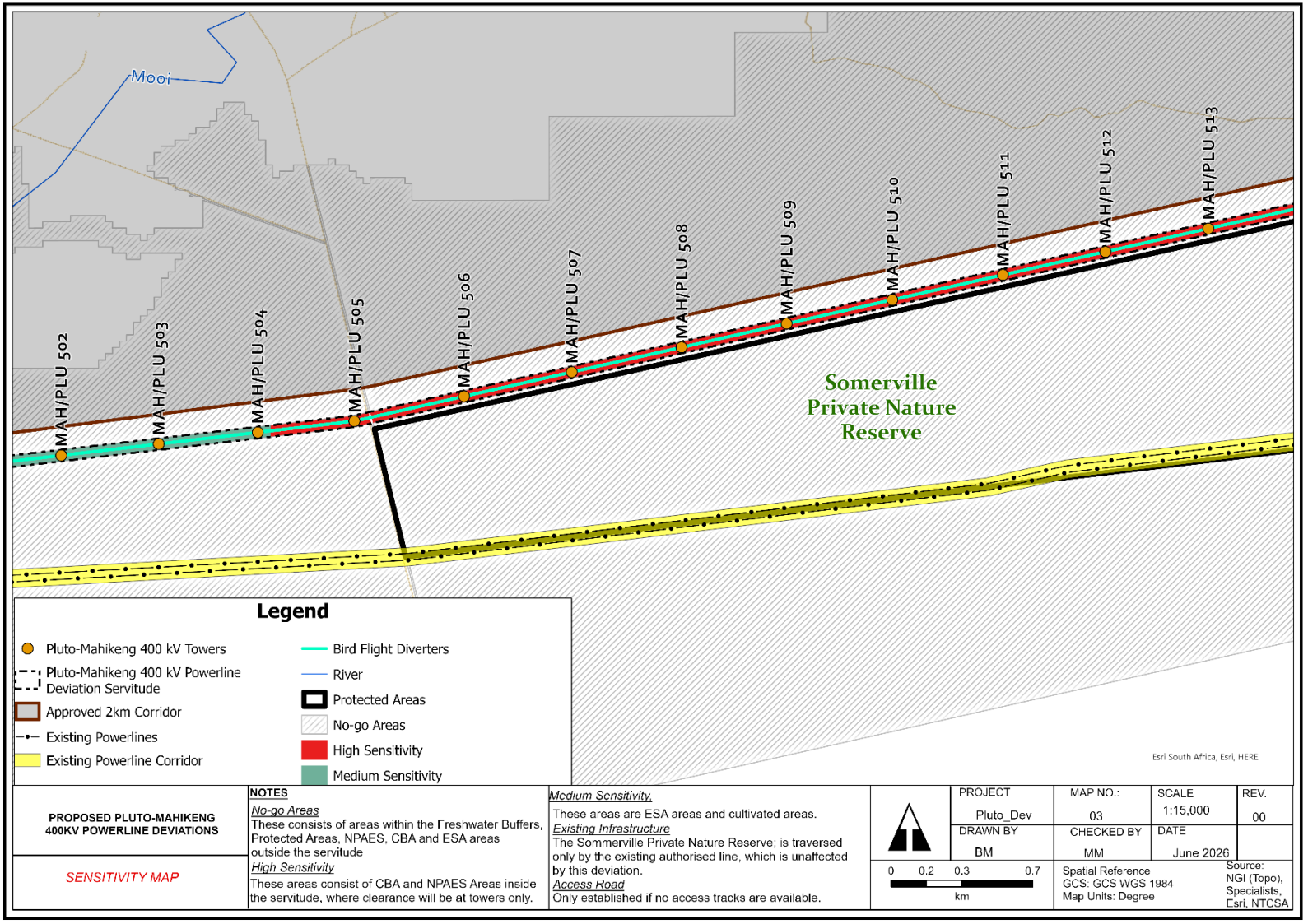


Figure 5: Middle section of Deviation 1 (Towers T503-T514)

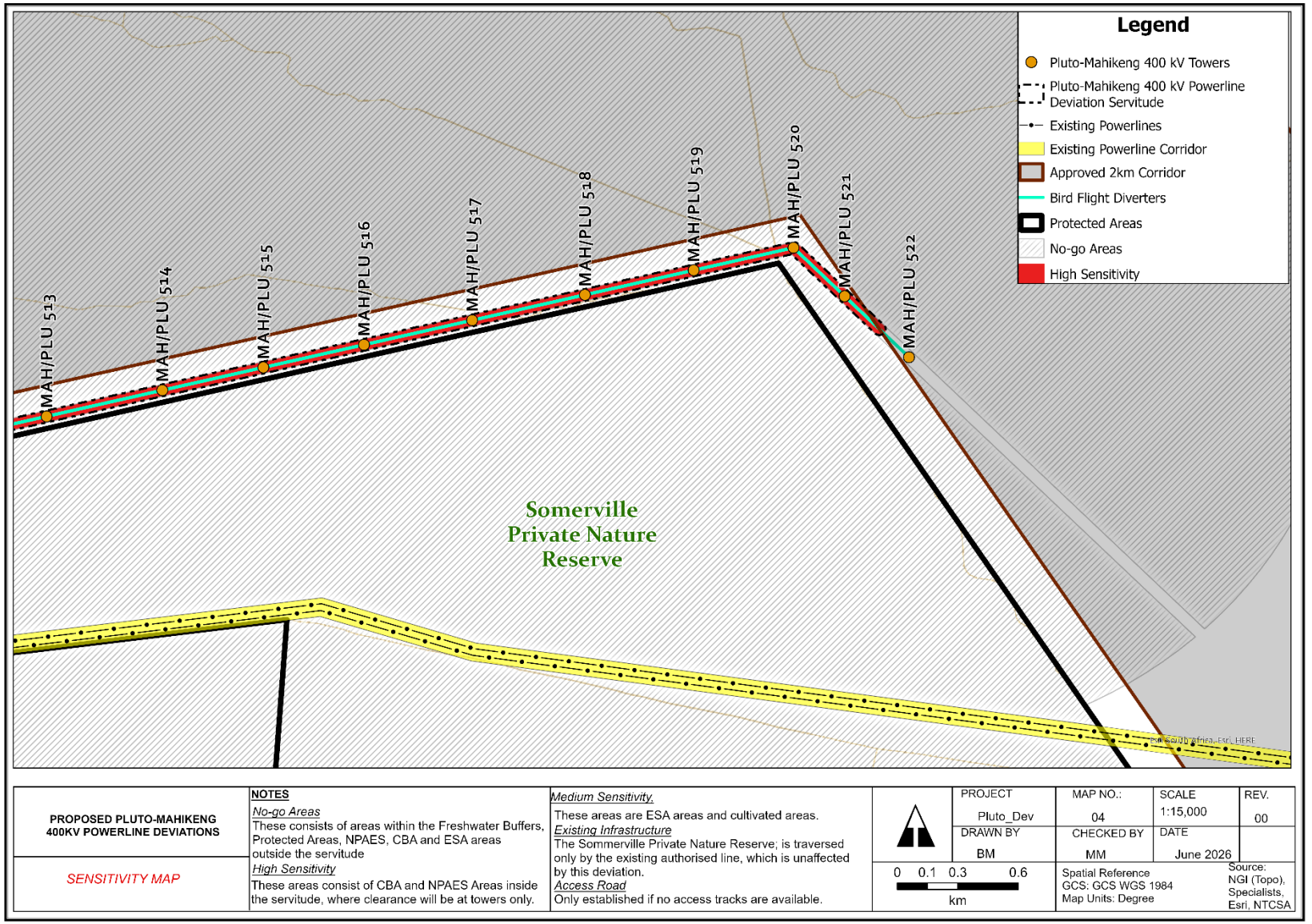


Figure 6: Last section of Deviation 1 (Towers 512-Towers 521)

7.3 Sub-section 3: Declaration

The proponent/applicant or holder of the EA affirms that he/she will abide and comply with the prescribed impact management outcomes and impact management actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and impact management actions are legally binding. The proponent/applicant or holder of the EA affirms that he/she will provide written notice to the CA 14 days prior to the date on which the activity will commence of commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA Date:



David Tunnicliff
0488327

06/10/2026

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred to a new holder, Part B: Section 2 must be completed by the new holder and submitted with the application for an amendment of the EA in terms of Regulations 29 or 31 of the EIA Regulations, whichever applies. The information submitted for an amendment to an environmental authorisation will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and actions must be included in this section. These specific management controls must be referenced spatially and must include impact management outcomes and impact management actions. The management controls including impact management outcomes and impact management actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and impact management actions that are necessary.

