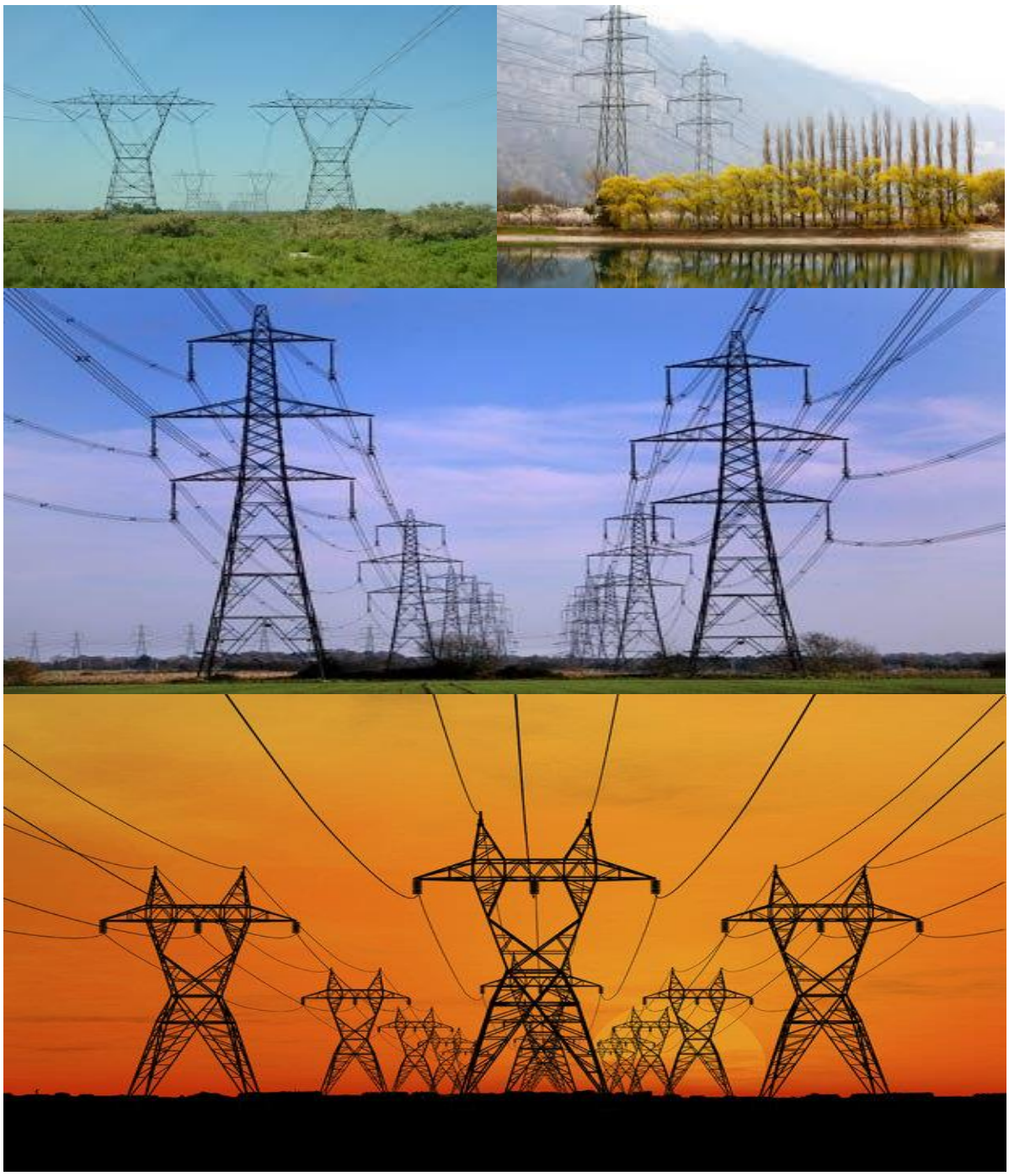
APPENDIX 1

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

Part	Section	Heading	Content
			template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of Part C. 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.

Part	Section	Heading	Content
			This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
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 The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS

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

Responsible Person (s)	Role and 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.
developer Environmental Officer	Role

Responsible Person (s)	Role and Responsibilities
(dEO)	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,

Responsible Person (s)	Role and Responsibilities
	EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

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;	ECO / cEO / dEO	Environmental awareness training workshops	Pre-construction Construction	ECO dEO	Once-off	Attendance register and training minutes / notes for the record
– The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course;	Contractor	Training sessions	Pre-construction Construction	ECO dEO	As and when required	Attendance register and training minutes / notes for the record
– Refresher environmental awareness training is available as and when required;	ECO / cEO / dEO	Refresher workshops	Construction phase	ECO dEO	As and when required	Attendance register and training minutes / notes for the record
– 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;	ECO / cEO / dEO	Training workshops	Construction phase	ECO dEO	Continuous	Attendance register and training minutes / notes for the record
– The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum:	Contractor	Develop and place appropriate posters at key	Pre-construction Construction	ECO dEO cEO	Continuous	Photographic record

a)Safety notifications; and b) No littering.		locations				
– 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; 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.	ECO / cEO / dEO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO dEO	Prior to commencement of training	Environmental awareness training material requirement checklist
– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO / cEO / dEO	Record keeping (hard copy and e-filing)	Construction	ECO dEO	Continuous	Completed and up to date filing system with proof of training
– Educate workers on the dangers of open and/or unattended fires;	cEO / dEO	Environmental awareness	Pre-construction Construction	ECO dEO	Prior to commencement	Environmental awareness

		training material which covers the dangers of open and/or unattended fire			of training	training material requirement checklist
– A staff attendance register of all staff to have received environmental awareness training must be available.	ECO / cEO / dEO	Record keeping (hard copy and e-filing)	Construction	ECO dEO	Continuous	Completed and up to date filing system with proof of training
– Course material must be available and presented in appropriate languages that all staff can understand.	ECO / cEO / dEO	Filing of training material (in appropriate language)	Construction	ECO dEO	Continuous	Environmental awareness training material requirement checklist that includes training in the relevant language

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;	Contractor cEO	Development of an appropriate method statement	Pre-construction	ECO dEO	Once-off	Method Statement that meets this requirement
– Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through;	ECO	Approval by ECO	Pre-Construction	ECO	Once-off	Site Layout Map indicating approved construction camp
– Sites must be located where possible on previously disturbed areas;	DPM	Approval by ECO	Pre-Construction	ECO	Once-off	Site Layout Map indicating approved construction footprint
– The camp must be fenced in accordance with	DPM	Design and	Pre-construction	ECO	Continuous	Fencing meets

Section 5.5: Fencing and gate installation; and		implementation of fencing as per Section 5.5. of the EMPr.	Construction	dEO		requirement of Section 5.5. of the EMPr
– The use of existing accommodation for contractor staff, where possible, is encouraged.	A local Contractor will be employed and there will be no need for staff accommodation on site					

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;	dEO / cEO Contractor	Pre-construction walk through	Pre-construction	ECO	Once-off	Site Layout Map indicating restricted access areas
– 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	dEO / cEO Contractor	Signage and fencing around the restricted areas	Placement of temporary barriers around access restricted areas	ECO	Once-off	Access restricted areas are closed-off through temporary barriers and barriers maintained to a sufficient standard
– Unauthorised access and development related activity inside access restricted areas is prohibited.	Contractor / dEO / cEO	Erect appropriate temporary barriers around	Construction	ECO	Continuous	Audit checklist compliance

		access restricted areas and provide clear signage of restricted status				

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;	n/a – The landowner is Eskom.					
– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;	n/a – The landowner is Eskom.					
– The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;	n/a – The landowner is Eskom.					
– 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	Contractor	Undertake maintenance activities on the internal roads	Construction phase	cEO / ECO	Weekly	Photographic evidence of road condition pre-construction,

		within Eskom property used for construction				record of implementation and effectiveness of maintenance activities
– All contractors must be made aware of all these access routes.	dEO / cEO	Site Layout Map indicating all access routes	Pre-Construction Construction	ECO	Once-off	Site Layout Map available on site
– Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense;	Contractor	All access routes developed that are not in-line with the access route agreements must be closed	Construction and Rehabilitation	ECO	As and when the deviation occurs	Photographic record of the closure of access roads and re-vegetation
– Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads;	Contractor Eskom maintenance personnel	Existing access routes to be used must be specified and the development of new roads must be avoided as far as possible	Construction and operation	cEO Operation and maintenance team	Continuous	Implementation of the approved layout
– 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	n/a – internal roads under the ownership of Eskom will be used.					

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	DPM and Contractor	Design access roads to follow fence lines and avoid vegetated areas	Pre-construction	ECO	Once-off during the design phase Once-off during the construction phase	Implementation of approved Site Layout Plan
– Access roads must only be developed on pre-planned and approved roads.	Contractor	Approved Site Layout Plan	Construction	ECO	Once-off during the design phase Weekly during the construction phase	Implementation of approved Site Layout Plan

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;	Contractor	Identify and inform all relevant staff of the existing gates to be used	Pre-construction Construction	dEO	Monthly	Existing gates are utilised on a frequent basis and only limited new access gates are developed
– Existing and new gates to be recorded and documented in accordance with **section *4.9: photographic record***;	DPM DSS dEO cEO	Existing and new gates will be recorded and documented as per the requirements of section 4.9	Construction	ECO	Once, when the construction of all new gates have been completed	Photographic record of the existing and new gates as per the requirements of section4.9
– All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	Contractor	Ensure all relevant gates are fitted with locks and are always locked	Construction Operation	ECO Operation and maintenance team	Bi-weekly (every second week)	All gates are locked and no complaints from Eskom are received in this regard
– 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;	dEO	Install new gates where required with approval from Eskom	Construction	ECO	Once, prior to construction and during the construction phase, as and when	New gates are installed where the power line crosses fences

					required	
– 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;	Contractor	Install gates in a manner so that there is a gap of no more than 100mm between the bottom of the gate and the ground	Construction	ECO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
– Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate;	Contractor	Implement a reinforced concrete sill beneath gates installed for jackal proofing	Construction	cEO	Once, during the erection of the gates during the construction phase	New gates installed as per the requirement
– Original tension must be maintained in the fence wires;	Contractor	Maintain original tension of fences through required activities	Construction	ECO	Monthly	No tension reduction on fence wires
– All gates installed in electrified fencing must be re-electrified;	Contractor	Electrify gates installed in electrified fencing	Construction	ECO	Once, during the erection of the gates during the construction	Gates installed in electrified fencing is electrified

					phase	
– All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities;	Contractor	Undertake maintenance activities on fences and barriers	Construction	ECO	Monthly	Photographic record of maintained fencing and gates
– 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;	Contractor	Fence construction camps, batching plants, hazardous storage areas and access restricted areas. Avoid sensitive flora	Construction	ECO	Once during the erection of fencing	Photographic record of fences erected
– Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the landowner.	dEO/ cEO Contractor	Obtain written approval from the relevant landowner where temporary fencing is required to restrict livestock movement	Construction	ECO	To be monitored as temporary fencing is required	Written approval to be provided by the dEO
– All fencing must be developed of high-quality material bearing the SABS mark;	Contractor	Make use of high-quality	Construction	cEO	To be monitored,	Use of high-quality materials for

		materials approved by SABS			as fencing is erected during the construction phase	fencing approved by SABS
– The use of razor wire as fencing must be avoided;	Contractor	Razor wire must not be sourced or used for the erection of fencing	Construction	ECO	To be monitored, as fencing is erected during the construction phase	Fences erected do not make use of razor wire
– 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;	DSS and Contractor	Ensure fenced areas are locked as required through the implementation of a formalized process.	Construction	cEO	Weekly and as and when required	Fences are locked and no complaints from Eskom are received.
– On completion of the development phase all temporary fences are to be removed;	Contractor	Removal of all temporary fences	At the end of the Construction Phase	ECO dEO	Once, following the completion of the construction phase	No temporary fences associated with the project is present following completion of the construction phase

– The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Contractor	Appropriate removal of all fence uprights	At the end of the Construction Phase	ECO dEO	Once, following the completion of the construction phase	No evidence of fence uprights

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;	n/a – there will be no abstraction of water					
– 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	n/a - there will be no abstraction of water					

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 / dEO / cEO in consultation with the ECO	Implement the required water conservation measures throughout onsite construction processes	Construction	ECO	Monthly, and as and when required	Successful implementation of water conservation

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;	Contractor dEO cEO	Implement measures for the control and management of runoff	Construction	ECO	Weekly	No mismanagement of runoff or contaminated water due to the temporary concrete batching plant
– All spillage of oil onto concrete surfaces must be controlled by the use of an	Contractor and	Obtain approved	Construction	ECO	Monthly,	Availability of approved

approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	cEO	absorbent material and make use of licensed waste disposal facilities for disposal of oil				absorbent material at the construction site and proof of disposal of oil at licensed disposal facilities
– 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;	DPM in consultation with the ECO	Consultation as required. The necessary water quality testing must be undertaken prior to discharge.	Construction	ECO	As and when the need arises to discharge natural stormwater runoff and clean water	Proof of consultationbetwe en the DPM and ECO and the outcomes thereof to be provided. Proof of water quality testing and the results thereof.
– 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.	DPM in consultation with the ECO	Consultation between the DPM and the ECO to determine if water can be discharged directly into water bodies (where present). The necessary water quality testing must be undertaken prior	Construction	ECO	As and when the need arises to discharge water	Proof of consultation between the DPM and ECO and the outcomes thereof to be provided. Proof of water quality testing and the results thereof.

		to discharge				

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;	Contractor dEO cEO	Procurement of sufficient waste receptacles to separate respective waste streams. Agreement with a registered landfill to accept the various waste streams of safe disposal.	Construction	ECO	Monthly	Implementation of the waste management plan and proof of waste management through proof of responsible disposal
– Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	Contractor	Provision of appropriate waste collection bins strategically	Construction	ECO	Weekly	Appropriate waste collection bins are available

		placed throughout the site				throughout the site Photographic record
– A suitably positioned and clearly demarcated waste collection site must be identified and provided;	DPM and Contractor	Identify an appropriate location for the waste collection site which must be clearly demarcated	Construction	ECO	Once-off, prior to the commencement of construction	A waste collection site is appropriately placed and demarcated
– The waste collection site must be maintained in a clean and orderly manner;	Contractor	Regular collection of waste and maintenance of the area must be undertaken asper the waste requirements for the project during construction	Construction	ECO	Weekly	The waste collection site is maintained and clean
– Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal;	Contractor	Provide separate and marked bins for the different waste types associated with the construction	Construction	cEO	Weekly	Separate waste bins on site for the different waste types

		phase				
– Staff must be trained in waste segregation;	cEO / dEO in consultation with the ECO	Include waste segregation as part of the environmental awareness training material.	Pre-construction Construction	ECO	Monthly, and as and when required	Environmental awareness training material requirement checklist
– Bins must be emptied regularly;	Contractor	Bins must be emptied before reaching total capacity and on a regular basis as required for the project	Construction	ECO	Monthly	No mismanagement of bins.
– General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company;	Contractor	Disposal of general waste at licensed waste disposal facilities must be undertaken as per the waste management plan	Construction	ECO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Hazardous waste must be disposed of at a registered waste disposal site;	Contractor	Disposal of hazardous waste at licensed waste	Construction	ECO	Monthly	Disposal certificates of disposal at licensed facilities to be provided

		disposal facilities must be undertaken as per the waste management plan				
– Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	Contractor	Obtain certificates for safe disposal of waste	Construction	ECO	Monthly	Disposal certificates of disposal at licensed facilities to be provided and filed as part of the filing system