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA 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 the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

8.1 SPECIALIST RECOMMENDATIONS

8.1.1 Agriculture (Soil and Land Capability)

Impact Management Outcome:

- Soil resources are conserved and reinstated such that land capability is restored to pre-construction condition.
- Agricultural activities continue with minimal disruption.
- No contamination of agricultural soils.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Soil erosion and dust management - To cause the loss of soil by erosion is an offence under the Soil Conservation Act, Act No 76 of 1969. - Access roads and site surfaces must be monitored for deterioration and possible erosion. - Pro-active measures must be implemented to curb erosion and to rehabilitate eroded areas. - All areas susceptible to erosion must be installed with temporary and permanent diversion channels and berms to prevent concentration of surface water and scouring of slopes and banks, thereby countering soil erosion.	ECO; Contractor	Develop and implement an Erosion and Sediment Control Plan; install temporary and permanent diversion channels and berms prior to earthworks; strip and stockpile topsoil (max 2 m heaps) and replace once activities are complete; replant with indigenous	Pre-construction Construction; post-construction	ECO	Weekly site inspections during construction ; additional inspections after significant storm events; at completion of re-vegetation	ECO inspection reports with photographic records; topsoil management register; Erosion and Sediment Control Plan on file; vehicle inspection records; re-vegetation/seeding records; drainage installation records; rehabilitation records; ECO sign-off at completion

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All cleared areas must be ripped and rehabilitated after construction. - The top 200mm layer of topsoil must be removed and stockpiled in heaps not higher than 2m and replaced on the construction areas once the activities have been completed. - The affected areas should be replanted with a grass mixture indigenous to the area. - All vehicle movement must be along existing roads or tracks as far as possible. - All stormwater runoff must be managed efficiently so as to avoid stormwater damage and erosion to adjacent properties. - The viability of undertaking construction during the dry months of the year must be investigated in order to overcome possible problems caused by excessive moisture. - Should any new temporary access roads be required, the following should apply in areas which are prone to erosion: ○ Where a cutting is made, subsoil drains should be installed wherever a perched		grass/cover post-installation; phase vegetation clearance to minimise exposure; inspect vehicles for fuel/oil leaks before use; apply temporary erosion control measures (silt fences, straw wattles) over exposed soils; schedule clearance during low-rainfall/low-wind periods; avoid clearance before prolonged inactivity; rehabilitate eroded areas immediately upon detection				

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
water table occurs within 900m of the formation in all cuttings and below fills in the alluvial zones. ○ It is further critical to manage surface water. Drains should be provided along the top and bottom of all deep cuttings. This is to minimise the flow of surface water and erosion to the exposed cut faces and erosion along the toe of the cuttings. ○ Steep sections of the service road must be supplied of sufficient drainage areas to reduce flow velocity of run-off water. Any eroded sections must be rehabilitated and part of the management plan must include regular inspections of the water run-off areas. If any erosion occurs, rehabilitation must immediately be done. **Dust management** - 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.						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All excavation/construction vehicles must be in good condition and inspected regularly to ensure there are no chemical spills (diesel/oil) which will negatively impact the receiving environment. - After the powerline installation, the ground must be seeded with an indigenous grass or other native cover. - Vegetation clearance and commencement of construction activities can be scheduled to coincide with low rainfall conditions when the erosive stormwater and wind are anticipated to be low whenever possible. - Avoid vegetation clearance prior to periods of prolonged inactivity. - All disturbed areas adjacent to the proposed development areas must be re-vegetated with an indigenous grass mix or vegetation mix, if necessary, to re-establish a protective cover, to minimise soil erosion. - Temporary erosion control measures must be used to protect the disturbed soils during the construction phase until adequate vegetation has established.						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Management of loss of land capability - Direct surface disturbance of the identified arable soils must be avoided where possible to minimise loss of arable soils. - Avoid construction on the active agricultural soils where feasible; - Minimise the development footprint within the actively cultivated soils; - The footprint areas must be lightly ripped to alleviate compaction. - Limit removal of vegetation to demarcated areas only. - Limit earthworks and vehicle movement to demarcated paths and areas.	Contractor; ECO	Demarcate construction footprint before commencement; implement topsoil stripping, storage and replacement plan; restrict all vehicles and equipment to demarcated areas; rip compacted areas post-construction; limit vegetation removal to demarcated zones only	Pre-construction Construction Post-construction	ECO	Weekly during active earthworks and construction	Demarcation records and photographs; topsoil management records; ECO inspection reports; site reinstatement sign-off from ECO and landowner
Soil compaction management - Soil compaction is usually greatest when soils are moist, so soils must be stripped when moisture content is as low as possible. - Heavy equipment movement over replaced soils must be minimised. Minimise compaction during smoothing of replaced soils by using dozers rather than graders.	Contractor; ECO	Schedule soil stripping during dry conditions; restrict heavy equipment movement over exposed or replaced soils; use dozers rather than graders for	Construction	ECO	During and at completion of earthworks activities; at replacement and ripping stages	ECO inspection reports; soil ripping depth records; photographic records of stripping and replacement operations

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Following placement, compacted soils must be ripped to full rooting depth (30cm as the bare minimum seedbed) to allow penetration of plant root.		smoothing; rip all replaced soils to minimum 30 cm depth before re-vegetation				
Soil contamination management - Contamination prevention measures must be addressed in the Environmental Management Programme (EMPr) for the proposed development, and this must be always implemented and made available and accessible to the contractors and construction crew conducting the works on site for reference. - A spill prevention and emergency spill response plan, as well as dust suppression, and fire prevention plans must also be compiled to guide the construction works. - An emergency response contingency plan must be put in place to address clean-up measures should a spill and/or a leak occur. - Burying of any waste including rubble, domestic waste, empty containers on the site must be strictly prohibited and all	Contractor;	Compile spill prevention, emergency spill response, dust suppression and fire prevention method statements as part of the EMPr before construction commences; make EMPr accessible to all site personnel; prohibit burial of any waste on site; arrange approved waste disposal; implement emergency clean-up response	Pre-construction Construction	ECO	Weekly site inspections; immediately following any spill, leak or contaminati on incident	Appended Method Statements on file and signed as received by contractor; spill prevention and response plan; waste disposal certificates; incident reports; ECO inspection reports

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
construction rubble waste must be removed to an approved disposal site.		immediately on any spill or leak				

8.1.2 Archaeology

Impact Management Outcome: Protection of archaeological and cultural heritage resources within the powerline servitudes

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Pre-construction education and awareness training - Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction: o Flaked stone tools, bone tools and loose pieces of flaked stone; o Ash and charcoal; o Bones and shell fragments; o Artefacts (e.g., beads or hearths);	Contractor NTCSA Qualified archaeologist	Pre-construction induction of all construction teams on the types of archaeological sites that may occur in the construction areas and chance find obligations Establish a 10m buffer around an indicator if identified. Appointment of an archaeologist as and when there are findings.	Pre-construction, Construction	NTCSA ECO	As and when	Training material. Attendance register. Demarcated indicator area. Findings report and proof of submission to SAHRA.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
o Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling. - In the event that any of the above are unearthed, all construction within a radius of at least 10m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or PHRA officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by PHRA.						
Archaeological Chance Find Procedure (ACFP) for Heritage Resources	Contractor	Follow steps indicated in the Chance Find Procedure if	Construction	ECO	Throughout	Photographs and coordinates of findings Secured Areas

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The following procedures must be followed when heritage resources are encountered during the construction or operational phase: - All construction/clearance activities in the vicinity of the heritage resources found by accident on site must cease immediately to avoid further damage to the chance finds - Immediately report the chance finds to the supervisor/site manager, or if they are unavailable, report to the project Environmental Officer (EO), who will provide further instructions. - Record (note taking, photograph with a scale, GPS coordinates) all the chance find exposed during the activity. - All remains are to be stabilised in situ. - Secure (e.g., barricade) to prevent further disturbance on heritage resources. - The EO must contact the qualified archaeologist registered with the Southern African Professional Archaeologists (ASAPA) or South African Heritage Resources Agency (SAHRA).		resources are found.				

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The project archaeologist will conduct the inspection recommendations, assess the significance under SAHRA guidelines, recommendations and mitigation measures.						

8.1.3 Avifauna

Impact Management Outcome: Protection of avifaunal resources within the powerline servitudes.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Construction						
- It is recommended that Bird Flights Diverters (BFDs) be installed on the earth wires between the towers 491 and 521 (Deviation 1) and towers 110-111 (Deviation 2) as detailed in the Pluto-Mahikeng 400kV Power Line Mitigation Matrix, dated 15 May 2026. - Bird Flight Diverters (BFDs) must be installed ten metres apart, on the earth wires in an alternating black and white/yellow pattern. BFDs must be installed on the entire length of the earth wire span to ensure maximum collision protection for the movement of vultures when roosting on the towers. BFDs	Contractor, Qualified avifaunal specialist	Installation of BFDs and bird guards on the earth wires and insulator strings per the Mahikeng-Pluto 400 kV Mitigation Matrix (15 May 2026) and Eskom UID 41-332; Halting of works and appointment of an avifaunal specialist on nest discovery; Footprint limitation and rehabilitation per the botanical CEMPr	Throughout construction; BFDs installed as soon as possible after stringing	ECO (with avifaunal specialist as required)	Weekly during construction; once-off verification on completion of stringing	ECO audit reports; BFD and bird-guard installation records and photographs; raptor-nest incident records and specialist reports