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;	Contractor dEO cEO	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	Construction	ECO	Weekly	No incidents reported of spillage of pollutants into watercourses Photographic record
– In the event of a spill, prompt action must be taken to clear the polluted or affected	Contractor and	Develop a management	Construction	ECO	Weekly	Feedback must be provided by the

areas;	cEO	plan or process for implementation should a spill take place				contractor in terms of how the spill was handled and photographic evidence of the feedback must be provided and kept on record
– Where possible, no development equipment must traverse any seasonal or permanent wetland	Contractor dEO cEO	No-go areas are cordoned off with red danger tape around the seasonal and permanent wetlands	Construction	ECO	Weekly	No evidence of equipment in the no-go areas.
– No return flow into the estuaries must be allowed and no disturbance of the Estuarine Functional Zone should occur;	**n/a – the site is not located near estuaries.**					
– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;	Contractor dEO cEO	An approved method statement for access to towers within watercourses must be available at all times.	Construction	ECO	Weekly	Access to tower positions within the watercourses are as per the approved method statements.
– There must not be any impact on the long-term morphological dynamics of	DPM, cEO	Spill Contingency	Construction	ECO, dEO	All phases of a project	No incidents of accidental spillage

watercourses or estuaries;		Plan for accidental spillage of contaminants in a watercourse and ensure it is continuously monitoring	Operation		life-cycle i.e. construction, operation and decommissioning	of contaminants into the watercourses
– Existing crossing points must be favored over the creation of new crossings (including temporary access)	Contractor	Several new crossings will be established due to the numbers of drainage lines on the site. The approved method statement for construction within the crossings are to be implemented.	Construction	ECO	Monthly, as and when required	No signs of degradation of the watercourses
– When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works,	Contractor	Activities undertaken near watercourses must be in-line with these considerations	Construction	ECO	Monthly, as and when required	No signs of degradation of the watercourses

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.		and monitored				

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	cEO / dEO and	Demarcate areas of	Construction	ECO	Weekly, and as and	No unnecessary clearance of

left undisturbed;	Contractor	indigenous vegetation to be avoided before clearance is undertaken	Operation	Eskom Maintenance team	when required	indigenous vegetation is undertaken Photographic record
– Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;	Contractor	Demarcate areas containing protected or endangered species to be avoided by construction activities	Construction phase	ECO	Weekly, and as and when required	No signs of clearance of Protected and endangered plant species other that those permitted to be removed by the relevant authority
– 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;	Vegetation Ecologist	Protected Plant Search, Rescue and Relocation Plan	Pre-construction	ECO	Weekly until all Protected plants are relocated	Relocation of Protected Plant species is implemented as per the Plant Search, Rescue and Rehabilitation Plan.
– 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;	DPM	Permitting process is completed.	Pre-Construction	ECO	Once-off, prior to the commencemnt of construction	Permit from Northern Cape Department of Agriculture, Environmental Affairs, Rural

						Development and Land Reform is 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;	ECO	Environmental Audit Report provides details of the compliance with the conditions of the permit.	Construction	N/A	Continuous	Environmental Audit Checklist indicates compliance with conditions of the permit.
– Trees felled due to construction must be documented and form part of the Environmental Audit Report;	**n/a –Tree feeling is not applicable.**					
– Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris;	Contractor	Felled trees, vegetation cuttings and debris must be disposed of at a licensed waste disposal facility	Construction	ECO	Monthly	No felled trees, vegetation cuttings and debris are dumped in inappropriate locations and disposal certificates are available as proof of responsible disposal
– 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	DPM and Contractor	Appointment of a registered pest control operator	Construction Operation	ECO	As and when herbicide is required	Documented proof of appointment of registered pest control operators

trained;						
– A daily register must be kept of all relevant details of herbicide usage;	Contractor	Develop a daily register for the documentation of the details of herbicide usage	Construction	ECO	Monthly	Daily register provided by the herbicide controller
– No herbicides must be used in estuaries;	**n/a- the site does not occur in the vicinity of 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***.	Contractor cEO	Spatially demarcate Protected plant species and implement fencing as per Section 5.3	Construction	ECO	Once-off	Demarcation and fencing is as per Section 5.3
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;	Contractor in consultation with the DPM	Identify areas of vegetation not to be trimmed.	Construction and Operation	ECO Eskom maintenance team	Monthly	An indication of the areas where vegetation has not been trimmed or where vegetation has been removed from access roads must be provided.
– 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	Contractor	Clearing to be undertaken as per the requirements provided by	Construction	ECO	Monthly, and as and when required	Proof must be provided that areas agreed for clearance have been cleared.

		Eskom				
– 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;	Contractor	Alien plant removal must be undertaken as per the Alien Invasive and Open Space Management System	Construction Operation	ECO	Monthly, and as and when required	Records of alien plant clearance must be available.
– 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;	Contractor	Develop a procedure for the trimming of vegetation in terms of the listed requirements	Construction Operation	ECO Eskom Maintenance Team	Monthly, and as and when required	Records that trimming of vegetation complied with the listed requirements
– 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;	Contractor	Dispose of the debris in accordance with the Waste Management Plan	Construction Operation	ECO Eskom Maintenance Team	Monthly, and as and when required	Proof must be provided that the debris has been disposed off at a licensed waste disposal facility
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	Contractor	Develop a procedure for the cutting of vegetation for stringing purposes	Pre-Construction Construction	ECO	Once, prior to the commencement of construction	Proof of implementation of the procedure for cutting of vegetation for stringing purposes

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;	dEO / cEO Contractor	Develop a procedure for dealing with livestock within the affected properties	Pre-Construction Construction	ECO	Once, prior to the commencement of construction and as and when required during construction	Written consent provided by Eskom
– The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme;	dEO / cEO in consultation with the Contractor	Ensure that the planning and development programme considers breeding sites for wild bird species	Pre-Construction Construction	ECO	Once, prior to the commencement of construction and as and when required during construction	Planning and development programme considers breeding sites for wild bird species

– 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;	dEO / cEO in consultation with the Contractor	Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledglings	Construction Operation	ECO Eskom Maintenance Team	Weekly, and as an when required during construction. Monthly =, and as and when required during operation	Photographic record o intact breeding sites
– Nesting sites on existing parallel lines must documented;	dEO / cEO in consultation with the Contractor	Walk-downs of the existing line located parallel to the project must be undertaken and nests and the details thereof documented	Construction Operation	ECO Eskom Maintenance Team	Quarterly, and as and when required	Details of walkdowns undertaken must be noted and kept on file and photographic records nesting sites must be kept

– Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds;	dEO / cEO in consultation with the Contractor	Avifaunal specialist recommendations must be implemented	Construction Operation	ECO Eskom Maintenance Team	Continuous	Photographic record of compliance and successful implementation of mitigation measures
– Bird guards and diverters must be installed on the new line as per the recommendations of the specialist;	dEO / cEO in consultation with the Contractor	Recommendations made by the specialist for the installation of bird guards and diverters must be adhered to and implemented as appropriate. Bird guards and diverters must be maintained	Construction Operation	ECO Eskom Maintenance Team	Continuous	Photographic record of implementation and maintenance of bird guards and diverters
– 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;	dEO / cEO in consultation with the Contractor	Environmental awareness training and induction must cover this aspect	Construction	ECO	Monthly, and as and when required	No signs of poaching

– No deliberate or intentional killing of fauna is allowed;	dEO / cEO in consultation with the Contractor	Environmental awareness training and induction must cover this aspect	Construction	ECO	Monthly, and as and when required	No signs of deliberate killing of fauna
– 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	dEO / cEO in consultation with the Contractor	Implement and maintain snake deterrents on pylons in areas where snakes are abundant	Construction Operation	ECO Eskom Maintenance Team	Once, during the construction of the pylons and as and when required. Monthly during operation	Photographic record of the implementation and maintenance of snake deterrents
– 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.	dEO / cEO in consultation with the Contractor	Obtain permits from Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform for removal/relocation of Protected	Pre-construction	ECO	Once-off prior to construction	Permits are available for inspection on site

		Plant species				

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***;	DPM and a suitably qualified specialist dEO / cEO in consultation with the Contractor	Undertake a Heritage Walkthrough Survey Spatially Identify and demarcate areas of heritage significance as per the Heritage Impact Assessment and the Heritage Walk-through Report and as per the requirements of section 5.3	Pre-construction	ECO	Once, prior to the commencement of construction	Proof of avoidance of sensitive heritage features through details of avoidance and photographic records

– Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance;	Suitably qualified specialist in consultation with the ECO	Appoint an Archaeologist to carry out the monitoring of excavations for fossils, artefacts and important heritage material	Construction	ECO	Continuous during excavations	Proof of appointment of a heritage specialist and photographic record of monitoring
– 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.	dEO / cEO in consultation with the Contractor and ECO	Develop and implement procedures for situations where human remains archaeological, palaeontological or historical material are uncovered	Construction	ECO	Weekly, during the construction phase and as and when required	Proof of work ceased and the required procedures followed in cases where material is discovered.

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	cEO	Implementation of the fire	Pre-Construction	ECO	Once, prior to the	Compliance with Emergency

the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;	dEO Contractor	management plan as per Eskom's Emergency Preparedness Plan	Construction		commencement of construction and weekly during the construction phase	Preparedness Plan
– All unattended open excavations must be adequately fenced or demarcated;	Contractor	Ensure that all Excavations undertaken is fenced and demarcated within a reasonable timeframe and in instances where excavations will be open for long-periods of time	Construction	ECO	Weekly	Excavations are fenced where required and photographic proof can be provided
– Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding;	Contractor	All staff must be easily identifiable, and the climbing of towers and scaffolding must be undertaken by authorised personnel as	Construction	ECO	Continuous	No incidents of unauthorised climbing is reported

		managed by the Contractor				
– Ensure structures vulnerable to high winds are secured;	Contractor	Ensure that sufficient stabilization measures are implemented to secure structure vulnerable to high winds	Construction	ECO	Weekly, or as required	No incidents of unstable structures due to high winds is reported
– Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.	cEO	Compile and regularly update as incidents and complaints are submitted from the public and indicate the actions taken to resolve the complaint	Construction	ECO	Monthly, and as and when required	Incidents and complaints register is up to date

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;	Contractor dEO cEO	Mobile toilets are placed at strategic locations on site and away from sensitive environmental habitats	Pre-construction Construction	ECO	Weekly	Mobile toilets located in non-sensitive environmental areas
– 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;	Contractor dEO cEO	Environmental induction and awareness training to cover this aspect	Construction	ECO	Continuous	No evidence of non-compliance
– 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	Contractor in consultation with the cEO	The installation of mobile toilets meets this requirement	Construction	ECO	Continuous	No evidence of non-compliance

weekends and workers holidays, and must be locked after working hours; 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.	Contractor	Certificates obtained from licensed waste disposal facility with the emptying of the toilets must be kept on file	Construction	ECO	Monthly, and as and when required	Certificates for waste disposal from the licensed waste disposal facility

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;	Contractor	Only Environmentally friendly Pest control must be used, when required	Construction	ECO	As and when pest control is required for the project	Proof of pest control measures undertaken by pest controller

– Ensure that the workforce is sensitized to the effects of sexually transmitted diseases, especially HIV AIDS;	cEO / Contractor in consultation with the ECO	Sex education to be covered at Induction / environmental awareness training presentations	Construction	ECO	Once, prior to the commencement of construction and monthly during construction	Toolbox talk registers
– The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/AIDS	Construction	ECO	Continuous	Photographic evidence of poster placement
– Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;	Contractor	Sex education to be covered in presentations at Induction/Environmental Awareness Training	Construction	ECO	Once-off	Environmental awareness training checklist
– Free condoms must be made available to all staff on site at central points;	Contractor	Condoms at mobile toilets which are accessible	Construction	ECO	continuous	Proof of placement of free condoms by the contractor to be provided
– Medical support must be made available;	dEO / cEO	Ensure that designated personnel with	Construction	ECO	Monthly	Check the availability of first aid trained

		first aid training are available onsite and that first aid kits to provide medical support is readily available				personnel and medical kits (including If these are complete in terms of supplies)
– Provide access to Voluntary HIV Testing and Counselling Services.	Contractor	Compile a HIV testing schedule and provide counselling services where required	Construction	ECO	Quarterly, as and when required	Voluntary testing schedules and proof of counselling (where undertaken)

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;	Contractor	Develop an Emergency Preparedness, Response and	Pre-Construction	ECO	Once, prior to the commenc ement of	Emergency Preparedness, Response and Fire Management Plan

		Fire Management Plan specific to the project			construction	compiled
– The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project which covers accidents, potential spillages and fires	Pre-Construction	ECO	Once, prior to the commencement of construction	Adherence to Eskom's Emergency Preparedness Plan
– All staff must be made aware of emergency procedures as part of environmental awareness training;	dEO / cEO	Emergency procedures covered in Induction training	Pre-Construction	ECO	Prior to commencement of induction training	Environmental awareness training material covers emergency procedures Toolbox talk register
– The relevant local authority must be made aware of a fire as soon as it starts;	Contractor in consultation with the ECO	Develop and include procedures in the Emergency Preparedness,	Construction	ECO	As and when required	The local authority was informed as per the relevant procedure set out in the Emergency

		Response and Fire Management Plan for the event of a fire and the procedure to be followed for informing the local authority				Preparedness, Response and Fire Management Plan
– In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).	Contractor	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction Operation	ECO	As and when a spill or leak occurs	The mitigation measures included under Section 5.17 have been adhered to