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
must be installed on the earth wires as soon as possible after stringing. - The installation of bird guards, in accordance with the Eskom Transmission Bird Perch Guidelines Unique Identifier 41-332, above the insulator strings of Towers 491 to 521 and Towers 110-111 is highly recommended. - Should a raptor nest be identified within or in close proximity to the alignment prior to or during construction, all construction activities in the immediate vicinity must be temporarily halted. The Environmental Control Officer (ECO) must appoint a suitably qualified avifaunal specialist to assess the nest and provide site-specific management recommendations, including appropriate buffer distances and activity restrictions. Implementation of these measures may necessitate a delay or rescheduling of construction						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
activities to avoid disturbance, particularly where the nest is active. - Avoid removal of sensitive vegetation types. The recommendations of the botanical CEMPr must be strictly implemented, especially as far as limitation of the construction footprint and rehabilitation of disturbed areas is concerned. - Construction activity should be restricted to the immediate footprint of the Mahikeng-Puto 400kV Power Line infrastructure. This is especially relevant to vegetation clearing undertaken to facilitate access during construction, which should be carefully managed to prevent inadvertent disturbance or loss of nesting habitat. - All construction activities should be strictly managed according to generally accepted environmental best practice standards, so						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
as to avoid any unnecessary impact on the receiving environment. - All temporary disturbed areas should be rehabilitated according to the site's rehabilitation plan, following construction. - Maximum use should be made of existing access roads and the construction of new roads should be kept to a minimum.						
Operation						
- NTCSA Line and Servitude Managers are requested to report all bird collisions encountered during routine line patrols of the Pluto-Mahikeng 400kV Power Line to the Eskom-Endangered Wildlife Trust Strategic Partnership, who will provide additional site-specific mitigation recommendations, if required. - All Bird Flight Diverters must be maintained for the duration of the operational	NTCSA Line and Servitude Managers; NTCSA Environmental Manager; Eskom-Endangered Wildlife Trust Strategic Partnership	Reporting of collisions, faulting and raptor nests to the Eskom-EWT Strategic Partnership and implementation of their site-specific recommendations; Maintenance of BFDs and bird guards;	Operational lifespan of the power line	NTCSA Environmental Manager; Eskom-EWT Strategic Partnership	During routine line patrols and inspections; Ongoing for the operational lifespan	Line patrol and incident records; Bird collision and faulting register; EWT correspondence and recommendations; nest-removal permits

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
lifespan of the Pluto-Mahikeng 400kV Power Line. - Should raptor nests be identified during the operational phase, NTCSA Line and Servitude Managers must report these to the Environmental Manager, who will in turn notify the Eskom-Endangered Wildlife Trust Strategic Partnership for site-specific guidance. Recommendations provided must be implemented, including the delineation of appropriate buffer distances and the postponement/rescheduling of maintenance activities, where required, to prevent disturbance-related nest abandonment or breeding failure. - While it is not illegal to remove an unoccupied nest that is posing a quality of supply risk, the removal of nests that contain eggs, chicks or adult birds will require a permit to do so.		Permit obtained prior to removal of occupied nests				

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
NTCSA must notify the Eskom-Endangered Wildlife Trust Strategic Partnership in these instances to arrange for the translocation or removal of the nest. - All bird guards should be maintained for the duration of the operational lifespan of the Pluto-Mahikeng 400kV Power Line. - NTCSA Line and Servitude Managers are requested to report all bird related faulting on the Pluto-Mahikeng 400kV Power Line infrastructure to the Eskom-Endangered Wildlife Trust Strategic Partnership, who will provide site-specific mitigation recommendations if required. - Mitigation requirements detailed in the site specific botanical OEMPr report must be strictly implemented to ensure minimal habitat impact. - Existing roads must be used as far as possible for access						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
during the operational lifespan of the project. - All operational activities should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment.						
- NTCSA power line servitude staff to include avifaunal monitoring during routine inspections of the Mahikeng-Pluto 400kV Power Line and record the number of mortalities, nesting activity and faecal matter fouling and determine the effectiveness of the mitigation actions taken	NTCSA Line and Servitude staff	Avifaunal monitoring incorporated into routine line inspections; Recording of mortalities, nesting activity and faecal fouling; Assessment of mitigation effectiveness	Operational lifespan of the power line	NTCSA Environmental Manager; Eskom-EWT Strategic Partnership	During each routine line inspection or patrol	Completed avifaunal monitoring records; Mortality and nesting registers; Effectiveness review reports

8.1.4 Aquatic (Freshwater Resources)

Impact Management Outcome: Mitigate the infilling of wetlands and other freshwater ecosystems, the loss of vegetation (and subsequent erosion) in or adjacent to freshwater ecosystems, and the possible fragmentation of habitats associated with freshwater ecosystems

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General – Demarcation of aquatic buffer areas and no-go areas prior to construction; – Restriction of construction activities to approved footprints and access routes; – Implementation of erosion and sediment control measures; – Hydrocarbon spill prevention and spill response procedures; – Rehabilitation of disturbed areas following construction; – Proper waste management and disposal procedures; – Protection of riparian vegetation and adjacent wetland habitat;	Contractor	Demarcation of aquatic buffers and no-go areas; Restriction of activities to approved footprints and access routes; Erosion and sediment control; Hydrocarbon spill prevention and response; Rehabilitation; Waste management;	Prior to and throughout construction	ECO	Weekly during construction	ECO audit reports; photographic records; demarcation and rehabilitation records

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
		Protection of riparian and wetland habitat				
Design – Final tower positions shall avoid direct encroachment into confirmed wetlands, watercourses, riparian habitat, and associated aquatic buffer areas; – Existing access routes shall be used where practicably possible to minimise disturbance to natural vegetation and soils; – Tower positions and associated infrastructure shall remain outside delineated no-go areas identified in Section 8 of the Freshwater Assessment Report. – Construction footprints shall be minimised as far as practicably possible.	NTCSA EAP Freshwater specialist for verification	Final tower positions set to avoid wetlands, watercourses, riparian habitat and buffers; existing access routes used; positions kept outside no-go areas per Section 8 of the Freshwater Assessment Report; footprints minimised	Design / pre-construction phase	ECO EAP Freshwater specialist (design review)	Once-off at design finalisation; verified prior to construction	Final tower-position layout and design drawings; Freshwater specialist confirmation; Pre-construction walk-down records
Construction – Clearly demarcate all identified aquatic buffer areas and no-go areas prior to commencement of construction activities.	Contractor	Demarcation of buffers and no-go areas; Restriction to approved work	Throughout construction	ECO	Weekly during construction; Increased during works at or near the Mooi River	ECO audit reports; Photographs; Spill register;

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Restrict construction activities to approved work areas and servitudes only. – Prohibit stockpiling, batching, refuelling, servicing of equipment, and waste disposal within aquatic features and associated buffer areas. – Use existing access routes where practicably possible to minimise vegetation disturbance and soil compaction. – Implement erosion and sediment control measures in all disturbed areas, particularly adjacent to the Mooi River crossing and seasonal wetland areas. – Prevent hydrocarbon contamination through appropriate handling, storage, and spill response procedures. – Ensure that spill kits are available onsite during construction activities. – Limit vegetation clearing to the minimum footprint required for construction activities.		areas and servitudes; Prohibition of stockpiling, batching, refuelling, servicing and waste within aquatic features and buffers; Erosion and sediment control at the Mooi River crossing and seasonal wetlands; Hydrocarbon handling and spill response with spill kits onsite; Minimised clearing; Waste removal;			and wetland crossings	Waste disposal certificates; Rehabilitation records

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Remove all construction-related waste from site and dispose of it at approved waste disposal facilities. – Rehabilitate disturbed areas as soon as practicably possible following construction. – Prevent unnecessary disturbance to riparian vegetation and adjacent wetland habitat during construction activities.		Rehabilitation				
Operation – Restrict maintenance access to existing access tracks where practicably possible; – Prevent unnecessary vegetation disturbance during maintenance activities; – Maintain erosion control measures where required; – Prevent hydrocarbon contamination during maintenance activities involving vehicles or machinery.	NTCSA Line and Servitude Managers / maintenance teams	Maintenance access restricted to existing tracks; prevention of unnecessary vegetation disturbance; Maintenance of erosion control; Prevention of hydrocarbon contamination during maintenance	Operational lifespan	NTCSA Environmental Manager	During routine maintenance and inspections	Maintenance and inspection records; Erosion-control inspection records

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Decommissioning – Remove infrastructure in a manner that minimises disturbance to surrounding vegetation and soils; – Prevent pollution and hydrocarbon contamination during dismantling activities; – Rehabilitate all disturbed areas following removal of infrastructure; – Dispose of all waste materials at approved disposal facilities.	Contractor	Removal of infrastructure minimising disturbance to vegetation and soils; Pollution and hydrocarbon prevention; Rehabilitation of disturbed areas; Disposal of waste at approved facilities	Decommissioning phase	ECO / Environmental Manager	Throughout decommissioning; Closure inspection on completion	Decommissioning and closure audit reports; Rehabilitation records; Waste disposal certificates

8.1.5 Civil Aviation

Impact Management outcome: Ensure the safety of flights.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Should an Environmental Authorisation be granted and the project proceeds to construction, all new obstacles must comply with the height limits specified and the SACAA Obstacle Approval process per CA139.27 and associated SA-CATS complied with. - Operational mitigation measures arising from any abnormal conditions or special operations identified in consultation with the SACAA during construction will need to be implemented and such conditions appropriately recorded in the Aeronautical information Publication (AIP), Aeronautical Information Circulars (AIC) and/or Notices to Airmen (NOTAMs) from time to time.	NTCSA NTCSA	Obstacle assessment application Compilation of a programme and plan that details the measures indicated by CAA and SANDF.	Pre-construction Operation	ECO NTCSA Grid Manager	Once off Quarterly/ as indicated by the two organisations.	South African Civil Aviation Authority Approval. Programme/ Plan Monitoring Report.

8.1.6 Palaeontology

Impact Management Outcome: To protect palaeontological resources encountered during construction; to ensure any chance fossil finds are identified, recorded, and managed appropriately in compliance with the National Heritage Resources Act (Act 25 of 1999).