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;	cEO dEO Contractor	Develop a strategy of how hazardous substances can be and should be minimised	Pre-construction Construction	ECO	Once, prior to the commencement of construction and monthly during the construction phase	Contractor to provide evidence of substances used for proof of compliance
– All hazardous substances must be stored in suitable containers as defined in the Method Statement;	Contractor dEO Contractor	Method Statement for the storage of hazardous substances in suitable containers	Pre-construction Construction	ECO	Once, prior to the commencement of construction and monthly during the construction phase	Photographic proof that hazardous substances are stored in suitable containers as per the requirements of the relevant Method Statements
– Containers must be clearly marked to indicate contents, quantities and safety requirements;	Contractor	Where hazardous material is stored, these must be clearly marked indicating all the required aspects	Construction	ECO	Monthly	Photographic proof that containers are marked as per the requirements

– All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers;	Contractor	Ensure that storage areas are sufficiently bunded which are of sufficient capacity to contain a spill / leak from the stored containers	Construction	ECO	Monthly	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity contain a spill /leak from the stored containers
– Bunded areas to be suitably lined with a SABS approved liner;	Contractor	Ensure that bunded storage areas are suitably lined	Construction	ECO	Once-off	Photographic proof that bunded storage areas are suitably lined
– An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis;	Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS)control sheet specific to the project	Construction	ECO	Monthly, and as and when required	Complete and up to date control sheet provided by the Contractor
– All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	Contractor	Keep a record of all hazardous chemicals and the respective MSDS	Construction	ECO	Monthly, and as and when required	Record of hazardous chemicals and the respective MSDS

– All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet;	Contractor	Provide training for personnel working with HCS	Pre-construction	ECO	Once, prior to the commencement of construction and as and when required	Record of training provided to personnel working with HCS
– 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	Develop environmental awareness training material which covers the relevant impacts and safety measures. Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous substances and materials	Construction	ECO	Prior to the commencement of the environmental awareness training and monthly during the construction phase for personal protective equipment	Environmental awareness training material requirement checklist and all relevant personnel have undergone appropriate training and have access to personal protective equipment
– The Contractor must ensure that diesel and	Contractor	Appropriate	Construction	ECO	Monthly,	Storage tanks for

other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;		storage facilities must be installed for the storing of diesel, other liquid fuel, oil and hydraulic fluid			and as and when required	the project are appropriate and no incidents are reported in this regard
– 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);	Contractor	Appropriate storage facilities must be constructed or obtained for tanks as per the requirements listed	Construction	ECO	Monthly, and as and when required	Photographic evidence
– The floor of the bund must be sloped, draining to an oil separator;	Contractor	Appropriate storage facilities must be constructed as per the requirements listed	Construction	ECO	Once, during construction	Bunded storage areas are constructed according to the requirements
– 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;	Contractor	Appropriately constructed refueling facility must be developed as per the	Construction	ECO	Weekly, or as required	Soils at the refueling facility are protected as required and drip trays are provided and used

		requirements. Drip trays must be provided for use				
– All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that drums are stored appropriately within bunded areas	Construction	ECO	Weekly	Drip trays or bunded areas are used for the storage of dirty drums
– No unauthorised access into the hazardous substances storage areas must be permitted;	Contractor	Ensure through the implementation of procedures that no unauthorised access is undertaken into the storage areas	Construction	ECO	Continuous	Proof of the implementation of the relevant procedure must be provided by the contractor
– No smoking must be allowed within the vicinity of the hazardous storage areas;	Contractor	Appropriate signage to be provided	Construction	ECO	Continuous	Photographic evidence of signage
– Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting	Construction	ECO	Continuous	Adequate firefighting equipment is available and has been serviced

		equipment				
– 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;	Contractor	Provide a mobile refuelling unit as well as suitable ground protection, where required	Construction	ECO	Continuous	A mobile refuelling unit and suitable ground protection is available for use
– 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;	Contractor	Provide an appropriate spill kit for the project for the use of hazardous substances	Construction	ECO	Continuous	Appropriate spill kits are available for use
– The responsible operator must have the required training to make use of the spill kit in emergency situations;	Contractor	Provide training on the use of spill kits to the relevant employees	Construction	ECO	Once-off, prior to construction	Proof of training to be provided by the contractor
– An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken	Contractor	Provide an appropriate number of spill kits in relevant areas	Construction	ECO	Monthly	Proof of appropriate number of spill kits appropriate areas to be provided by the contractor
– In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of	cEO and Contractor	Storage and disposal of contaminated	Construction	ECO	Monthly, and as and when	Proof of storage and disposal must

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.***		soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and5.8 of this EMPr			required	be provided. Certificates of disposal at licensed waste disposal facilities must be provided

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;	Contractor dEO cEO	Method statement on maintenance of vehicles and equipment.	Construction	ECO	Monthly	Photographic evidence of a dedicated area for the maintenance of vehicles and machinery.
– 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	Contractor	Ensure that a drip tray is available for emergency	Construction	ECO	Monthly	Contractor to provide evidence of drip tray use for

spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;		repairs required				emergency repairs
– Leaking equipment must be repaired immediately or be removed from site to facilitate repair;	Contractor	Ensure that leaking equipment is repaired immediately, or removed from site for repairs	Construction	ECO	Monthly	Contractor to provide details of equipment repaired or removed from site
– Workshop areas must be monitored for oil and fuel spills;	Contractor	Undertake regular inspections of the workshop areas for oil and fuel spills and keep an updated register of inspection onsite	Construction	ECO	Monthly	Register of inspection
– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	Contractor	Provide an appropriate spill kit on site	Construction	ECO	Monthly, or as required	Appropriate spill kits are available for use
– 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;	Contractor	Ensure that the workshop area is sufficiently bunded in accordance with the	Construction	ECO	Once, during the Constructio n Phase and as and when	Workshop area is bunded in accordance with the required specification

		required specification			required	
– Water drainage from the workshop must be contained and managed in accordance ***Section 5.7: storm and wastewater management***.	Contractor	Ensure that water drainage from workshop area is managed as per the requirements of section 5.7	Construction	ECO	Monthly	Workshop drainage is managed in accordance with the requirements

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;	Contractor dEO cEO	Method statement on concrete mixing	Construction	ECO	Weekly	Photographic evidence that no concrete mixing is undertaken on open ground
– Batching plants areas must be fitted with a containment facility for the collection of	**Not Applicable – No batching plant required for the installation of the overhead power line.**					

cement laden water.						
– Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	**Not Applicable – No batching plant required for the installation of the overhead power line.**					
– Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;	Contractor	Provide storage area for bagged cement in-line with the listed requirements	Construction	ECO	Weekly	Photographic proof of bagged cement stored in an appropriate area
– A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provision of wash out facility and monitoring of water usage	Construction	ECO	Weekly	No cement laden water is released into the environment. Only minimal water is used for washing
– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility;	Contractor	Make use of hardened concrete where possible or dispose of concrete in a suitable manner	Construction	ECO	Weekly	Certificates of disposal of concrete at licensed waste disposal facility
– Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site;	Contractor	Bind empty cement bag and temporarily store it in an appropriate	Construction	ECO	Weekly	Proof of binding of cement bags and storage in an appropriate are on site to be provided

		area on site				by the Contractor empty
– Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to ***Section 5.20: Dust emissions***)	Contractor	Ensure that sand and aggregates are kept damp or otherwise protected from dust generation	Construction	ECO	Monthly	Proof of damping (or alternative dust suppression) of sand and aggregates
– 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;	Contractor	Ensure that all excess sand, stone and cement is removed or reused	Construction	ECO	Once-off, post-construction	Certificates for the disposal of sand, stone and cement at licensed waste disposal facilities or proof of reuse must be provided
– Temporary fencing must be erected around batching plants in accordance with ***Section 5.5: Fencing and gate installation***.	**Not Applicable – No batching plant required for the installation of the overhead powerline.**					

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;	Contractor dEO cEO	Dust suppression via water tanker. Implementation of dust screens as required. Covering of trucks transporting soil material.	Construction	ECO	Weekly	Photographic evidence
– 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;	Contractor dEO cEO	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	Construction Rehabilitation Phase	ECO	Weekly	Rehabilitation Plan to be implemented by Contractor
– Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	Contractor	Ensure that specific limitations are placed on the transport and handling of erodible materials during high wind conditions or when a visible dust plume is	Construction	ECO	As and when required	No complaints regarding this

		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;	ECO	ECO to make recommendations	Construction	ECO to advise further		
– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor	Place soi stockpiles in areas less affected by wind	Construction	ECO	Weekly	Soil stockpiles are not exposed to wind and have not been eroded
– Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO;	Contractor	Contractor to implement erosion control measures are commended and agreed with the ECO	Construction	ECO	Weekly, until erosion is resolved	Recommendations made by the ECO have been implemented by the Contractor
– Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas;	cEO / dEO /Contractor	Inform all drivers of speed limits and place appropriate signage along the relevant roads	Construction	ECO	Continuous	No complaints from stakeholders
– Straw stabilisation must be applied at a rate	Contractor	Ensure that	Construction	ECO	Monthly	Photographic

of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;		straw stabilization is undertaken as per the listed requirements				records
– For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.	Contractor	Appropriate dust suppressant measures are implemented	Construction	ECO	Weekly	Photographic records

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	**n/a – no blasting will be required.**					
– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	**n/a – no blasting will be required.**					

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;	Contractor	Ensure that noise limits do not exceed acceptable limits and avoid the use of amplification communication	Construction	ECO	Continuous, or as and when neccessary	No complaints from stakeholders
– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor	Implementation of silencing technology	Construction	ECO	Continuous, or as and when neccessary	No complaints from stakeholders
– 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;	cEO dEO cEO	Update complaints register. Provide daily transport to and from site for employees	Construction	ECO	Monthly, and as and when neccessary	No complaints from stakeholders
– 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	cEO and Contractor	Compile a Code of Conduct for staff. Appropriate	Construction	ECO	Once, prior to the commence ment of construction	No complaints from stakeholders

must be ensured that development activities must still meet the impact management outcome related to noise management.		operating hours must be identified for the project.				

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;	cEO / dEO Contractor	Identify and demarcate through signage designated smoking areas	Pre-construction Construction	ECO	Monthly	Photographic record of designated smoking area
– Firefighting equipment must be available on all vehicles located on site;	cEO / dEO Contractor	Provision of firefighting equipment on vehicles	Construction	ECO	Continuous	All vehicles are fitted with firefighting equipment and the details thereof provided by

						the cEO
– The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO / dEO Contractor	Undertake formal consultation to inform the local FPA of the associated construction activities	Construction	ECO	Once, during the commencement of the Construction Phase	Proof of consultation with the FPA
– Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site;	Contractor	Contact numbers are provided at awareness training and displayed at the construction camp	Construction	ECO	Prior to the commencement of construction	Environmental Awareness training material requirement checklist and photographic record of contact numbers on display
– Two-way swop of contact details between ECO and FPA.	ECO	Consultation between the ECO and FPA in order to exchange contact details	Pre-Construction	ECO	Once-off	Signed proof of swop of contact details

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;	Contractor dEO cEO	Identify and demarcate in appropriate location for the storage of excavated materials	Construction	ECO	Continuous	Photographic evidence that excavated material is not stored within sensitive environmental areas
– All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;	Contractor	Implement appropriate and sufficient maintenance on stockpiled material regularly	Construction	ECO	Continuous	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
– Topsoil stockpiles must not exceed 2 m in height;	Contractor	Implement measures to ensure stockpiles	Construction	ECO	Continuous	Topsoil stockpiles do not exceed 2m

		are under 2m in height				in height
– During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	Contractor	Implement measures to ensure stockpiles are covered	Construction	ECO	As and when required	Contractor to provide proof of availability of appropriate material to cover stockpiles when required
– Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	Contractor	Sandbags must be provided in order to prevent erosion of stockpiled materials	Construction	ECO	Continuous	Contractor to provide proof of availability of sandbags to prevent erosion of stockpiled materials

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;	Contractor	Ensure that vegetation	Pre-construction	ECO	Weekly	Evidence to provided that

		clearance commences once approval for commencement is granted				vegetation clearance commenced when approval was granted
– No new access roads must be developed to facilitate access for survey and pegging purposes;	Contractor	No new access roads constructed to allow access for survey and pegging purposes	Pre-construction	ECO	Weekly	Contractor to provide photographic proof that no new roads have been developed
– Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas;	DPM, Suitably Qualified Specialist and Contractor	Final walk-down of the proposed servitude to demarcate tower positions in agreement with the relevant personnel	Pre-construction	ECO	Once the final tower positions have been finalised and agreed upon	Provision of final tower positions to the ECO
– 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.	Surveyor in consultation with the ECO	Undertake consultation between the surveyor and the ECO	Pre-construction	ECO	Weekly	Consultation with the ECO regarding the distribution of pegs.

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;	Contractor	Use of a licensed waste disposal facility for the disposal of excess spoil	Construction	ECO	Monthly	Certificates obtained for the disposal of excess spoil at a licensed waste disposal facility
– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes;	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Construction	ECO	Monthly	Photographic record of use of spoiled material for landscaping.
– Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop equipment maintenance and storage***; and	Contractor	Undertake the management of equipment for excavation as per the requirements of section 5.18	Construction	ECO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18
– Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***.	Contractor	Implementation of management of hazardous	Construction	ECO	Monthly	Management of spills are in accordance

		substances are in accordance with the requirements of Section 5.17				with Section 5.17.
– Batching of cement to be undertaken in accordance with **Section *5.19 : Batching plants***;	**n/a - there will be cement batching**					
– Residual cement must be disposed of in accordance with **Section *5.8: Solid and hazardous waste management***.	Contractor	Implementation of disposal of residual cement is in accordance with the requirements of Section 5.8	Construction	ECO	Monthly	The disposal of residual cement is undertaken in line with section5.8.

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	Contractor	Provide the necessary	Construction	ECO	Weekly	Implementation of elevated

surface (suggest wooden blocks) to minimise damage to the underlying vegetation;	dEO cEO	measures to ensure that towers are stored on elevated surfaces to avoid damage to vegetation				surface and photographic record thereof
– In sensitive areas, tower assembly must take place off-site or away from sensitive positions;	**n/a – tower positions will be located in transformed areas**					
– The crane used for tower assembly must be operated in a manner which minimises impact to the environment;	Contractor in consultation with the cEO and the ECO	Ensure that no impact to the environment is imposed during the operation of the crane	Construction	ECO	Weekly	No environmental damages incurred as a result of the crane.
– The number of crane trips to each site must be minimised;	Contractor in consultation with the cEO and the ECO	Ensure that the utilisation of the crane is maximised when on site.	Construction	ECO	Weekly	No. of crane trips are recorded and minimised.
– Wheeled cranes must be utilised in preference to tracked cranes;	Contractor	Ensure wheeled cranes are utilised.	Construction	ECO	Weekly	Wheeled cranes are utilised
– Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of	Contractor	Placement of towers on site are undertaken	Construction	ECO	Weekly	Use of manual / helicopter to erect towers.

environmental impact;		with due consideration to the environment				
– Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads;	Contractor	Undertake access to tower positions in terms of the requirements of Section 8.4	Construction	ECO	Weekly	Tower positions are in accordance with the requirement of Section 8.4.
– Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing;	Contractor	Undertake vegetation clearance as per the requirements of section 5.10	Construction	ECO	Weekly	Vegetation clearance is in accordance with Section 8.10
– No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor;	Contractor in consultation with the DPM and DSS	Written permission for levelling at tower sites, if required, must be obtained from the DPM and DSS prior to the undertaking of any levelling activities	Construction	ECO	Monthly, and as and when required	Written permission from the DPM and DSS provided to the Contractor
– Topsoil must be removed separately from subsoil material and stored for later use	Contractor	Implement appropriate	Construction	ECO	Weekly, and as and when	Proof of appropriate

during rehabilitation of such tower sites;		measures to ensure that topsoil is removed from subsoil material	Rehabilitation Phase		required	measures implemented must be provided by the Contractor
– Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil;	Contractor	Implement measures to ensure that stored stockpiles do not exceed 1m	Construction	ECO	Weekly	There are no non-conformances with regards to this aspect
– Excavated slopes must be no greater that 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes;	Contractor	Implement the listed requirements for the excavation of slopes	Construction	ECO	Weekly	There are no non-conformances with regards to this aspect
– 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;	**n/a – no blasting activities will be required**					
– Only existing disturbed areas are utilised as spoil areas;	Contractor in consultation with the ECO	Identify, demarcate and use existing disturbed areas for spoil areas	Pre-construction Construction	ECO	Weekly	Spoil areas are approved by the ECO
– Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum;	**n/a**					

– Surface water runoff is appropriately channeled through or around spoil areas;	DPM and Contractor	Design and implement appropriate surface runoff measures for spoil areas	Pre-construction Construction	ECO	Once, during the construction of the surface runoff measures	Implementation of surface runoff measures through and/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;	Contractor	Develop and implement backfilling procedures which ensures that topsoil is not placed at the bottom of foundations.	Pre-construction Construction	ECO	Weekly	Backfilling operations are undertaken as per the procedures developed
– The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation;	Contractor	Rehabilitation of the surface spoil must be undertaken in accordance with the requirements of section 5.29	Rehabilitation	ECO	Weekly	Rehabilitation of the surface spoil is undertaken as per the requirements of section 5.29
– 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	Contractor	Ensure that topsoil is spread evenly and compacted	Rehabilitation	ECO	Weekly	Proof that topsoil has been spread evenly and compacted

complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.		appropriately. This must be undertaken outside of the start of the dry season				correctly must be provided by the Contractor/ cEO. Proof that the activities were undertaken outside of the start of the dry season must be provided by the Contractor

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	**This will be complied with as the proposed servitude is located in a non-sensitive ecological area.**					

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;	Contractor	Drip trays to be provided	Construction	ECO	Weekly	Sufficient drip trays are available for the winch tensioner stations and no spills occur
– Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances;	Contractor	Measures are in place to ensure that the refuelling is in accordance with the requirements of Section 5.17.	Construction	ECO	Monthly	Refuelling is as per the requirements of Section 5.17.
– 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;	Contractor	Develop and implement procedures for implementation for vegetation clearing during stringing in line with the specification.	Construction	ECO	Once, prior to the commencement of construction and weekly during stringing	Implementation of the procedures putting place and proof thereof from the Contractor
– Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a	Contractor	Identify and implement the stringing	Construction	ECO	Weekly	Implementation of identified method of

helicopter;		method with the least environmental impact				stringing with the least environmental impact
– 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;	Contractor	Identify prior to construction areas where protection measures will be required during stringing. Where access is to be restricted timeous written notice must be provided to the affected parties	Construction	ECO	Monthly, and as and when required	Proof of implementation of protection measures and proof of written notice to affected parties must be provided by the Contractor
– 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;	Contractor	Existing services must be mapped/demarcated on site, and avoided during construction	Construction	ECO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof overwritten notice to affected parties must be provided by the Contractor

– 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;	**n/a – the proposed powerline does not traverse cultivated agricultural land**
– Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.	**n/a – the proposed powerline does not traverse cultivated agricultural land**

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;	dEO / cEO	Identify and implement appropriate strategies for communication with the communities through consideration of the community needs	Pre-Construction Construction	ECO	Once, prior to the commencement of construction	No complaints received from stakeholders and the communication plan is implemented

– Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process;	Contractor	Development and implement a Grievance Mechanism which considers the community needs and provides procedures for conflict resolution	Pre-Construction Construction	ECO	Once, prior to the commencement of construction	Conflict resolution is undertaken as per the documented procedures. No complaints received from the stakeholders.
– Sustain continuous communication and liaison with neighboring owners and residents	Contractor	Development and implement and Grievance Mechanism provides procedures for communication / liaison with neighboring landowners and residents	Pre-Construction Construction	ECO	Continuous	Communication with the neighboring community meets the requirement of the Grievance Mechanism. No complaints received from the stakeholders.
– Create work and training opportunities for local stakeholders; and	Contractor	Develop and implement a "locals first" policy for the provision of employment opportunities	Pre-Construction Construction	ECO	Once, prior to the commencement of construction	The "locals first"policy is considered in terms of the employment and training opportunities
– Where feasible, no workers, with the exception of security personnel, must be permitted to stay over-night on the site. This	**n/a – local labor will be sourced and three will be no overnight stays at the site, except for security staff.**					

would reduce the risk to local farmers.	

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***;	Contractor dEO cEO	Bunds are to be emptied as per the requirements of Sections 5.17 and 5.18.	Construction	ECO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirement listed under sections 5.17 and 5.18
– Hazardous storage areas must be well ventilated;	Contractor dEO cEO	Install appropriate ventilation in hazardous storage areas	Construction	ECO	Prior to site closure for more than 05 days	Photographic evidence of installed ventilation in hazardous storage areas
– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor dEO cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure service records	Construction	ECO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records

		and kept up to date and filed				
– Emergency and contact details displayed must be displayed;	Contractor/ cEO dEO	Place emergency and contact details which are readily available and easily accessible	Construction	ECO	Prior to site closure for more than 05 days	Photographic proof of contact details on display
– Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel;	Contractor dEO cEO	A workshop must be held with the security staff regarding emergency situations and the contacts to be made.	Pre-construction Construction	ECO	Prior to site closure for more than 05 days	Proof of the workshop held must be kept on file by the contractor.
– Night hazards such as reflectors, lighting, traffic signage etc. must have been checked;	Contractor dEO cEO	Regular checks of night hazards must be undertaken	Construction	ECO	Prior to site closure for more than 05 days	Proof of checks of night hazards must be provided by the contractor
– Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;	Contractor dEO cEO	Identify any potential fire hazards and notify the relevant local authority	Construction	ECO	Prior to site closure for more than 05 days	Proof of notification of the fire hazards to the local authority must be provided by the Contractor
– Structures vulnerable to high winds must be secured;	Contractor dEO cEO	Ensure structures vulnerable to wind are secure prior to site closure	Construction	ECO	Prior to site closure for more than 05 days	Structures vulnerable to wind are secured prior to site closure

– Wind and dust mitigation must be implemented;	Contractor dEO cEO	Implement wind and dust mitigation prior to site closure	Construction	ECO	Prior to site closure for more than 05 days	Wind and dust mitigation is implemented prior to site closure
– Cement and materials stores must have been secured;	Contractor dEO cEO	Ensure that cement and material stores are secured prior to site closure	Construction	ECO	Prior to site closure for more than 05 days	Cement and material stores are secured and evidence is provided by the Contractor
– Toilets must have been emptied and secured;	Contractor dEO cEO	Ensure that toilets are emptied and secured prior to site closure	Construction	ECO	Prior to site closure for more than 05 days	Toilets are emptied and secured prior to site closure
– Refuse bins must have been emptied and secured;	Contractor dEO cEO	Ensure that refuse bins are emptied and secured prior to site closure	Construction	ECO	Prior to site closure for more than 05 days	refuse bins are emptied and secured prior to site closure
– Drip trays must have been emptied and secured.	Contractor dEO cEO	Ensure that drip trays are emptied and secured prior to site closure	Construction	ECO	Prior to site closure for more than 05 days	Drip trays are emptied and secured prior to site closure

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;	Contractor dEO cEO	The Rehabilitation Plan must be implemented. Spoil and waste are disposed of at a registered landfill site.	Rehabilitation	ECO	Weekly	Rehabilitation measures are in accordance with the Rehabilitation Plan. Certificates of waste disposal at licensed facilities are available.
– 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	Contractor in consultation with ECO	Assess all slopes and determine whether contouring is required	Rehabilitation	ECO	Weekly	All slopes are assessed and contoured as required
– 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;	Contractor in consultation with ECO	Assess all slopes and determine whether terracing is required	Rehabilitation	ECO	Weekly	All slopes are assessed and terraced as required
– 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;	Contractor	Ensure all berms have a slope of1:4 and is replanted with indigenous species and grasses	Rehabilitation	ECO	Weekly	All berms have a slope of 1:4 and is replanted with indigenous species and

						grasses
– 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;	**n/a – the project site is not within cultivated agricultural land**					
– Rehabilitation of tower sites and access roads outside of farmland;	**n/a – the project site is not within cultivated agricultural land**					
– Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Indigenous vegetation is to be planted in accordance with the Rehabilitation Plan must be implemented.	Rehabilitation	ECO	Weekly	Indigenous species are used for rehabilitation
– Stockpiled topsoil must be used for rehabilitation (refer to Section ***5.24: Stockpiling and stockpiled areas***);	Contractor	Ensure stockpiled topsoil is used as per the requirement listed under section 5.24	Rehabilitation	ECO	Weekly	Stockpiled topsoil is used as per the requirement listed under section 5.24
– Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion;	Contractor	Ensure that topsoil is spread evenly	Rehabilitation	ECO	Weekly	Topsoil is spread evenly
– Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;	Contractor	Remove all visible weeds from placement area and topsoil before spreading the topsoil	Rehabilitation	ECO	Weekly	No weeds are visible in the topsoil
– Subsoil must be ripped before topsoil is placed;	Contractor	Undertake the ripping of subsoil prior to the spreading of topsoil	Rehabilitation	ECO	Weekly	Subsoil is ripped before topsoil is placed

– The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment;	Contractor	Commencement of rehabilitation must be in accordance with the Rehabilitation Plan	Rehabilitation	ECO	Weekly	Rehabilitation is undertaken during the optimal time
– Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled ;	Contractor	All impacted slopes must be stabilized	Rehabilitation	ECO	Weekly	Slopes are stabilized
– 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	Contractor	Contract design specifications must be adhered to.	Rehabilitation	ECO	Weekly	Slopes are stabilized as per design specifications
– Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil.	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Rehabilitation	ECO	Weekly	Photographic record and confirmation from Contractor
– 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;	Contractor in consultation with a suitably qualified specialist	Make use of a suitable vegetation seed mixture should enhancement be required	Rehabilitation	ECO	As and when required	Use of a suitable vegetation seed mixture if required

– 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:

Name of applicant: Eskom Holdings SOC Ltd

Tel No: (053) 830 5924

Fax No: n/a

Postal Address: P.O. Box 606, Kimberley

Physical Address: Eskom Distribution, DSC Building, Ground floor (C Block), 69 Memorial Road, Monument Heights, Kimberley, 8301

7.1.2 Details and expertise of the EAP:

Name of EAP: Ms Natasha Lalie

Tel No: (011) 207 2060

Fax No: 086 674 6121

E-mail address: natashal@zitholele.co.za

Expertise of the EAP (Curriculum Vitae included): Refer to Appendix 2 of this EMPr for the CV of the EAP

7.1.3 Project name:

Proposed Kiwano Solar Photovoltaic and Battery Energy Storage System Facility including associated substation and 132kV loop-in loop-out powerline near Upington, Northern Cape Province.

7.1.4 Description of the project:

Eskom Holdings SOC Ltd intends to develop, construct and operate a 58 MW Solar Photovoltaic (PV) Plant, 40MW Grid-Scale Battery Energy Storage System (BESS) facility, a 132kV Kiwano Substation, and construction of a 132kV powerline outside the town of Upington in the Northern Cape Province. The proposed development falls within the jurisdiction of Dawid Kruiper Local Municipality and within Z F Mgcawu District Municipality.

The proposed Kiwano BESS and PV facility will comprise of the following:

- PV installation with envisaged capacity of 58 MW,
- BESS installation with envisaged capacity of 40 MW / 200 MWh
- Kiwano 132 kV substation with 5 feeder bays
- Single Twin-Tern 132 kV overhead line on a double circuit support structure, connecting Kiwano substation to Upington substation.

The PV facility proposed for Kiwano will include the following associated infrastructure:

- Total site area for PV installation up to 1,150,000 m^2 (115 hectares) to allow for the construction of a PV facility with capacity of 58 MW.
- Solar PV modules, up to a total of 450,000 m^2, that convert solar radiation directly into electricity. The solar PV modules will be elevated above the ground and will be mounted on either fixed tilt systems or tracking systems (comprised of galvanised steel and aluminium). The Solar PV modules will be placed in rows in such a way that there is allowance for a perimeter road and security fencing along the site boundary, and access roads in between the PV module rows.
- Inverter stations, each occupying a footprint up to approximately 30 m^2, with up to 60 Inverter stations installed on the site. Each Inverter station will contain an inverter, step-up transformer, and switchgear. The Inverter stations will be distributed on the site, located alongside its associated Solar PV module arrays. The Inverter station will perform conversion of DC (direct current) to AC (alternating current), and step-up the LV voltage of the inverter to 22 kV, to allow the electricity to be fed into the Kiwano substation. Inverter stations will connect several arrays of Solar PV modules and will be placed along the internal roads for easy accessibility and maintenance.
- Below ground electrical cables with trenching - connecting PV arrays, Inverter stations, O&M buildings, and 132kV Kiwano substation.
- Adequately designed foundations and mounting structures that will support the Solar PV modules and Inverter stations.
- Where possible, existing roads that provide access to the Kiwano site will be used, upgraded, and extended as necessary. For Site A, an access road, approximately 6 m wide and estimated up to 5 km long, will be required to provide access to the PV site. For Site B, a new access road from the existing D3276 road to the site will be required, approximately 6 m wide and estimated up to 1 km long. The existing D3276 road will require upgrading, approximately 6 m wide and estimated up to 4 km long (from N14 to site access road).
- A perimeter road around the site, approximately 5 m wide and 4.5 km in length.
- Internal roads for access to the Inverter stations, approximately 5 m wide and 18 km total length.
- Internal roads/paths between the Solar PV module rows, approximately 2-3 m wide, to allow access to the Solar PV modules for operations and maintenance activities.
- Infrastructure required for the operation and maintenance of the Kiwano PV Plant installation:
    - Meteorological Station
    - O&M Building – comprising control room, server room, security equipment room, offices, boardroom, kitchen, and ablution facilities (including sewage infrastructure)
    - Spares Warehouse and Workshop
    - Hazardous Chemical Store
    - Security Building
    - Parking areas and roads

- Small diameter water supply pipeline connecting existing municipality pipeline, approximately 5 km long.
- Stormwater channels
- Perimeter fencing of the Kiwano site, with access gates. Detailed requirements will be determined following the security risk assessment.
- Temporary laydown area, occupying a footprint up to 100,000 m^2 (10 hectares). The laydown area will be used during construction and rehabilitated thereafter. The laydown area will also accommodate water storage tanks or lined ponds (estimated 815 kl/month for the first 3 months and 408 kl/month for the remaining 21 months, until construction is completed).
- Temporary concrete batching plant, occupying a footprint up to 10,000 m^2 (1 hectare). The concrete batching plant area will be used during construction and rehabilitated thereafter.
- Temporary site construction office area, occupying a footprint up to 10,000 m^2 (1 hectare). This area will accommodate the offices for construction contractors during construction and rehabilitated thereafter.