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The following procedure must be considered in the event that previously unknown fossils or fossil sites are exposed or found during construction of the powerline: 1. Surface excavations should continuously be monitored by the ECO and any fossil material be unearthed the excavation must be halted. 2. If fossiliferous material has been disturbed during the excavation process it should be put aside to prevent it from being destroyed. 3. The ECO then has to take a GPS reading of the site and take digital pictures of the fossil material and the site from which it came. 4. The ECO then should contact a palaeontologist and supply the palaeontologist with the information (locality and pictures) so that the palaeontologist can assess the	ECO; Palaeontologist; Contractor; SAHRA	Stop-work procedure implemented immediately on fossil discovery. ECO records GPS coordinates and photographs. Palaeontologist notified with location and photographic evidence. Site inspection scheduled if major find confirmed.	Construction phase: triggered by a chance find event; procedure implemented immediately on discovery.	Palaeontologist; SAHRA; ECO	Per chance find event; as directed by palaeontologist and SAHRA.	Chance find notification record; Stop-work records; GPS coordinates and digital photographs; Palaeontologist assessment report; SAHRA permit (if applicable); Fossil repository deposit record; Monitoring schedule.

importance of the find and make recommendations. 5. If the palaeontologist is convinced that this is a major find an inspection of the site must be scheduled as soon as possible in order to minimise delays to the development. 6. From the photographs and/or the site visit the palaeontologist will make one of the following recommendations: a. The material is of no value so development can proceed, or: b. Fossil material is of some interest and a representative sample should be collected and put aside for further study and to be incorporated into a recognised fossil repository after a permit was obtained from SAHRA for the removal of the fossils, after which the development may proceed, or: c. The fossils are scientifically important and the palaeontologist must obtain a SAHRA permit to excavate the fossils and take them to a recognised fossil repository, after which the development may proceed. 7. If any fossils are found then a schedule of monitoring will be set up between the developer and palaeontologist in case of further discoveries.		SAHRA permit obtained if required for removal/excavation. Fossils deposited in recognised fossil repository. Monitoring schedule agreed between developer and palaeontologist following any find.				

8.1.8 Terrestrial Biodiversity

Impact Management Outcome:
- Minimise vegetation clearance and habitat fragmentation.
- Impacts on the environment are minimised for the duration of the project lifecycle and the development is kept to the registered servitude area of the powerline

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Destruction of natural vegetation – An independent Ecological Control Officer (ECO) should be appointed to oversee construction. – Areas designated for vegetation clearing should be identified and visibly marked off. – Vegetation clearing in natural areas should be kept to a minimum and restricted to the proposed development footprint only, i.e. the confirmed servitude and access road. – A temporary fence or demarcation must be erected around the construction area (including the servitude, construction camps, areas where material is stored, and the actual footprint of the development) to prevent access to sensitive environments. – Prohibit vehicular or pedestrian access into natural areas beyond the demarcated boundary of the construction area. – No open fires are permitted within naturally vegetated areas.	NTCSA Project Manager	Appoint an experienced ECO before construction starts. Mark off no-go areas and conduct induction and toolbox talks to inform workers. Fence off the construction camp. Compile and implement an access plan. Compile and implement the Vegetation Rehabilitation and Invasive	Pre-Construction and Construction	ECO	Once off. Regular monitoring of access roads and whenever vegetation clearance is done.	Appointment letter and notification letter to DFFE. Demarcated areas. Access Plan Toolbox talks agenda and attendance registers. Vegetation Rehabilitation Plan Invasive Plant Management Plan.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Formalise access roads and make use of existing roads, including farm roads and tracks where feasible, rather than creating new routes through naturally vegetated areas. – A vegetation rehabilitation plan should be implemented. Grass can be removed as sods and stored within transformed vegetation. However, alien invasive vegetation should be removed prior to storing grassland sods in transformed areas. Smaller shrubs and bulbs should also be removed and used for rehabilitation. The plants must preferably be removed during the winter months and be replanted by latest springtime. The grass sods should not be stacked on top of each other. Once construction is completed, these sods should be used to rehabilitate the disturbed areas from where they have been removed. In the absence of timely rainfall, the sods should be watered well after planting and at least twice more over the next 2 weeks. – Construction workers may not remove flora and neither may anyone collect seed from the plants without permission from the local authority.		Plant Management Plan. Undertake progressive rehabilitation using approved plant/ grass species.				
Erosion - Do not allow erosion to develop on a large scale before taking action.	Contractor	Implement erosion/ stormwater	Prior to construction	ECO	Prior to and during construction	Designated access roads (Access Plans)

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Make use of existing roads and tracks where feasible, rather than creating new routes through grassland areas. - Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction/earthworks in that area. - Runoff from roads must be managed to avoid erosion and pollution problems. - Remove only the vegetation that is essential for construction, and do not allow any disturbance to the adjoining natural vegetation cover. The grassland can be removed as sods and re-established after construction is completed. - Colonisation of the disturbed areas by plant species from the surrounding natural vegetation must be monitored to ensure that vegetation cover is sufficient within one growing season. If not, then the areas need to be rehabilitated with a grass seed mix containing species that naturally occur within the study area. - Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resulting from activities within and adjacent to the construction camp and work areas.		management measures. Construction activities of the powerline are restricted to the servitude area. The servitude is marked, and areas outside the servitude are marked as No-go areas.				Contractor's monitoring report. Stormwater management structures.
Listed and or Protected Plant Species - The plants of conservation concern/ protected geophytes should be	Contractor Ecologist	Apply for a flora permit.	Construction	ECO	Ongoing	Flora Permit

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
removed by a suitably qualified specialist prior to construction. This can only be done if authorised by the local conservation authority (DEDECT) using a permit. Once construction is complete, the plants should be reused as part of the rehabilitation of the disturbed areas and replanted where they were removed. - Where possible, construction activities must be restricted to previously disturbed areas. - Implement a Plant Rescue and Rehabilitation Plan: Where the plants of conservation concern are deemed to be under threat from the construction activity, the plants/geophytes should be removed by a suitably qualified specialist and replanted as part of vegetation rehabilitation after the construction (Note, these plants may only be removed with the permission of the provincial authority - permit). - Adhere to the walkdown mitigations. - Construction workers may not tamper with or remove these plants, and neither may anyone collect seed from the plants without permission from the local authority. - Cordon off the sensitive vegetation that houses the protected plant species and the plants of conservation concern, and		Implement a Plant and Rescue Plan before vegetation clearance, Appoint a specialist to supervise the removal of SCCs and protected geophytes. Induction must be done with all new employees to inform workers and subcontractors about vegetation clearance. Trees to be removed must be marked. A tape must be placed around protected trees/ geophytes that				Plant and Rescue Plan. Specialist Appointment letter. There is no evidence of site clearance outside of the servitude area. Demarcated area.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
protect them from construction activities and vehicles. - Slight deviations of access road/pylon alignments must be permitted to avoid plant populations of conservation concern (DWAF, 2005).		must not be cut or disturbed.				
Destruction, further loss and fragmentation of the of habitats, ecosystems and vegetation community - All very high sensitivity areas must be avoided and declared an outright "No-go" area. All high sensitivity areas should be cautiously considered. Should development take place in the high sensitivity areas, the pole spacing should be extended to reduce the number of poles in these areas. The footprint area must be minimised and clearing must also be restricted to the direct impact area and the 55-90 m corridor may not be cleared as a whole. - Drainage lines must be avoided for pole placement and access roads, and a no-go buffer as indicated in the freshwater report must be applied around them. - Areas of indigenous vegetation, even secondary communities outside of the direct pylon footprint, should under no circumstances be fragmented or disturbed further. Clearing of vegetation should be minimized and avoided where	NTCSA Project Manager Contractor	Mark off no-go areas and conduct induction and toolbox talks to inform workers. Fence off the construction camp. Compile and implement an access plan. Compile and implement the Vegetation Rehabilitation and Invasive Plant Management Plan. Undertake progressive	Pre-Construction and Construction	ECO	Once off. Regular monitoring of access roads and whenever vegetation clearance is done.	Demarcated areas. Access Plan Toolbox talks agenda and attendance registers. Vegetation Rehabilitation Plan Invasive Plant Management Plan.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
possible. All activities must be restricted too flat areas as far as possible. No further loss (unnecessary) of very high/high sensitivity areas should be permitted. It is recommended that areas to be developed be specifically demarcated so that during the construction phase, only the demarcated areas be impacted upon. All structure footprints to be rehabilitated and landscaped after installation is complete. Rehabilitation of the disturbed areas existing in the project area must be made a priority. Topsoil must also be utilised, and any disturbed area must be re-vegetated with plant and grass species which are endemic to this vegetation type. - Existing access routes, especially roads must be made use of. The development areas and access roads should be specifically demarcated so that during the construction phase, only the demarcated areas may be impacted upon.		rehabilitation using approved plant/ grass species.				
Alien Invasive Plants – Alien invasive species identified within the study area, particularly along the final route alignment, should be removed prior to construction-related soil disturbances. By removing these species, the spread of seeds into disturbed soils will be prevented, which could have a positive	Contractor	Implement the Invasive Plant Management Plan. Inspecting and cleaning equipment to	Construction	ECO	On-going	No proliferation of invasive plants. Monitoring Report

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
impact on the surrounding natural vegetation. – All alien seedlings and saplings must be removed as they become evident for the duration of construction. – Manual/mechanical removal is preferred to chemical control. – All construction vehicles and equipment, as well as construction material, should be free of plant material. Therefore, all equipment and vehicles should be thoroughly cleaned prior to access to the construction areas. The ECO should verify this. – Adhere to the alien and invasive management developed for the project at all times. – Compile and implement an alien invasive monitoring plan to remove alien invasive plant species along the chosen route alignments, prior to construction. – Rehabilitate all areas cleared of invasive plants as soon as practically possible, utilising specified methods and species. – Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge. Monitoring should continue for at least two years after construction is complete. – Follow manufacturer's instruction when using chemical methods, especially in		ensure there is no plant material on tyres.				