7.1.5 Project location:

The proposed overhead powerline will traverse the following properties:

NO	FARM NAME (if applicable)	FARM NUMBER (if applicable)	PORTION NAME	PORTION NUMBER	LATITUDE	LONGITUDE
0	Keimoes	1080	n/a	Remainder	Start point: 28°30'18.07"S Middle point: 28°31'30.32"S End point: 28°32'39.18"S	Start Point: 21° 8'6.42"E Middle point: 21° 8'16.96"E End point: 21° 8'13.05"E

7.16 Preliminary technical specification of the overhead transmission and distribution:

- Length – Approximately 5,5km
- Tower parameters
  - Number and types of towers - Information will be available at the detailed design stage
  - Tower spacing (mean and maximum) - Information will be available at the detailed design stage
  - Tower height (lowest, mean and height – Up to 24m
  - Conductor attachment height (mean)- Information will be available at the detailed design stage
  - Minimum ground clearance – Information is not available at this stage.

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.

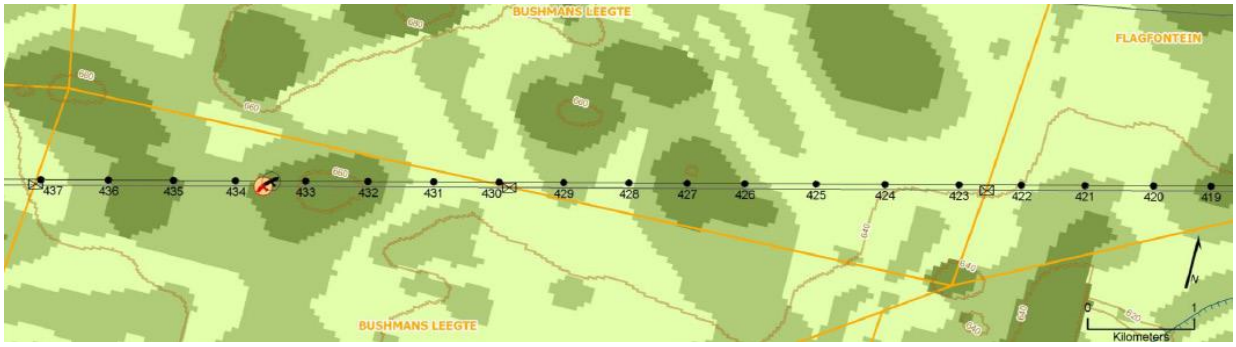

Figure 1: Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile

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:

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 B: Section 2

7.2 Subsection 2: Development Footprint Site Map

The northern portion of the proposed transmission line route exhibits an area of medium ecological sensitivity as it exits the proposed substation at Site B, mainly due to the presence of geophytic plant species. The remaining section of the powerline route alignment as it goes towards the existing substation has a low ecological sensitivity. No heritage resources were observed during the site surveys. There is a very small chance that fossils may have been trapped in features such as palaeo-pans or palaeo-springs, and buried by the aeolian sands, but no such feature is visible in the satellite imagery.

There are several drainage lines occurring within the corridor of the proposed powerline that must be avoided during construction. The proposed powerline infrastructure adds additional visual impact to the existing impacted landscape. With mitigation measures, the impact on the landscape can be reduced from moderate significance to low significance.

The assessment area consisted of one avifauna habitat; Karroid Grassland. This habitat is still mostly in a natural state, with the exception of some areas that have been disturbed by livestock grazing. Habitats in the surrounding areas included drainage lines, the Orange River and associated vegetation and the cultivated areas surrounding the Orange River. Five species of conservation concern (SCC), Red-footed Falcon (*Falco vespertinus*), Abdim's Stork (*Ciconia abdimii*), Lanner Falcon (*Falco biamircus*), Kori Bustard (*Ardeotis kori*) and Secretarybird (*Sagittarius serpentarius*) were confirmed in the assessment area. The Lanner Falcon breeds on cliff ledges, and it is thus less likely to have a permanent nest in the assessment area. The Red-footed Falcon and Abdim's Stork are migratory birds that do not breed in the region. Based on the nesting behaviour and the habitat type in the assessment area, it can be said that two of the five SCCs are permanent residents in the assessment area: the Kori Bustard (*Ardeotis kori*) and Secretarybird (*Sagittarius serpentarius*).

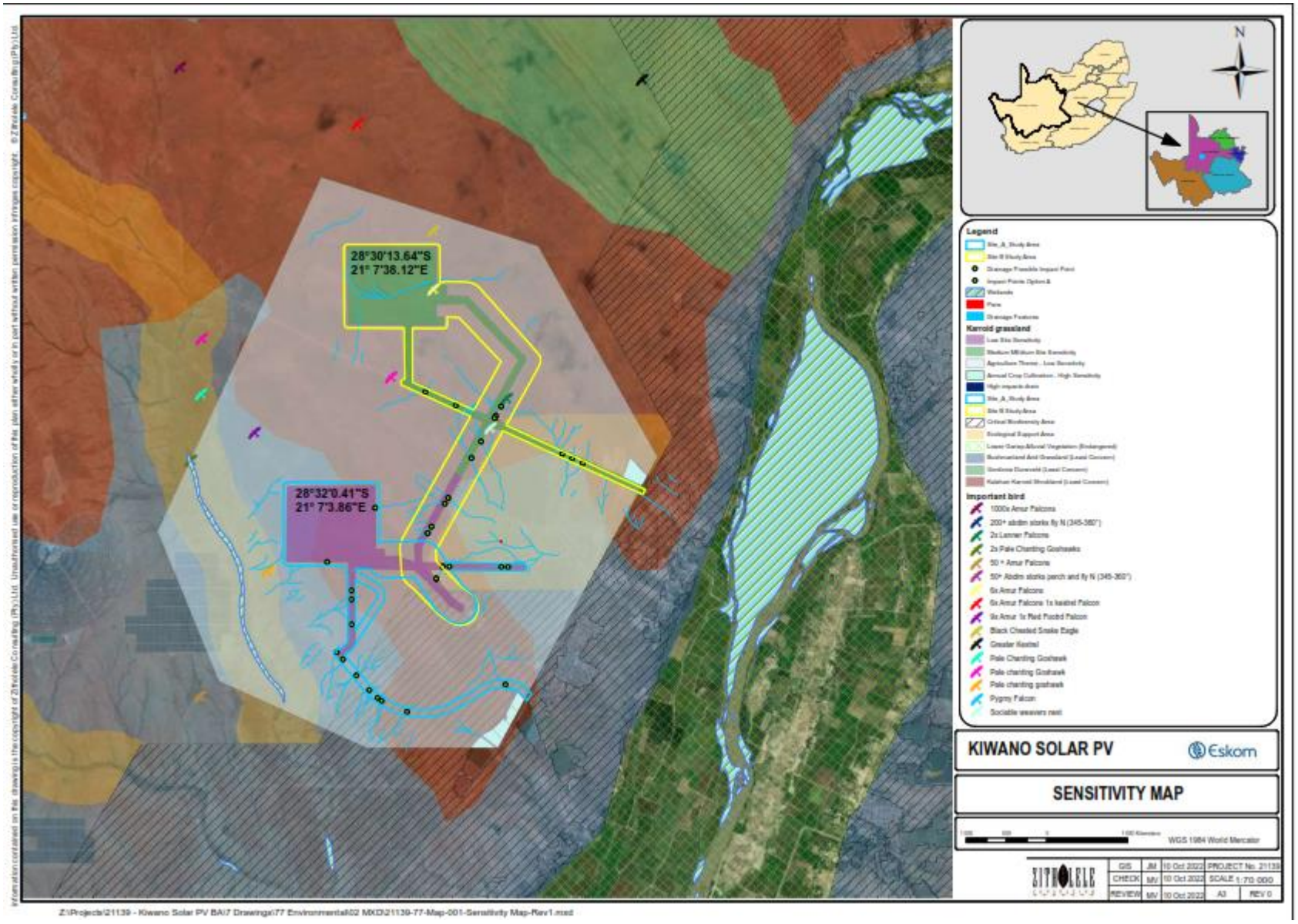

Figure 1: Development Footprint Site Map

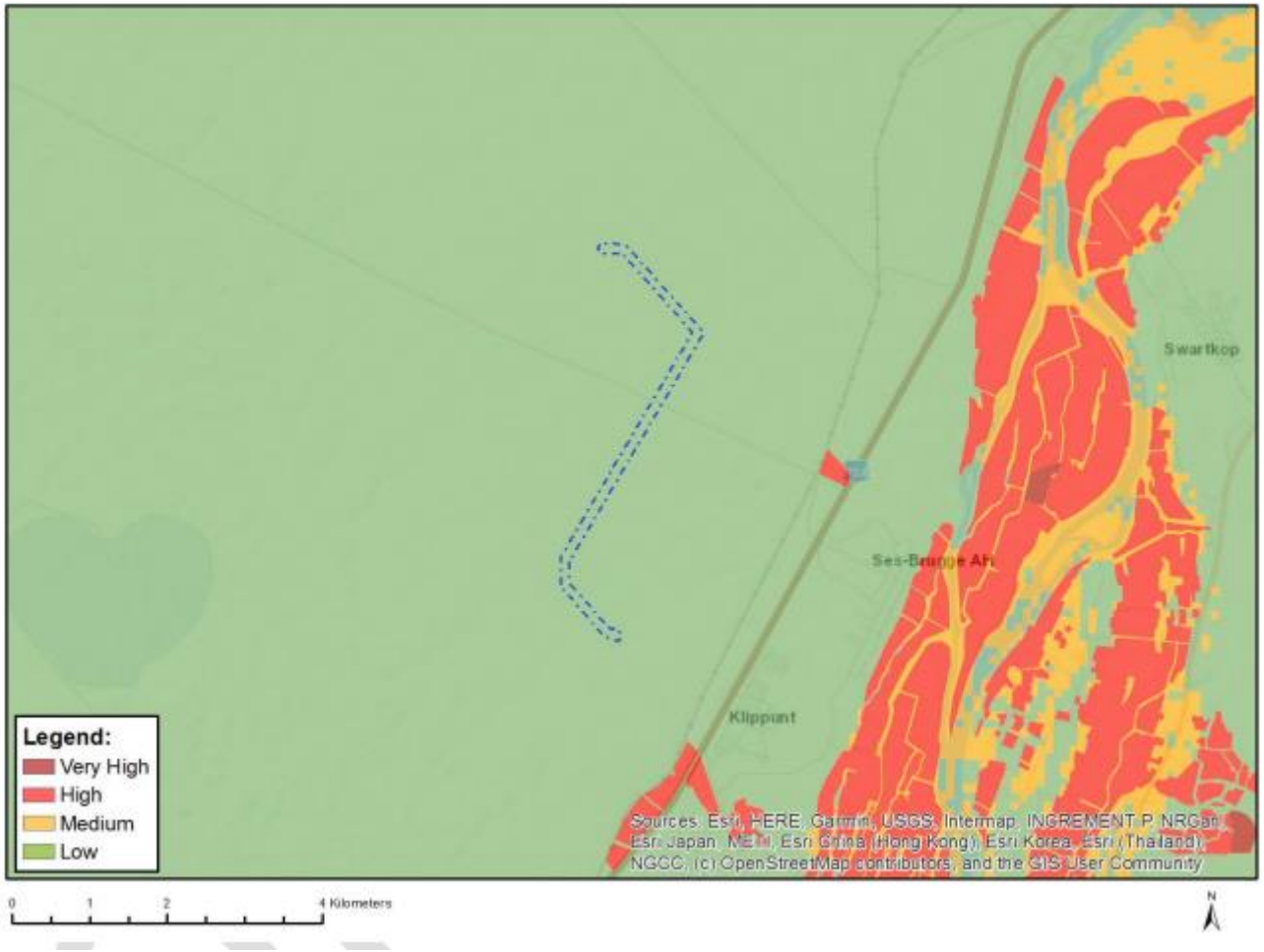

Figure 2: Map of Relative Agriculture Theme Sensitivity *(map generated from DFFE Screening Tool Report)*