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
terms of quantities, time of application etc. – Ensure that only properly trained people handle and make use of chemicals. – Dispose of the eradicated plant material at an approved solid waste disposal site. – Only indigenous plant species naturally occurring in the area should be used during the rehabilitation of the areas affected by the construction activities.						
Deterioration of natural vegetation - After construction, the land must be cleared of rubbish, surplus materials, and equipment, and all parts of the land must be left in a condition as close as possible to that prior to construction. - Ensure that maintenance work does not take place haphazardly, but according to a fixed plan. - Cordon off areas that are under rehabilitation as no-go areas using danger tape and steel droppers. If necessary, these areas should be fenced off to prevent vehicular, pedestrian and livestock access. - Delay the re-introduction of livestock (where applicable) to all rehabilitation areas until an acceptable level of re-vegetation has been reached. - Maintenance workers may not trample natural vegetation and work should be restricted to previously disturbed footprint.	Contractor NTCSA	Have meetings with landowners to delay the reintroduction of livestock in rehabilitated areas. Implement Maintenance as per NTCSA's Plan. Fence off areas that have been rehabilitated and NTCSA to conscientize maintenance workers about keeping to the servitude when	Operation	NTCSA	Ongoing during operation.	Maintenance Plan. Rehabilitated areas in good condition.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
In addition, mitigation measures as set out for the construction phase should be adhered to. -		carrying out maintenance activities.				
Fauna - The walk-through of the powerline corridor conducted in March-April 2026 to identify areas of faunal sensitivity must be adhered to at all times. - Any fauna threatened by construction activities should be removed to safety by the ECO or other suitably qualified person. - Existing roads and access routes should be used wherever possible. - During construction all vehicles should adhere to demarcated tracks or roads and the speed limit should not exceed 40km/h on larger roads and should be 20-30km/h on smaller access tracks. - No night driving should be permitted, if unavoidable, this must be restricted, and speed limits adhered to. - A clause must be included in contracts for ALL construction personnel (i.e. including contractors) working on site stating that: "no wild animals will be hunted, killed, poisoned or captured. No wild animals will be imported into, exported from or transported in or through the province. No wild animals will be sold, bought, donated and no person associated with	NTCSA Contractor	Compiling and implementing the following Method Statements: Workshop or plant servicing. Handling, transport and storage of Hazardous Chemical Substance's. Vegetation management. Access management. Fire plan. Waste management. Emergency preparedness. Dust and noise management methodologies. Fauna interaction and	Construction	ECO	On going	Access Plan Relocation Plan and Report Signed Contracts Approved Method Statements. Induction Presentation and attendance registers. Incident Reports. Vehicle Inspection Records.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
the development will be in possession of any live wild animal, carcass or anything manufactured from the carcass." A clause relating to fines, possible dismissal and legal prosecution must be included should any of the above transgressions occur, especially for SCC - All construction staff should undergo environmental induction before construction commences in order to raise awareness and reduce potential faunal impacts. - To avoid impacts on amphibians, all spills of hazardous material should be cleared in the appropriate manner according to the nature and identity of the spill and all contaminated soil removed from the site. - Avoid sensitive faunal habitats such as drainage lines and wetlands where possible. - No fires should be allowed within the site as there is a risk of runaway veld fires. - Any faunal species that may die as a result of construction must be recorded (i.e. be photographed, GPS co-ordinates taken) and the records uploaded to iNaturalist. - All machinery, vehicles and earth moving equipment must be maintained and the noise these create must meet industry minimum standards. e.g. the sound generated by a machine must be below		risk management. Conducting induction and toolbox talks regarding fauna aspects and also incorporating the clause regarding management of fauna. Relocating fauna in consultation with landowners.				

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
a certain decibel as prescribed in the relevant noise control regulations. - A trained snake handler must be onsite during construction or on call to remove any snakes within construction areas. - If any parts of site such as construction camps must be lit at night, this should be done with low-UV type lights (such as most LEDs) as far as practically possible, which do not attract insects and which should be directed downwards. - All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill. - Ensure that cables and connections are insulated successfully to reduce electrocution risk. - Any exposed parts must be covered (insulated) to reduce electrocution risk.						
Rehabilitation *Vegetation Clearing* - Restrict vegetation clearing to the mapped engineering design pegging, as spelt in the planning stage. - Where some concrete structures are removed, disturb as little vegetation as possible.	Contractor	Compile and implement method statements for vegetation clearance, topsoil management and	Construction/ Post construction	ECO	On-going	Rehabilitated areas. Close-off Report. Approved Method Statements

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Soil clearing to establish proper foundation for the structures and stockpiling areas should be done by clearing topsoil and separating stockpiling for later use during rehabilitation. - It is advisable not to store the removed structures, stockpiles and material for use in ecologically-sensitive areas like riparian belts, watercourses and ecological buffer areas. - Where vegetation removal is imminent, remove it with roots and parts of their structures to ensure replanting on disturbed portions. If the area will be re-used to construct the new structures, temporary measures to prevent topsoil wash-out during rainfall must be implemented. - Reseed using seed-mix of indigenous species on the affected zones. - Minimise uncontrolled slope attenuation and heavy erosion by constructing storm-water control berms, gabion rock blocks as velocity dissipaters, and installing culverts to spread the flowing surface run-off especially on service routes. Rehabilitation should be assisted by ripping compacted soil and sowing a tree species naturally occurring in the savannah biome of the same area. Ripping should be done to a depth of		undertaking progressive rehabilitation				

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
250mm in two directions at right angles to the slope; this aids in loosening soil and allowing seed germination. *Soil compaction* - Do not rip and/or scratch areas under wet conditions, as the soil will not break up and compaction will be worsened. - Do not permit vehicular or pedestrian access into natural or seasonally wet areas during and immediately after rainy periods, until that soil has dried out (DWAF, 2005). - Areas where soil has been compacted should be ripped to encourage vegetation growth *Removal of vegetation for new drain ways/ditches* - Where possible, remove vegetation as turfs or territories that can be replanted as part of the rehabilitation of vegetation around the exact portions of the footprint. - Where soils are removed, topsoil and subsoil must be stockpiled separately in low heaps of less than 2m high. Top soil is a valuable resource for rehabilitation and vegetation of disturbed areas. After construction, compacted areas should be ripped and topsoil replaced from the						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
areas where it was removed. - All sloped areas must be re-vegetated by using removed plant tufts or by seeding with a grass-mix containing species naturally occurring in the area. Sloped areas where vegetation has been removed or destroyed should be replanted immediately after completion of construction to avoid erosion. - Areas with minimal disturbance can be ripped and allowed to naturally re-vegetate. This excludes sloped areas and re-vegetation must be monitored to ensure that alien invasive plant species do not colonies the disturbed areas. - If natural re-vegetation is unsuccessful, corrective action should be taken, including seeding and planting by a specialist as stipulated in the EMP. *Pollutants released during service and construction* - In case of emergencies or unforeseen events, the problem must be remediated immediately and any spillage into any watercourses be reported to the Department of Water Affairs. The soil must be stabilized (import additional topsoil if necessary) and re-vegetated as soon as possible. Re- vegetation should include seeds from the adjacent grassland and any rescued protected plants and/or						

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
plants of conservation concern that might have been impacted. - Remove all project-related material/support equipment immediately on completion of any construction phases. *Invasive and alien species spreading* - Appoint a specialist in invasive species control, eradication, management and monitoring. Identified invasive species should be removed prior to construction. This will prevent seed spreading into disturbed soils or to downstream areas. - Mechanical removal is the preferred control mechanism using machinery depending on how congested the area is and this should be a continuous Programme. Biological eradication mechanisms will work, but requires an ecological specialist for population blooming management. - A register of the methods used, dates undertaken, and herbicides (if used) and dosage used must be kept and available on site. The register must include incidents of poisoning or spillage.						