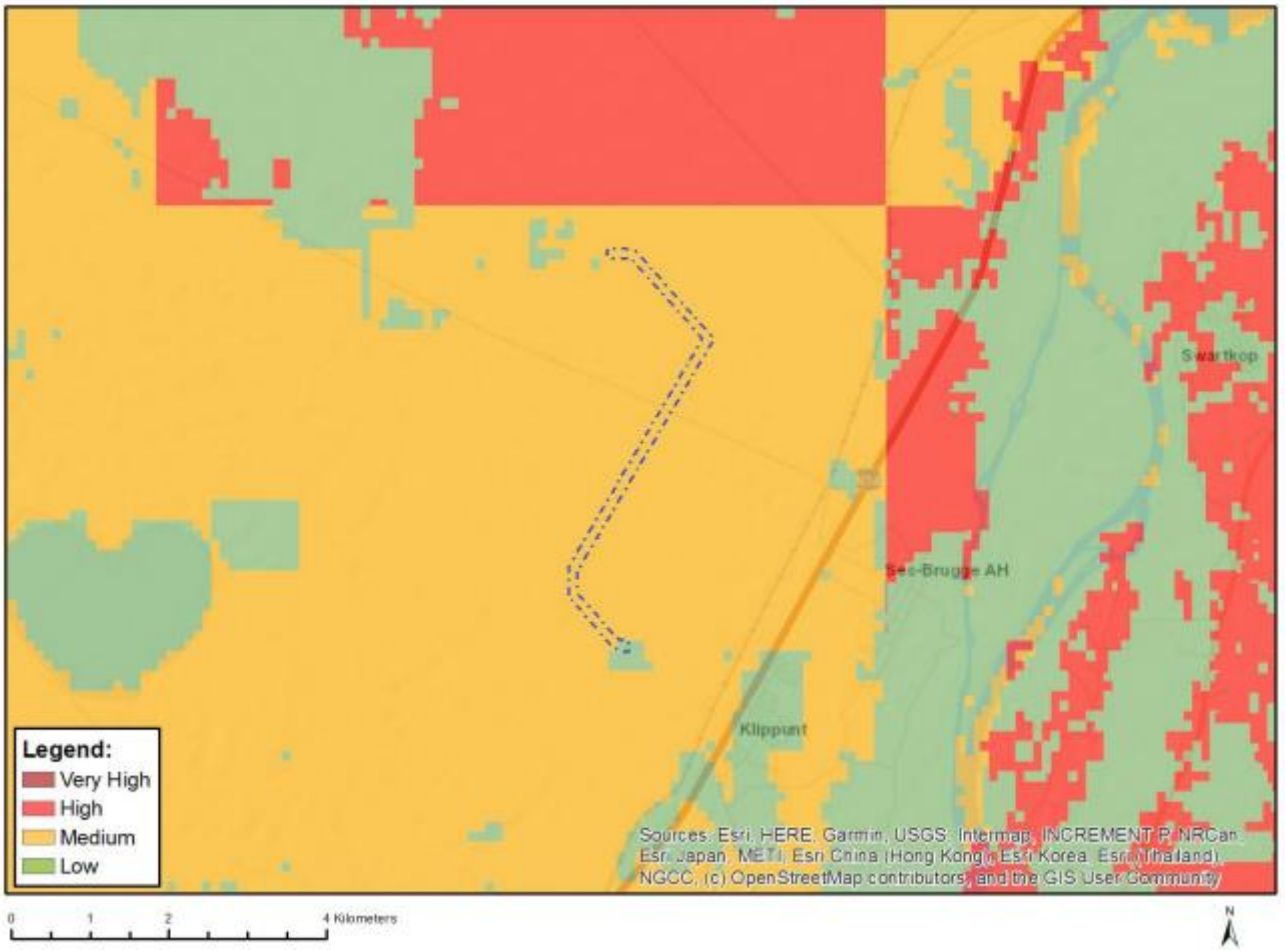

Figure 3: Map of relative animal species theme sensitivity *(map generated from DFFE Screening Tool Report)*

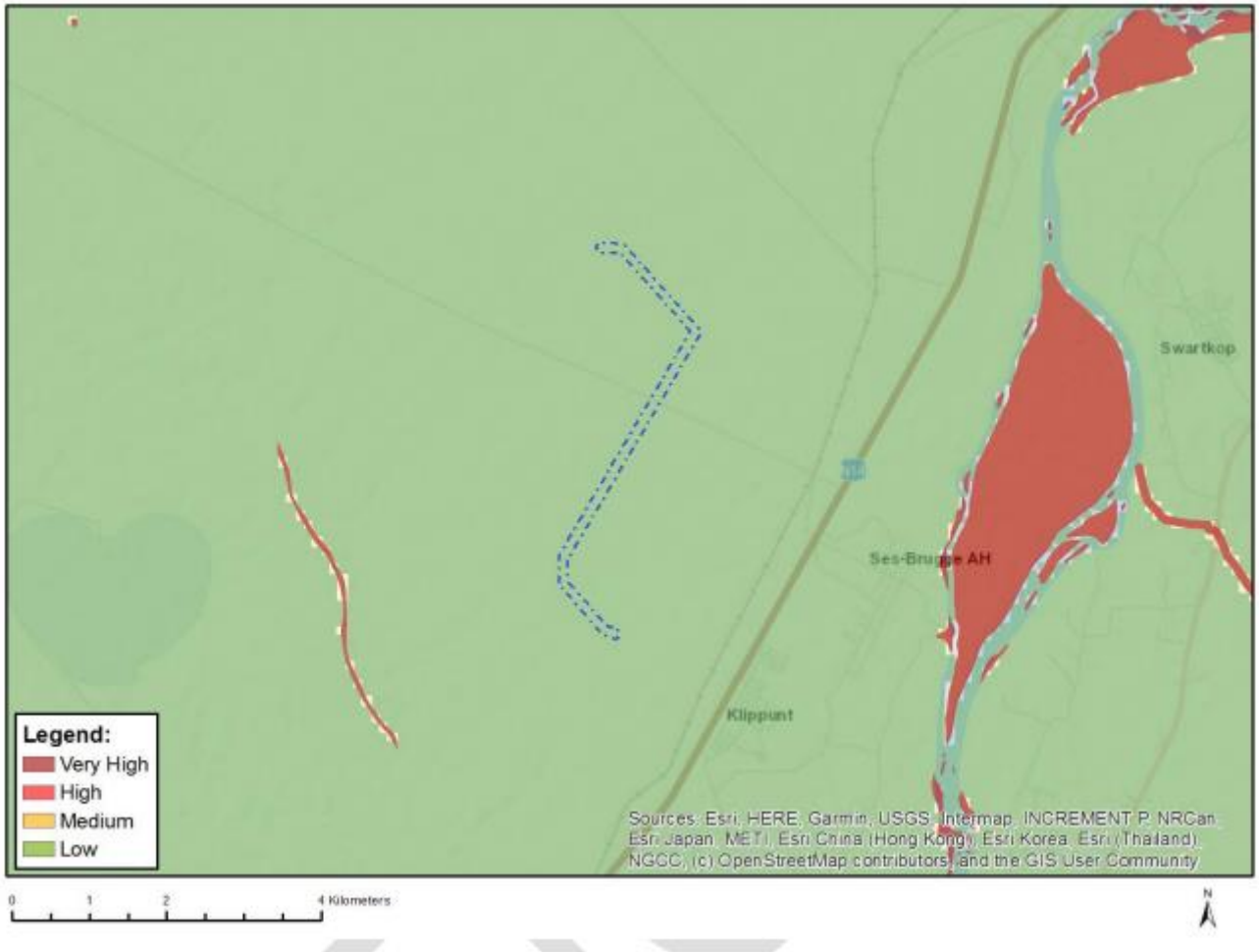

Figure 4: Map of relative aquatic biodiversity theme sensitivity *(map generated from DFFE Screening Tool Report)*

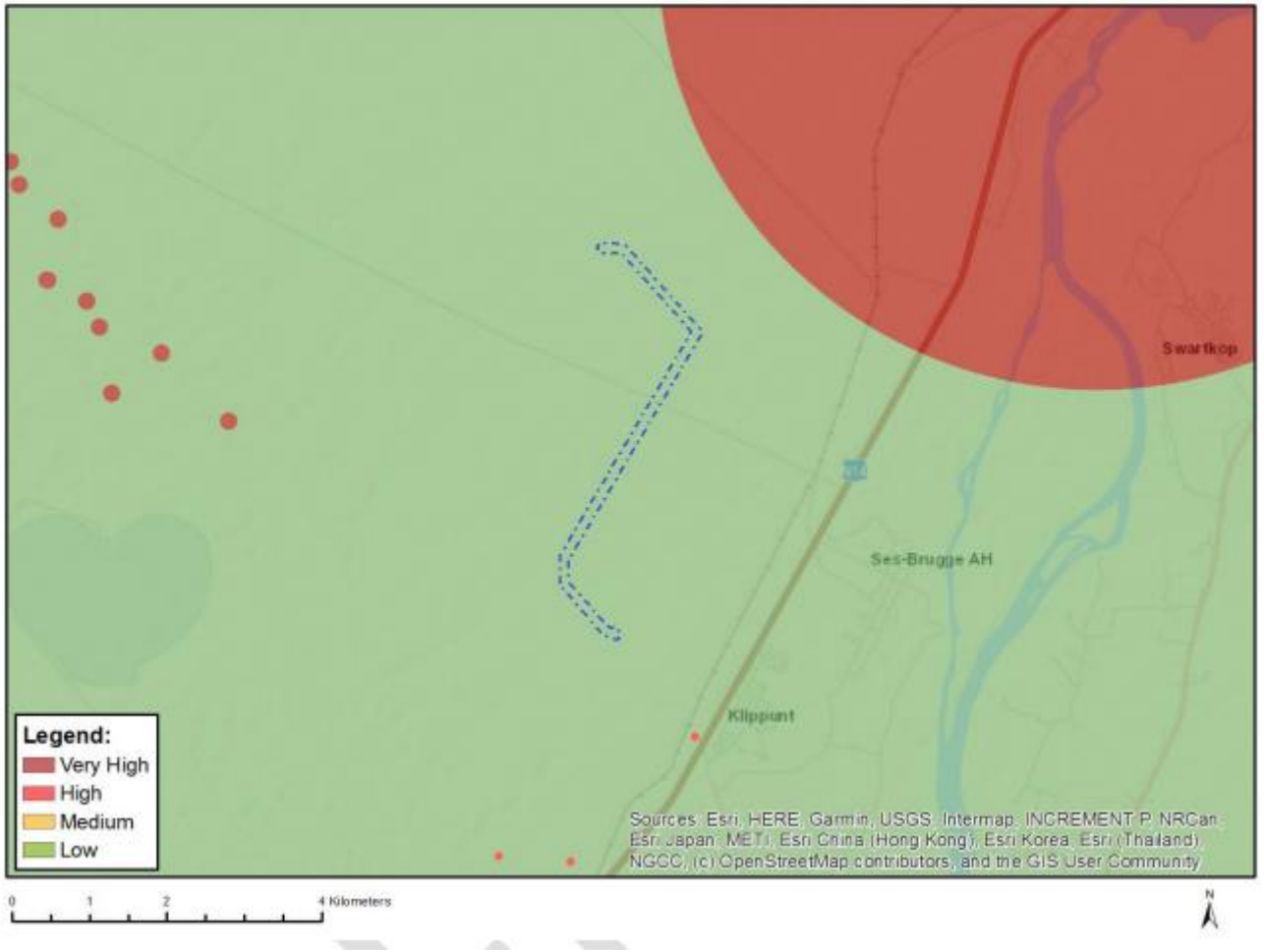

Figure 5: Map of relative archaeological and cultural heritage theme sensitivity *(map generated from DFFE Screening Tool Report)*

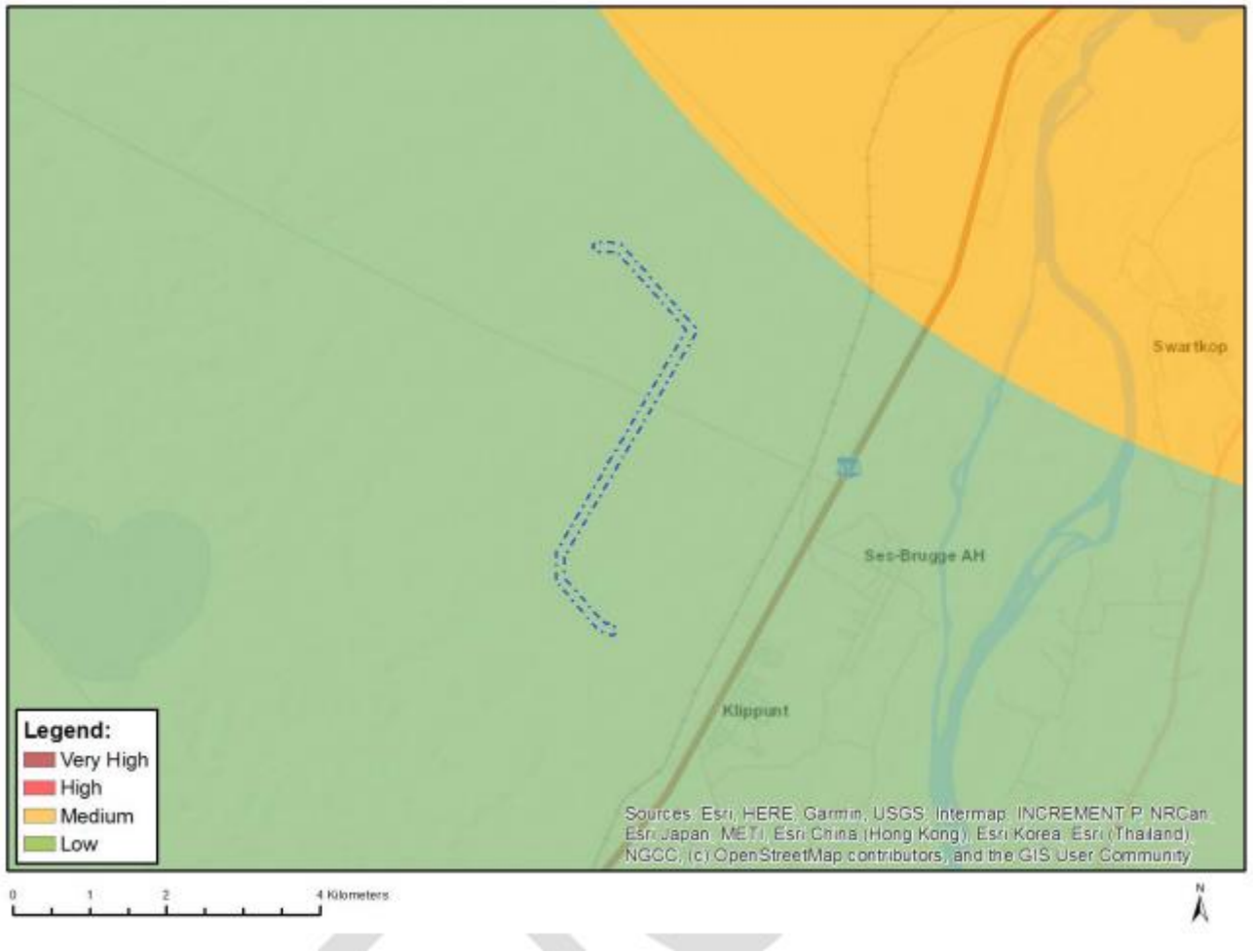

Figure 6: Map of relative civil aviation theme sensitivity *(map generated from DFFE Screening Tool Report)*

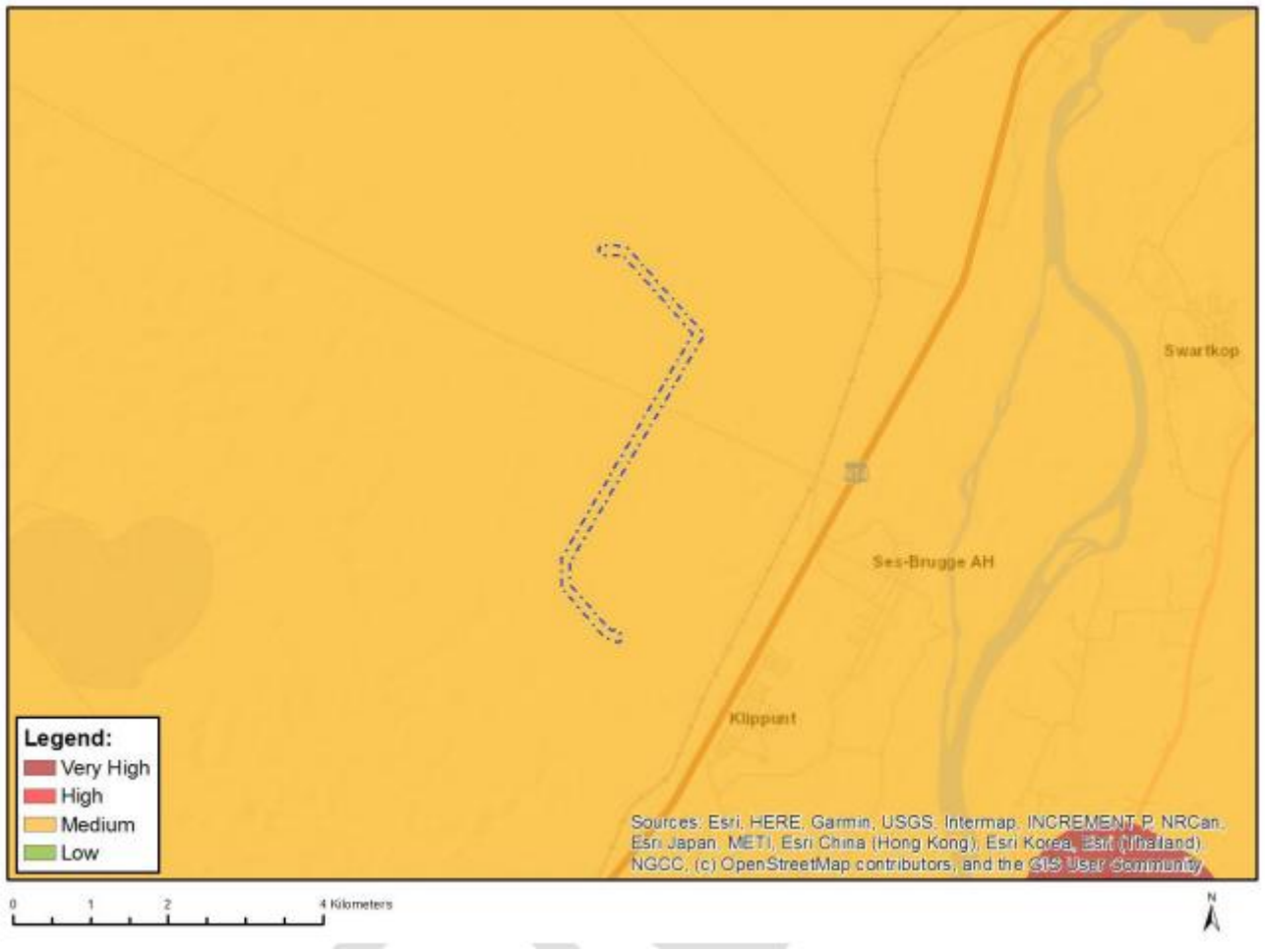

Figure 7: Map of relative defence theme sensitivity *(map generated from DFFE Screening Tool Report)*

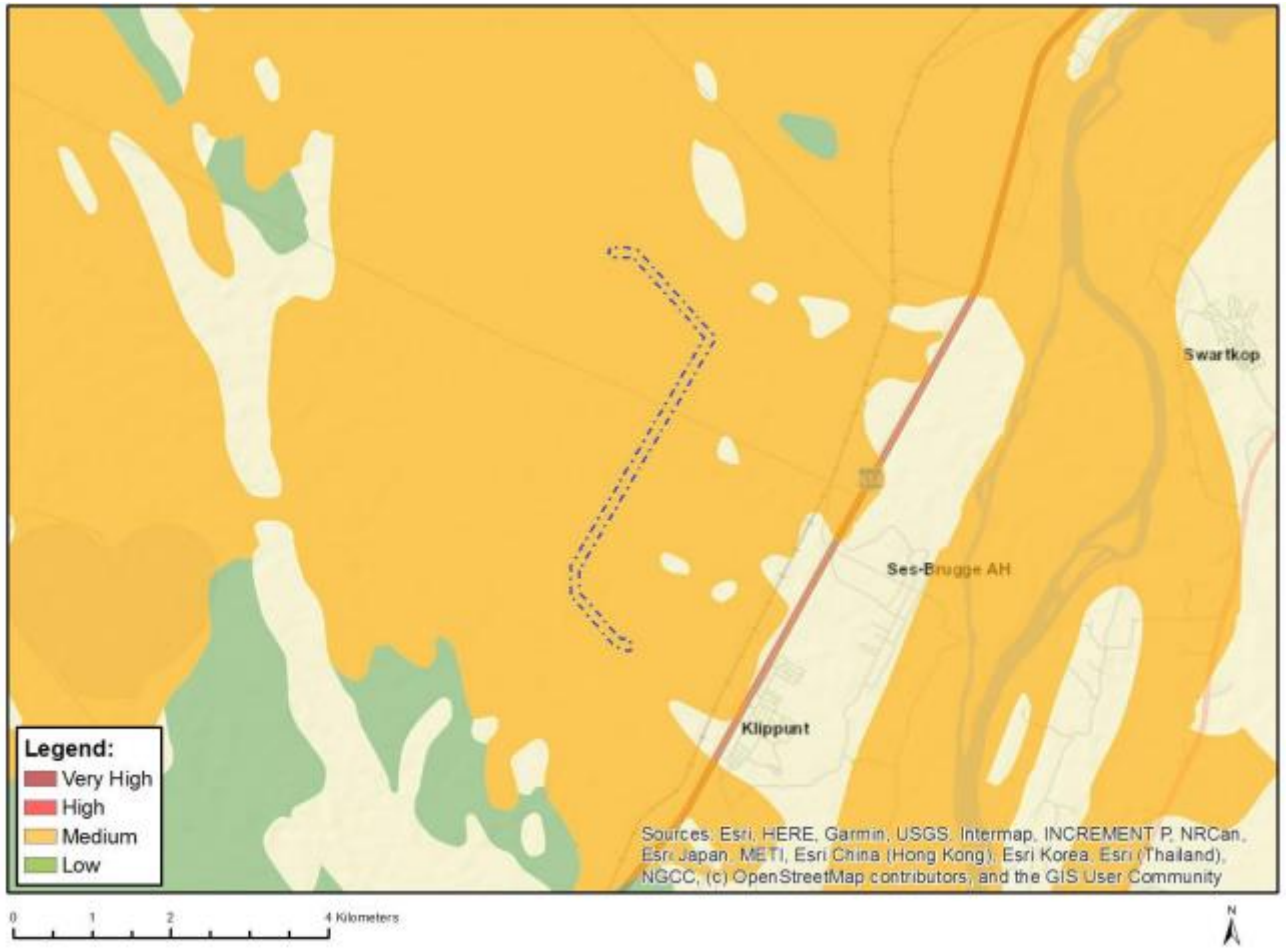

Figure 8: Map of relative palaeontology theme sensitivity *(map generated from DFFE Screening Tool Report)*

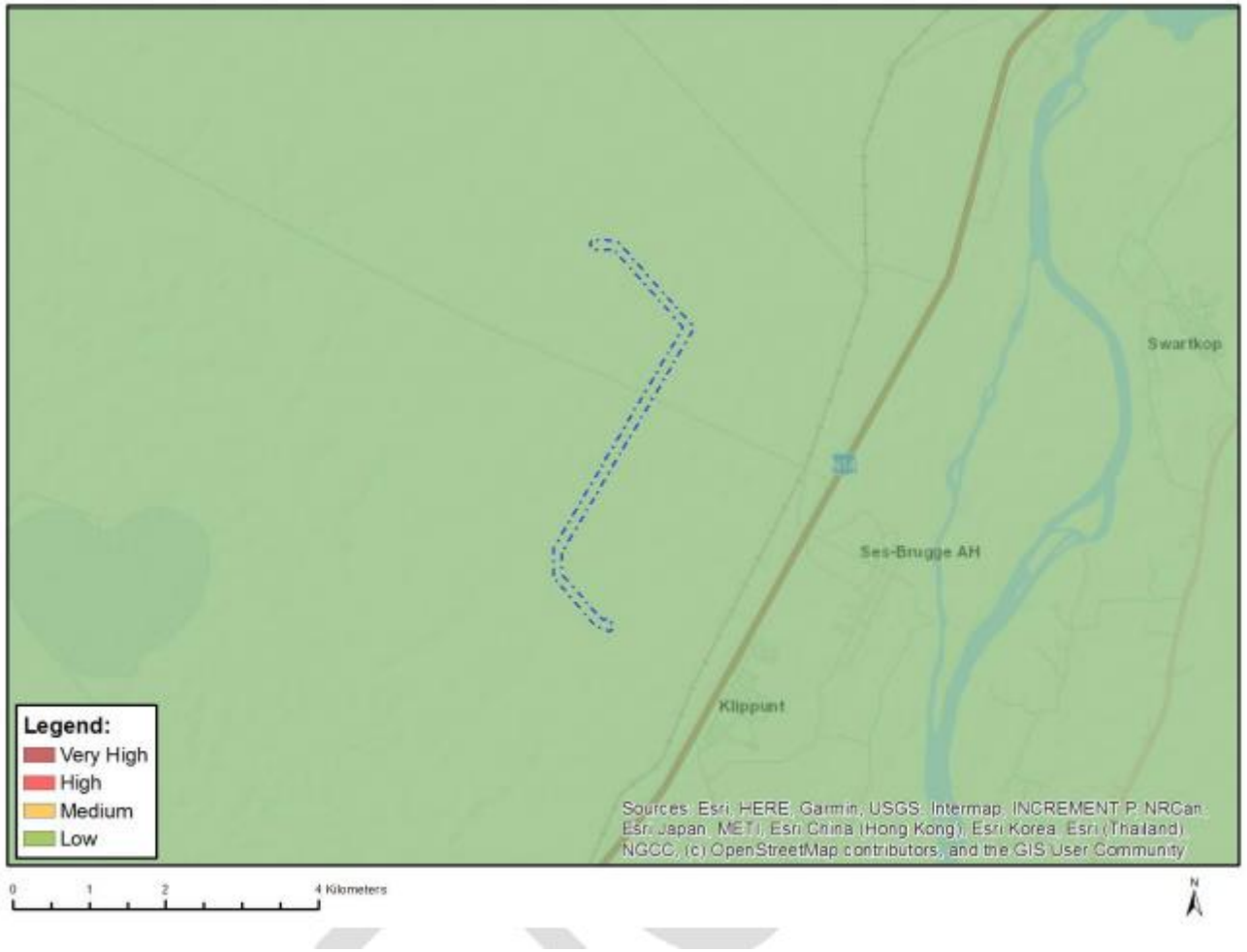

Figure 9: Map of relative plant species theme sensitivity *(map generated from DFFE Screening Tool Report)*

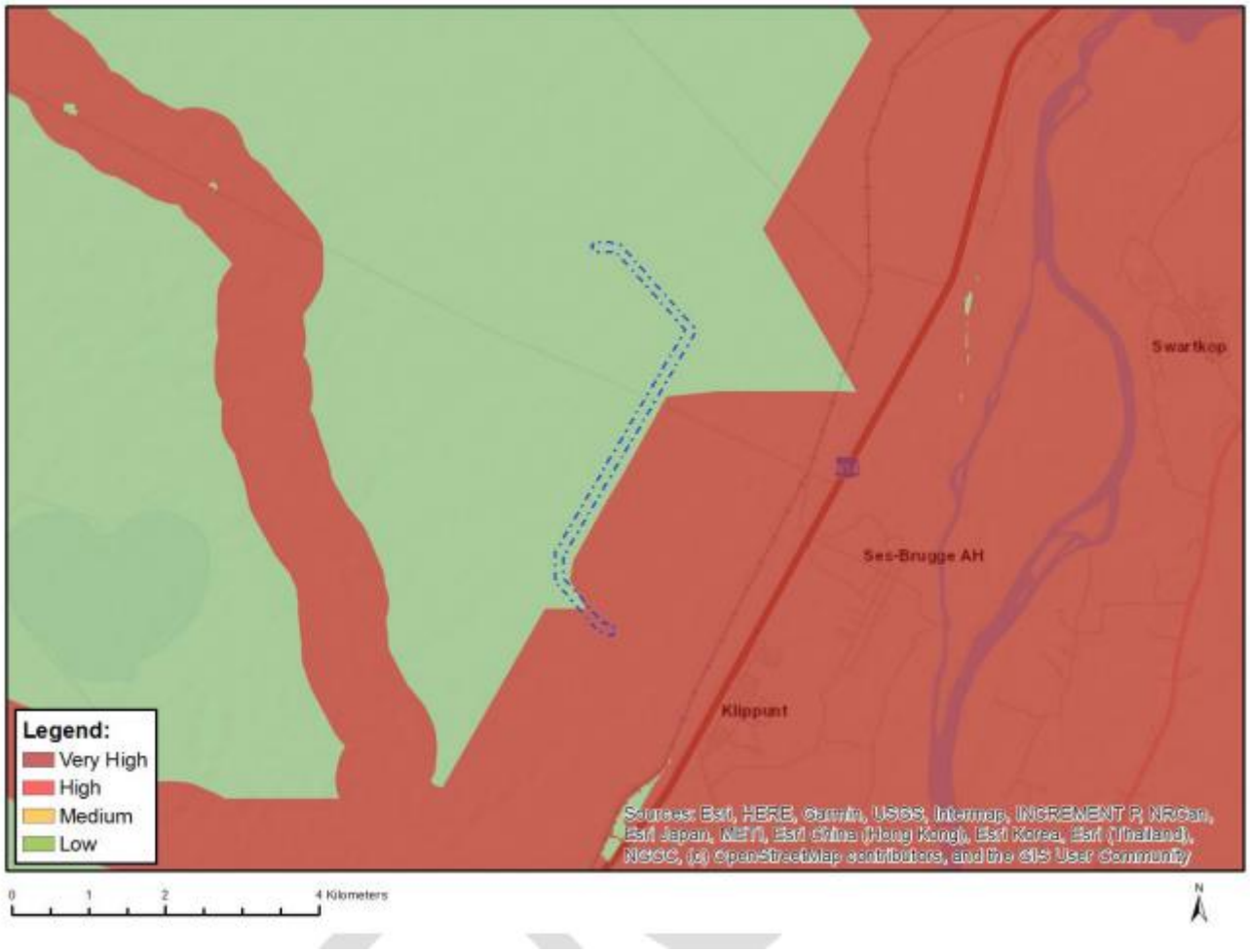

Figure 10: Map of relative terrestrial biodiversity theme sensitivity *(map generated from DFFE Screening Tool Report)*