8.1.9 Visual Impact

Impact Management Outcome:
Minimise visual impacts of the transmission line and associated infrastructure on the surrounding landscape character and sensitive visual receptors.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General - Where areas are going to be disturbed through the destruction of vegetation, for example the establishment of the construction camp, the vegetation occurring in the area to be disturbed must be salvaged and kept in a controlled environment such as a nursery, for future re-planting in the disturbed areas as a measure of rehabilitation.	Contractor ECO	Identify and salvage vegetation from areas to be disturbed before commencement; establish temporary nursery to store salvaged plant material; replant salvaged and compatible indigenous vegetation in disturbed areas during and after construction; document all salvage and replanting activities	Pre-construction (vegetation salvage before disturbance); during construction (nursery maintenance); post-construction (replanting within one growing season)	ECO; Visual Impact Specialist	During vegetation clearance; at completion of replanting; at practical completion	Vegetation salvage records; nursery establishment and maintenance records; replanting records; photographic records (before and after disturbance); ECO inspection reports

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Transmission towers - The preferred type of tower is the compact cross-rope suspension tower. This tower type is the most permeable and creates an extremely low degree of visual obstruction. - Avoid changing the alignment's direction too often in order to minimise the use of the self-supporting strain tower. This tower type is the most visually intrusive as the steel lattice structure is denser than the other two tower types, hence creating more visual obstruction. - Rehabilitate disturbed areas around pylons as soon as practically possible after construction. This should be done to restrict extended periods of exposed soil.	NTCSA Design Team; Contractor; ECO	Select compact cross-rope suspension tower as preferred tower type; minimise direction changes in alignment to reduce use of self-supporting strain towers; rehabilitate all disturbed areas around pylons as soon as practically possible after construction to restrict exposed soil periods	Design phase (tower type selection and alignment optimisation); during and immediately post-construction (rehabilitation)	ECO; Visual Impact Specialist	During construction; at practical completion	Tower type selection documentation; alignment design records; ECO inspection reports; rehabilitation records; photographic records showing rehabilitated pylon bases
Access routes - Make use of existing access roads where possible. - Where new access roads are required, the disturbance area should be kept to a minimum. A two-	Contractor; ECO	Use existing access roads wherever possible; limit new road footprint (two-track dirt	Pre-construction Construction	ECO	Weekly during construction; at construction completion	As-built access route plans; ECO inspection reports; photographic records; road footprint measurements; design rationale for route placement on file

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
track dirt road will be the most preferred option. - Locate access routes so as to limit modification to the topography and to avoid the removal of established vegetation. - Avoid crossing over or through ridges, rivers, pans or any natural features that have visual value. This also includes centres of floral endemism and areas where vegetation is not resilient and takes extended periods to recover. - Maintain no or minimum cleared road verges. Access routes should be located on the perimeter of disturbed areas such as cultivated/fallow lands as not to fragment intact vegetated areas. - If it is necessary to clear vegetation for a road, avoid doing so in a continuous straight line. Alternatively, curve the road in order to reduce the visible extent of the cleared corridor.		preferred); avoid ridges, rivers, pans and visually sensitive natural features; locate routes on perimeter of cultivated or fallow lands to avoid fragmenting intact vegetation; curve new roads through vegetation to reduce visible corridor extent; maintain minimum cleared verges			

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
CLEARED SERVITUDES - Locate the alignment and the associated cleared servitude so as to avoid the removal of established vegetation. - Avoid a continuous linear path of cleared vegetation that would strongly contrast with the surrounding landscape character. - Feather the edges of the cleared corridor to avoid a clearly defined line through the landscape.	Contractor; ECO	Minimise vegetation removal to that required for operational purposes; feather the edges of the cleared corridor to blend with surrounding landscape; avoid continuous linear clearance that contrasts strongly with the landscape; implement a vegetation clearance method statement before commencement	During vegetation clearance and construction activities	ECO; Visual Impact Specialist	During clearance activities; at completion of clearance and establishment	Vegetation clearance method statement on file; ECO inspection reports; photographic records showing edge feathering and corridor appearance; visual impact specialist sign-off
Construction camps and lay down yards - If practically possible, locate construction camps in areas that are already	Contractor; ECO	Site construction camps and lay-down yards in already-	Pre-construction	ECO	Monthly inspection during construction;	Site selection rationale and approval on file; shade cloth installation photographic records; ECO monthly inspection

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
disturbed or where it isn't necessary to remove established vegetation like for example naturally bare areas. - Utilise existing screening features such as dense vegetation stands or topographical features to place the construction camps and lay-down yards out of the view of sensitivity visual receptors. - Keep the construction sites and camps neat, clean and organised in order to portray a tidy appearance. - Screen the construction camp and lay-down yards by enclosing the entire area with a dark green or black shade cloth of no less than 2m height. - Keep the construction camps away from existing residents and especially lodges and tourist venues.		disturbed or naturally bare areas; use existing vegetation and topography for visual screening; enclose entire camp and lay-down areas with dark green or black shade cloth of minimum 2 m height; maintain neat, clean and organised site appearance; locate camps away from residential areas, lodges and tourist venues			at practical completion	reports; complaints register

8.1.10 Social Impact

Impact Management outcome: Maximise the social benefits and minimise negative impacts on the affected communities

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Impact Management outcome: Property-level access and movement are managed in a manner consistent with requirements agreed with landowner / occupier						
All affected farm portions within the deviation area where construction access is required – A **property-specific access protocol** must be prepared for each affected property before any site works commence. The protocol must record approved access routes, approved gates, lock / key arrangements where relevant, no-go areas, property-specific movement restrictions, and any agreed conditions relating to stock, crops, game, fencing or sensitive	Holder of EA; Contractor; Site Manager	Prepare a short property-specific access sheet and site map for each property and include it in the EMPr file and contractor induction pack	Before commencement on each property	ECO; Developer Site Supervisor	Before access to each property and during routine inspections	Signed property-specific access protocol; induction records; site maps; EMPr file

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
infrastructure. No contractor access may occur until the protocol has been confirmed and communicated to site personnel.						
Impact Management outcome: Occupiers / tenants are informed in advance and not excluded from site-related communication						
Nooitgedacht 69/0 and Nooitgedacht 69/3, and any other state-owned land with occupiers / tenants – No access to affected state-owned land may occur until the relevant state representative has been contacted and lawful occupiers / tenants who may be affected have been informed of the proposed works, timing, access arrangements and grievance contact details. Where required, a sensitisation meeting	Holder of EA; Contractor; Land access / stakeholder liaison representative	Engage the relevant department representative and document communication with occupiers / tenants before construction access is taken	Before commencement on state-owned affected land	ECO; Developer Site Supervisor	Prior to construction access and during any follow-up engagement	Record of contact with department; attendance register / notices; stakeholder communication log

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
or equivalent notification process must be undertaken prior to construction.						
Impact Management outcome: Livestock and game disturbance, escape and related operational disruption are avoided as far as reasonably possible						
Properties used for livestock and / or game farming, including those where stock or game movement may be affected – A **farm-specific livestock / game management method statement** must be prepared where works may affect livestock or game. This must include temporary stock-control measures where required, gate discipline, restrictions on worker movement outside approved areas, arrangements for stock movement through or around active work areas, and procedures	Contractor; Site Manager	Include livestock / game measures in property method statements and contractor induction; implement temporary controls where required	Before commencement on relevant properties and throughout active works	ECO; Landowner / occupier liaison through Site Manager	Daily during active works on relevant properties; confirm at site meetings	Approved method statement; induction records; daily site records; complaint / incident register

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
prohibiting the chasing, harassment or disturbance of livestock or game.						
Impact Management outcome: Construction remains within the negotiated and socially acceptable footprint						
Goedgedacht 27 IQ/1, Klipgat 18 IQ/8, and any other properties where servitude position or pylon placement is subject to specific negotiated constraints – Before any clearing, excavation or foundation works commence, the approved centreline, tower positions, temporary work areas and access routes must be pegged and verified against negotiated servitude constraints. Any property-specific limitation relating to offset from boundaries, exclusion of pylons, or gate location must be reflected on the	Surveyor; Contractor; Site Manager	Peg and verify all relevant construction footprints in the field and reflect these on layout drawings issued to the contractor	Before commencement of works on constrained properties	ECO; Developer Site Supervisor	Prior to construction and during routine compliance inspections	Pegging record; survey drawings; signed verification note; photographic record

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
construction layout. No deviation from the agreed footprint may occur unless separately approved.						
Impact Management outcome: Project-specific veldfire risk is proactively managed in the agricultural receiving environment						
Deviation area generally, with particular application where veldfire risk is high – In addition to the general fire prevention measures in the Generic EMPr, a deviation-specific veldfire readiness protocol must be prepared for the construction phase. This must identify local emergency contacts, property-specific response arrangements where relevant, communication steps in the event of fire, and the conditions under which high-risk activities must be	Contractor; Site Manager; Holder of EA	Prepare a deviation-specific veldfire readiness protocol and brief all site personnel before works commence	Before construction and throughout the fire-risk season / active works period	ECO; Developer Site Supervisor	Confirm before construction; inspect during active works and high-risk periods	Fire readiness protocol; induction records; emergency contact list; site inspection records

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
suspended during periods of elevated fire danger. Where required by site conditions, dedicated firefighting capability must be immediately available during active works in velded areas.						
Impact Management outcome: Sensitive farm infrastructure and pre-existing property condition are verified before works begin						
All affected properties before site entry – A joint pre-construction walkdown and condition verification must be undertaken with the affected landowner / occupier representative before works commence on each property. The walkdown must identify fences, gates, tracks, pipelines, water points, culverts and other relevant	Contractor; Site Manager; Landowner / occupier representative	Conduct a joint site walk and compile a brief condition record with photographs	Before commencement on each property	ECO	Prior to construction on each property	Signed walkdown record; dated photographs; infrastructure condition log

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
infrastructure or sensitive features within or near the work area, and record their condition photographically.						
Impact Management outcome: Disturbed areas are properly handed back and outstanding property-related issues are closed out promptly						
All affected properties after completion of works on each property – On completion of works on each property, a joint property close-out inspection must be undertaken with the affected landowner / occupier representative to confirm reinstatement of disturbed areas, the condition of gates, fencing, tracks and other infrastructure, and closure of any outstanding complaints or damage claims. Any outstanding corrective action	Contractor; Site Manager; Holder of EA representative	Undertake a joint handover inspection and document any final remedial actions required	On completion of works on each property	ECO; Developer Site Supervisor	Once per property at practical completion, with follow-up if required	Signed close-out record; photographic record; corrective action log; claims register

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
must be recorded with agreed timeframes.						
Impact Management outcome: Operational access is managed transparently and with minimum avoidable disruption to landowners / occupiers						
Operational phase - all affected properties requiring routine or emergency maintenance access – A simple operational access procedure must be adopted for the deviation section. For planned maintenance, affected landowners / occupiers should receive reasonable advance notice of intended access. Maintenance teams must use agreed gates and routes. Where emergency access is required, landowners / occupiers must be informed as soon as reasonably practicable after access is taken.	Holder of EA; Operations / maintenance team	Include access procedure in operational maintenance planning and contractor / staff instructions	During operation and maintenance phase	Holder of EA representative; ECO where applicable to maintenance audits	Ongoing, as and when maintenance access occurs	Maintenance access log; communication records; complaints register

9 TOWER-SPECIFIC MITIGATION MEASURES

9.1 Archaeology

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
All Towers	No archaeological resources found	Low	See Section 8.1.2	*N/A*	*N/A*

9.2 Avifauna

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
All Towers	Presence of raptor species within the development area.	Low	Given the voltage size, no construction mitigatory requirements for the Pluto-Mahikeng 400kV Power Line are recommended.	*N/A*	*N/A*
Minimum Marking Requirements (All spans for T110-T111, T491-T521)	Rivers, drainage lines, flood plains, pans, dams, grassland, vulture roosts, collision mortalities.	Low–Medium	- Install Bird Flight Diverters (BFDs) on both earth wires between the towers. - Install BFDs on the full span length on earthwires at 10 m intervals. - Use alternating light and dark colours to provide contrast against both dark and light backgrounds.	**Responsible Person:** • Contractor; NTCSA Construction Manager **Method of Implementation:** • Procure and install BFDs in accordance with Eskom Unique Identifier 41-335 and the Mitigation Matrix; provide installation records to ECO	**Responsible Person:** • ECO **Frequency:** • Inspection at completion of stringing works on each span; annual patrol inspection during operations **Evidence of Compliance:** • BFD installation records; photographic

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
			Refer to Eskom Transmission Bird Collision Prevention Guideline (Unique Identifier 41-335). – Install devices as soon as conductors and earthwires are strung.	**Timeframe:** • From commencement of stringing works through to completion of construction	evidence; ECO compliance report; Mitigation Matrix sign-off
All Towers & Spans	Sensitive avian habitats along the Pluto-Mahikeng 400kV Power Line alignment.	Low	– Avoid removal of sensitive vegetation types. – Strictly implement the recommendations of the botanical study, particularly regarding limitation of the construction footprint. – Restrict construction activity to the immediate infrastructure footprint. – Manage all construction activities according to generally accepted environmental best practice. – Rehabilitate all temporarily disturbed areas following construction per the site rehabilitation plan. – Maximise use of existing access roads; minimise construction of new roads.	**Responsible Person:** • Contractor; NTCSA Construction Manager **Method of Implementation:** • Implement footprint restrictions as per botanical recommendations and EMPr; brief all construction personnel on no-go areas **Timeframe:** • Throughout the construction phase	**Responsible Person:** • ECO **Frequency:** • Weekly site inspections during construction **Evidence of Compliance:** • ECO inspection reports; photographic records; rehabilitation completion certificates
All Towers	Nesting, streamers and faecal pollution causing degraded quality of electrical supply.	Low	– Install bird guards above insulator strings on supporting strain, suspension and Guyed-V suspension structures per Eskom Transmission Bird Perch Guidelines (Unique Identifier 41-332).	**Responsible Person:** • Contractor; NTCSA Construction Manager **Method of Implementation:**	**Responsible Person:** • ECO; NTCSA Line & Servitude Manager **Frequency:**

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
			– Fit bird guards to earth peaks of structures to prevent roosting and reduce collision risk.	• Procure and install bird guards in accordance with Eskom Unique Identifier 41-332; provide installation records to ECO **Timeframe:** • During construction phase; prior to energisation of the line	• Inspection at completion of tower erection on each structure; annual inspection during operations **Evidence of Compliance:** • Bird guard installation records; photographic evidence; ECO sign-off checklist
All Spans (Operational)	Presence of suitable habitat (rivers, waterbodies, grassland, roost locations) near the power line during operations.	Low	– NTCSA Line and Servitude Managers to report all bird collisions encountered during routine line patrols to the Eskom–EWT Strategic Partnership. – EWT Strategic Partnership to provide additional site-specific mitigation recommendations if required. – Maintain all Bird Flight Diverters for the duration of the operational lifespan of the power line.	**Responsible Person:** • NTCSA Environmental Manager; Line & Servitude Manager **Method of Implementation:** • Integrate bird collision reporting into routine patrol procedures; establish reporting protocol with EWT Strategic Partnership **Timeframe:** • For the duration of the operational lifespan of the Pluto-Mahikeng 400kV Power Line	**Responsible Person:** • NTCSA Environmental Officer; Eskom–EWT Strategic Partnership **Frequency:** • Ongoing during routine line patrols; annual review of collision data **Evidence of Compliance:** • Patrol records; bird collision reports submitted to EWT; BFD maintenance records; annual compliance report
All Towers (Operational)	Presence of active Red List raptor	Low	– NTCSA Line and Servitude Managers to report raptor nests	**Responsible Person:**	**Responsible Person:**

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
	nests during the operational phase.		identified during patrols to the Environmental Manager. – Environmental Manager to notify the Eskom–EWT Strategic Partnership for site-specific guidance. – Implement recommended buffer distances and reschedule maintenance activities where required. – Carry out all operational and maintenance activities according to generally accepted environmental best practices.	• NTCSA Environmental Manager; Line & Servitude Manager **Method of Implementation:** • Integrate nest reporting into routine patrol procedures; implement EWT recommendations as received **Timeframe:** • For the duration of the operational lifespan of the Pluto-Mahikeng 400kV Power Line (deviation).	• NTCSA Environmental Officer; Eskom–EWT Strategic Partnership **Frequency:** • Ongoing during routine patrols; specialist oversight as required when active nests are confirmed **Evidence of Compliance:** • Patrol records; nest identification reports; correspondence with EWT; maintenance schedule amendments
All Towers (Operational)	High density of raptors and corvids nesting on tower structures posing a quality-of-supply risk.	Low	– Unoccupied nests posing a quality-of-supply risk may be removed without a permit. – Do not remove nests containing eggs, chicks or adult birds without obtaining the required permit. – Notify the Eskom–EWT Strategic Partnership when occupied nests require removal to arrange for translocation or safe removal.	**Responsible Person:** • NTCSA Environmental Manager; Line & Servitude Manager **Method of Implementation:** • Follow NTCSA permit application procedure for occupied nest removal; coordinate translocation with EWT Strategic Partnership **Timeframe:**	**Responsible Person:** • NTCSA Environmental Officer; Eskom–EWT Strategic Partnership **Frequency:** • As required when nests are identified during patrols **Evidence of Compliance:** • Nest removal records; permit documentation; EWT correspondence;

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
				• For the duration of the operational lifespan of the Pluto-Mahikeng 400kV Power Line; as required when nests are identified	photographic evidence

9.3 Freshwater

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
T491-T521	Water resources- general requirements applicable across the entire alignment.	Moderate – Very High	**Water Use Licence** – Submit a Water Use Licence Application (WULA)/ General Authorisation (GA) application to the Department of Water and Sanitation (DWS) for activities under Section 21(c) and Section 21(i). – Avoid high-sensitivity features (T493 and T500–T501) where possible; where unavoidable, implement strict mitigation and specialist oversight. **Buffer Zones & No-Go Areas** – Clearly demarcated no-go areas shall be maintained throughout the construction period;	**Responsible Person:** • NTCSA Environmental Manager; Contractor; NTCSA Construction Manager; Aquatic Specialist **Method of Implementation:** • Submit WULA/ GA application prior to construction commencement; implement buffer zones and construction management measures as per EMPr; appoint ECO and Aquatic Specialist	**Responsible Person:** • ECO; Aquatic Specialist **Frequency:** • Weekly site inspections during construction; specialist inspections at high-sensitivity crossings **Evidence of Compliance:** • WUL/ GA approval and conditions on file; ECO inspection reports; specialist monitoring reports; photographic records; rehabilitation completion sign-off

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
			– Construction activities shall remain within approved work areas and servitudes; – Disturbed areas shall be rehabilitated as soon as practicably possible following construction; – Erosion and sediment control measures shall be implemented where necessary; – Hydrocarbon spills and contamination shall be prevented through proper storage and handling of hazardous substances; – Construction waste shall be removed regularly and disposed of at approved facilities.	**Timeframe:** • WULA/ GA: pre-construction phase; all other measures: throughout the construction phase	
T493	Seasonal wetland	Moderate	– The wetland buffer area shall be treated as a no-go area during construction; – Construction personnel and vehicles shall remain within approved construction areas and access routes; – No excavation, vegetation clearing, or dumping shall occur within the wetland buffer area.	**Responsible Person:** Contractor **Method of Implementation:** Demarcate the wetland buffer as a no-go area; confine personnel and vehicles to approved areas and access routes; prohibit excavation, clearing and dumping within the buffer.	**Responsible Person:** ECO. **Frequency:** Weekly during construction. **Evidence of Compliance:** ECO audit reports; demarcation photographs.

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
				Timeframe: Prior to and during construction.	
T500–T501	Mooi River	Very High	– No construction activities shall occur within the delineated aquatic feature; – No stockpiling, batching, refuelling, or servicing of equipment shall occur within or adjacent to the aquatic buffer area; – Construction access shall be restricted to approved routes only; – Temporary disturbance outside the demarcated work areas shall be prohibited. – The aquatic buffer area shall be clearly demarcated onsite prior to commencement of construction activities.	**Responsible Person:** Contractor **Method of Implementation:** Demarcate the wetland buffer as a no-go area; confine personnel and vehicles to approved areas and access routes; prohibit excavation, clearing and dumping within the buffer. **Timeframe:** Prior to and during construction.	**Responsible Person:** ECO. **Frequency:** Weekly during construction. **Evidence of Compliance:** ECO audit reports; demarcation photographs.

9.4 Terrestrial Biodiversity

Tower No.	Description	Sensitivity	Management Actions	Implementation	Monitoring
All Towers	Provincially protected geophytes; Boophane disticha, Gladiolus sericeovillosus and Hypoxis hemerocallidea	High	Apply for the Provincial flora permit at North West Department of Economic Development, Environment, Conservation and Tourism (NW DEDECT).	**Responsible Person:** EAP **Method of Implementation:** Submit an application to DEDECT for the geophytes that must be cleared/ relocated. **Timeframe:** Prior to construction.	**Responsible Person:** ECO. **Frequency:** Once off **Evidence of Compliance:** Flora permit

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

APPENDIX 2: EAP'S CV

CURRICULUM VITAE BRENDA MAKANZA

Role: Principal EAP/ECO

Name of Firm: Vhubvo Consultancy

Name of Staff: Brenda Makanza

Date of Birth: 24 March 1981

Total Years of Experience: 20 years

EDUCATION:

Qualification	Institution	Date obtained
Incident Investigation- Level 3	NOSA	2020
ISO 45001:2018 & ISO 14001:2015: Implementation & Audit	NOSA	2020
SAMTRAC	NOSA	2020
Post Graduate Diploma: Geoinformatics (GIS)	Universetat Salzburg	2016
Bachelor of Science (Hons) Environmental Science	National University of Science and Technology	2004

MEMBERSHIP OF PROFESSIONAL ASSOCIATIONS:

Professional Associations	Membership
SACNASP	Pr. Sci. Nat (Reg No.: 400016/17)
EAPASA	Environmental Assessment Practitioner (Reg No. 2019/1542)
WISA	Member

OTHER TRAINING:

- Project Estimating and Procurement – University of Pretoria.
- Integrated Water Resources Management- Saxon University, The Netherlands

EMPLOYMENT RECORD:

Vhubvo Consultancy
Senior Environmental Scientist/ECO – January 2023 to Current

DIGES Group
Senior Environmental Scientist/ECO – February 2009 to December 2022

Ministry of Environment, Water & Climate
SABSP Project Assistant- March 2005 to Jan 2009

IUCN: The World Conservation Union
Ecosystems Programme: Aug 2002- July 2003

PROFESSIONAL SKILLS

Skill	Competency	Duration
Project Management	Advanced	14 years
Environmental Monitoring	Advanced	8 years
Environmental Impact Assessment	Advanced	14 years
Water Use Licence Application	Advanced	10 years
GIS and Map Production	Advanced	11 Years
Tree Cutting Permit	Advanced	8 Years

SOME PROJECTS AND PROFESSIONAL TECHNICAL EXPERIENCE

Walkdowns and CEMPr

- **2014:** Walkdown and CEMPr for the Ariadne-Venus 400kV powerline within various Municipalities in KZN Province
- **2016:** Walkdown and compilation of CEMPr for the Medupi Witkop 400kV powerline in various Municipalities, Limpopo Province.

Basic Assessment

- **EAP, 2010:** EMP and Basic Assessment Report for Establishment of Seshego Cemetery within Polokwane Local Municipality.
- **EAP, 2010:** EMP and Basic Assessment Report for Upgrading of gravel road from Praktiseer to Taung village within Greater Tubatse Local Municipality
- **EAP, 2014:** Basic Assessment for the construction of Klarinet Bridge within Emalahleni Local Municipality.
- **EAP, 2015-2017:** Proposed construction of a 132kV power line from PPRUST substation to the proposed Akanani substation within Mogalakwena Local Municipality.
- **EAP, 2015-2018:** Basic Assessment for the establishment of Sakhelwe extension within Emakhazeni Local Municipality.
- **Project Manager, Reviewer. 2020.** Proposed Southgate Township Establishment within Polokwane Local Municipality**.**

Scoping & Environmental Impact Assessments

- **EAP, 2010-2011:** Proposed construction of a 30 km 132kV power line from Amandla substation within Elias Motsoaledi Local Municipality, Greater Sekhukhune District to Kwaggafontein substation within Thembisile Hani Local Municipality, Nkangala District.
- **EAP, 2010-2011:** Proposed construction of a 45 km 132kV power line from Jane Furse ss to the new Mamatsekele ss within Makhuduthamage Local Municipality, Greater Sekhukhune District.
- **EAP, 2011-2012:** Proposed Koedoesdoorns township establishment within Thabazimbi Local Municipality;
- **EAP, 2011-2012:** Proposed Madala township establishment within Emakhazeni Local Municipality.
- **EAP, 2014-2016:** Proposed Rustenburg Strengthening Project within Rustenburg Local Municipality.
- **EAP, 2016-2018:** Proposed construction for the Limpopo East Strengthening Corridor within Limpopo Province.
- **Reviewer, 2018:** Proposed construction of Hyperrama pipeline within COE.

Amendments

- **EAP, 2013 and 2014:** First and second amendment for the 132kV Mamatsekele poweline within Limpopo Province.

Water Use Licence Applications

- **EAP, 2014:** WULA for Klarinet Ext5 and Ext6 Bridge Construction.
- **EAP, 2017:** WULA for construction of 400kV Ariadne-Venus power line within KZN province.
- **EAP, 2019:** General Authorisation for the construction of Hyperrama pipeline within COE.

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Monitoring

- **Lead Auditor, 2019-2022:** Landfill auditing and water monitoring at City of Ekurhuleni's operational and closed landfills.
- **Lead Auditor, 2017-2019:** Landfill auditing and water monitoring at City of Ekurhuleni's operational and closed landfills.

Curriculum Vitae of Frank Mhandu

Cell No: 071 054 3325
Email: frank@vhubvo.co.za

PERSONAL DETAILS

Full Names	: Frank Mhandu
Birth date	: 12 February 1983
Gender	: Male

ACADEMIC ACHIEVEMENTS

Qualification	: MSc Conservation Biology
Institution	: Bindura University
Obtained	: 2013
Qualification	: Bachelor of Environmental Science
Institution	: Bindura University
Obtained	: 2007

PROFESSIONAL MEMBERSHIP

South African Council for Natural Scientific Professions: Pr. Sci.Nat, Reg. No. 120638
EAPASA: Registered EAP Reg. No.: 2020/268

CURRENT EMPLOYMENT

Organisation	: Vhubvo Consultancy CC
Position held	: Environmental Assessment Practitioner/ Environmental Control Officer
Duration	: 2021 January to date
Duties	: Conduct Site Assessments
	: Compiling Biodiversity and Wetland Delineation Reports
	: Conduct environmental monitoring
	: Conduct environmental audits
	: Compiling water use license applications
	: Compiling waste management license applications
	: Drafting waste management plans

PAST WORK EXPERIENCE

Organisation	: Masingita Geo Environmental Consultants
Position	: Environmental Assessment Practitioner
Duration	: 2015-2017
Organisation	: Bindura University
Position	: Lecturer
Duration	: 2008-2017

OTHER RELEVANT PROJECTS

Some of the projects I have undertaken during my years' experience in the field of Environmental Management are listed below:

- Proposed demarcation of 200 sites at the village of Jimmy Jones on farm Malamulele 234 LT within Thulamela Local Municipality of Vhembe District, Limpopo Province.
- Proposed formalisation of residential sites, and demarcations of new sites in the village of Malale on Reminder of Portion 1 of the Farm Feskaal No. 85 – MT within Musina Local Municipality of Vhembe District, Limpopo Province.
- Proposed demolition of a structure for labour centre establishment on Erf 346 Bochum Extention 3 at Senwabarwana town within Blouberg Local Municipality of Capricorn District. Limpopo Province.
- Proposed demarcation of residential sites at Thohoyandou Block J, which is located within the territory of Thulamela Local Municipality of Vhembe District in Limpopo Province.
- Proposed residential sites demarcation at Lwamondo-Tshivhale Village which is located within the territory of Thulamela Local Municipality in the Vhembe District of Limpopo Province.
- 220km Medupi-Witkop powerline protected tree species walk-down, Limpopo Province
- 24 ha Biodiversity Assessment for South 32 Khutala Mine (formerly BHP Bilton)
- Biodiversity Assessment & Offset Assessment for the proposed Mpumalanga International Fresh Produce Market (MIFPM), Mbombela Municipality, Mpumalanga Province
- 120km biodiversity walk-down, Barberton , Mpumalanga Province
- Flora Assessment for the proposed 132kV powerlines in Nkomazi, Nkomazi Municipality, Mpumalanga Province
- 88km powerline protected species assessment walk down, Tzaneen, Limpopo Province
- Flora Assessment ,Wetland Delineation & Assessment for the proposed upgrading of an 88KV powerlines in Klipgat, Mabopane, Gauteng Province
- Biodiversity Assessment & Wetland Delineation for the proposed Agrihub in Mkhondo Local Municipality, Mpumalanga Province.
- Water Use Licence Application for the proposed construction of Segakwaneng bridge under the Moses Kotane Local Municipality ,North West Province

- Water Use Licence Application for the proposed construction of Mabodisa bridge under the Moses Kotane Local Municipality ,North West Province