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

Impact management outcome: Minimal disturbance to vegetation and habitats						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
All personnel to undergo Environmental Awareness Training. A signed register of attendance must be kept for proof. Discussions are required on sensitive environmental receptors within the project area to inform contractors and site staff of the presence of species, their identification, conservation status and importance, biology, habitat requirements and management requirements within the Environmental Authorisation.	DPM Contractor Health and Safety Officer	Environmental awareness training and induction must cover this aspect	Once-off at Pre-construction	ECO	Once-off	Induction material and induction attendance register

Impact management outcome: Minimal disturbance to vegetation and habitats						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
All development areas must be clearly demarcated, and restricted to the proposed development areas/corridors.	DPM Contractor	Walkthrough by the relevant parties are undertaken. Development areas are visibly demarcated.	Pre-Construction Construction	ECO	Once-off	No infringement into these areas
Areas of indigenous vegetation outside of the direct project footprint, should under no circumstances be fragmented or disturbed further.						No signs of indigenous vegetation clearance within the natural areas (*Karoo scrub, Rocky outcrops and Riparian thicket*)
All activities must make use of existing roads and tracks as far as practically and feasibly possible.	DPM Contractor	Existing roads and tracks to be used must be physically demarcated and mapped.	Construction Post-construction of pylon and powerline	ECO	Continuous during construction and operational phases	Existing roads and paths are used, as far as possible.
Apply for a permit to relocate protected plant species into	DPM Contractor	Permit and conditions are	Pre-Construction	ECO	Once-off	Permit obtained from the Northern

Impact management outcome: Minimal disturbance to vegetation and habitats						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
the on-site relocation areas already used for transplantation of rescued pants or if not available, then to similar habitat recommended by a specialist.		strictly adhered to.				Cape Department of Environment and Nature Conservation (Kimberly)
All laydown areas, chemical toilets etc. should be restricted to 'Very Low' Site Ecological Importance (SEI) areas. Any materials may not be stored for extended periods of time and must be removed from the project area once the construction phase has been concluded. Use of re-usable/recyclable materials are recommended.	DPM Contractor	Laydown areas, ablution facilities, storage areas etc are physically demarcated and mapped. Refuse bins are clearly marked for re-usable / recyclable materials. The Waste Management Plan is implemented.	Pre-construction Construction Operational	ECO	Once-off during Pre-Construction Continuous during construction and operation	Laydown areas, ablution facilities and material storage and placement areas occur in approved areas. There are no signs of littering on site. Waste bins are used appropriately.
Progressive rehabilitation of areas that have been cleared of	DMP Contractor	Rehabilitation is in accordance with the Site	Post-Construction Operation	ECO	Once-off	Rehabilitation is as per the Rehabilitation Plan.

Impact management outcome: Minimal disturbance to vegetation and habitats						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
invasive plants will enable topsoil to be returned more rapidly, thus ensuring more recruitment from the existing seedbank. Any woody material removed can be shredded and used in conjunction with the topsoil to augment soil moisture and prevent further erosion.		Rehabilitation Plan				No signs of erosion.
Areas that have been disturbed but will not undergo development must be revegetated with indigenous vegetation.	DPM Contractor	Rehabilitation is in accordance with the Site Rehabilitation Plan	Post-Construction	ECO	Once-off	Rehabilitation occurs with indigenous vegetation.
Eroded areas must be rehabilitated using the appropriate techniques and re-vegetated using indigenous flora.						There are no signs of erosion.

Impact management outcome: Minimal disturbance to vegetation and habitats						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The footprint area of the construction should be kept to a minimum. The footprint area must be clearly demarcated to avoid unnecessary disturbances to adjacent areas thereby causing further encroachment of invasive species.	DPM Contractor	Footprint for construction is physically demarcated and mapped.	Pre-construction Construction	ECO	Once-off Continuous	Construction activities are confined to the demarcated areas. No evidence of spreading of alien invasive plant species.

Impact management outcome: Minimal disturbance to fauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
A qualified environmental control officer must be on site when construction begins to identify fauna species that will be directly disturbed and to relocate protected fauna/flora that are found during the construction activities. The area must be walked though prior to construction to ensure no faunal species remain in the habitat and get killed. Should animals not move out of the area on their own relevant specialists must be contacted to advise on how the	DPM Contractor	Walkthrough by the Contractor, ECO and faunal specialist are undertaken to detect sensitive faunal habitats. Permit is obtained for the removal/relocation of Protected Plant Species. Faunal specialist is contacted in the event that faunal species require relocation.	Pre-Construction Construction	ECO	Once-off, prior to the commencemnt of construction During construction, if necessary.	Records are filed of walkthrough undertaken and photographic evidence of areas surveyed. The conditions of the permit are adhered to. Faunal specialist is appointed if relocation of faunal species is required.

Impact management outcome: Minimal disturbance to fauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
species can be relocated.						
Noise must be kept to an absolute minimum during the evenings and at night to minimize all possible disturbances to amphibian species and nocturnal mammals.	DPM Contractor	Ensure that noise limits do not exceed acceptable limits and avoid the use of amplification communication	Construction	ECO	Continuous	No complaints from stakeholders
No trapping, killing, or poisoning of any wildlife is to be allowed.	Contractor	Environmental awareness training and induction must cover this aspect	Pre-Construction Construction	ECO	Continuous	No complaints from stakeholders No faunal mortalities
The duration of the construction should be minimized to as short term as possible, to reduce the period of disturbance on fauna	Contractor	Construction timeframes are adhered to.	Construction	ECO	Continuous	Construction timeframes are strictly adhered to, and there are no complaints from stakeholders.

Impact management outcome: Minimal disturbance to fauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Perches (if in accordance with Eskom Standards) should be placed on pylons to allow for avifauna to perch on the pylons in positions safe from electrocution.	cEO / dEO and Contractor	Design of the pylons complies with Eskom Standards.	Pre-Construction Construction Operation	ECO	Once-off	No evidence of carcasses
Quarterly reports summarizing interim findings should be complied by the owner of the powerlines and submitted to BirdLife South Africa. If the findings indicate that electrocutions have not occurred or are minimal with no red-listed species, an annual report can be submitted.	Developer	Quarterly reports of interim findings of bird investigations. Annual reports of bird investigations.	Operation	ECO Eskom Maintenance Team	Quarterly or annually	No evidence of carcasses

Impact management outcome: Minimal disturbance to fauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Infrastructure should be consolidated where possible to minimise the amount of ground and air space used. This would involve using existing/approved pylons and associated infrastructure for the kV lines.	cEO / dEO and Contractor	Design of the pylons complies with Eskom Standards.	Pre-Construction Construction Operation	ECO	Once-off	Design specifications are met in line with Eskom Standard requirements.
All mitigation measures and conditions arising from the WUL/GA must be strictly adhered to during all phases of the project.	Developer cEO / dEO and Contractor	Update the EMPr to include site-specific information regarding the conditions and mitigation measures arising from the WUL/GA	Pre-Construction Construction Operation	ECO DPM	Continuous	Mitigation measures are complied with and there are no non-conformances during audits.
Powerlines must be marked with industry standard (*at the time of*	Developer cEO / dEO and Contractor	Design of the powerlines complies with Eskom Standards.	Construction Operation	ECO	Continuous	Bird diverters on the powerlines are in accordance with Eskom Standards

Impact management outcome: Minimal disturbance to fauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
construction) bird flight diverters.						and Specifications.

Impact management outcome: Minimal disturbance to avifauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
All areas to be developed must be walked through prior to any activity to ensure no nests or avifauna species are found in the area. Should any Species of Conservation Concern be found and not move out of the area or their nest be found in the area a suitably qualified specialist must be consulted to advise on the correct actions to be taken.	DPM Contractor	Walkthrough by the Contractor, ECO and avifaunal specialist are undertaken to detect sensitive avifaunal habitats.	Pre-Construction	ECO	Once-off, prior to the commencemnt of construction	Records are filed of walkthrough undertaken and photographic evidence of areas surveyed.
Rehabilitation of the disturbed areas existing in the project area must be made a priority. Topsoil must also be utilised, and any disturbed area	DPM Contractor	Rehabilitation is undertaken as part of the Revegetation and Rehabilitation Plan.	Post-Construction	ECO	Once-off, post-construction	Records are filed of compliance to the Revegetation and Rehabilitation Plan.

Impact management outcome: Minimal disturbance to avifauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
must be re-vegetated with plant and grass species which are endemic to this vegetation type.						
All personnel should undergo environmental induction with regards to avifauna and in particular awareness about not harming, collecting, or hunting terrestrial species (e.g., guineafowl and francolin), and owls, which are often persecuted out of superstition. Signs must be put up to enforce this.	DPM Contractor	Environmental induction covers management of avifauna	Pre-construction	ECO	Once-off during Pre-construction	Environmental induction presentation covers management of avifauna Attendance register of environmental induction
All construction and maintenance motor vehicle	DPM Contractor	Environmental induction covers	Pre-construction	ECO	Once-off during Pre-construction	Environmental induction presentation

Impact management outcome: Minimal disturbance to avifauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
operators should undergo an environmental induction that includes instruction on the need to comply with speed limit (40km/h), to respect all forms of wildlife. Speed limits must still be enforced to ensure that road killings and erosion is limited.		measures to prevent roadkills				covers measures to prevent roadkills. Attendance register of environmental induction
Schedule or limit (where feasible) activities during least sensitive periods, to avoid migration, nesting and breeding seasons (May – August).	DPM Contractor	Avifaunal specialist recommendations are adhered to.	Construction	ECO	Duration of construction	No complaints from ECO

Impact management outcome: Minimal disturbance to avifauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
All project activities must be undertaken with appropriate noise mitigation measures to avoid disturbance to avifauna population in the region.	Contractor	Develop an appropriate method statement in consultation with the avifaunal specialist	Continuous during Construction	ECO	Continuous	Method Statement that meets this requirement
All areas to be developed must be walked through prior to any activity to ensure no nests or avifauna species are found in the area. Should any Species of Conservation Concern be found and not move out of the area or their nest be found in the area a suitably qualified specialist must be consulted to advise on the correct actions to be taken.	DPM Contractor	Walkthrough by the Contractor, ECO and avifaunal specialist are undertaken to detect sensitive avifaunal habitats.	Pre- Construction	ECO	Once-off, Pre-construction	Records are filed of walkthrough undertaken and photographic evidence of areas surveyed. Avifaunal specialist advises on the management of SCC and nests, if found on site.

Impact management outcome: Minimal disturbance to avifauna						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
All the parts of the infrastructure must be nest proofed and anti-perch devices placed on areas that can lead to electrocution.	DPM Contractor	Nest proofing and anti-perch devices are installed on infrastructure as per Eskom standard guidelines.	Construction Operation	ECO	Continuous	Photographic evidence of nest proofing and anti-perch devices on the infrastructure.
Any exposed parts must be covered (insulated) to reduce electrocution risk.	DPM Contractor	Infrastructure is insulated as per Eskom standard guidelines.	Operation	ECO	Continuous	Register of inspection

Impact management outcome: Minimal disturbance to wetlands and watercourses						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Move pylons outside of the drainage systems	Contractor	Site Layout Map indicating all pylon positions	Pre-construction Continuous during Construction	ECO	Continuous	No construction activity recorded in the drainage systems.
Those powerline pylons located near drainage features needs to be moved away far enough so that the edge of the pylon's footprint areas is located at least 10 m away from the edge of the drainage feature	Contractor	Site Layout Map indicating all pylon positions	Pre-construction Continuous during Construction	ECO	Continuous	No construction activity recorded in the drainage systems.
Revegetate bare areas after construction	Contractor	Revegetation and Rehabilitation Plan is strictly adhered to.	Continuous during post-construction	ECO	Continuous	No complaints regarding non-conformances to Revegetation and Rehabilitation Plan. No signs of erosion

Impact management outcome: Minimal disturbance to wetlands and watercourses						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Ensure that construction is done during dry season	Contractor	Timeframes for construction are approved by the ECO	Continuous during Construction	ECO	Continuous	No signs of erosion

Impact management outcome: Minimal visual intrusion and change of sense of place						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Where powerlines can be placed in parallel with (and pylons in sync) and adjacent to existing lines, this should be done. In these cases, design of pylon position and size should mirror the existing powerlines.	DPM Contractor	Powerline and pylon positions are to be physically marked and mapped. This must be approved by the ECO.	Pre-Construction	ECO	Once-off	Powerline and pylon positions are located parallel to the existing adjacent powerlines, as far as possible.
Alignment of powerlines must be parallel and adjacent to existing powerlines wherever possible, ensuring that the impact of these features is masked by existing powerline infrastructure.	DPM Contractor	Powerline and pylon positions are to be physically marked and mapped. This must be approved by the ECO.	Operational	ECO	Once-off	Powerline and pylon positions are located parallel to the existing adjacent powerlines, as far as possible.

Impact management outcome: Minimal impact on heritage and palaeontological resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
If during construction, any possible finds such as stone tool scatters, artefacts or bone and fossil are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the finds, and therefore Chance Find Procedures should be implemented as follows: Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below. - If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors	Developer Contractor Service Provider Archaeologist	Adherence to the Chance Finds Procedure	Construction	ECO	As and when neccessary	Documented proof of compliance with the Chance Finds Procedure

Impact management outcome: Minimal impact on heritage and palaeontological resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
and subcontractors, or service provider, finds any stone tool scatters, artefacts or bone and fossils, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager. - It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area. - The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.						

Impact management outcome: Minimal impact on heritage and palaeontological resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
The following procedure is only required if fossils are seen on the surface and when drilling/excavations commence. - When excavations begin the rocks must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the project activities will not be interrupted. - Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones. This information must be built into the environmental training and awareness plan and procedures.	Developer Contractor Service Provider Palaeontologist	Strict adherence to the Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.	Construction	ECO	As and when palaeontological resources are uncovered.	Documented proof of compliance with Monitoring Programme for Palaeontological resources.

Impact management outcome: Minimal impact on heritage and palaeontological resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. - If there is any possible fossil material found by the developer/environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible. - Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from						

Impact management outcome: Minimal impact on heritage and palaeontological resources						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits. - If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils. - If no fossils are found and the excavations have finished then no further monitoring is required.						

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.

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 CV

ZITHOLELE CONSULTING

Professional Registrations:

- (EAPASA) Environmental Assessment Practitioners Association of South Africa

Position:

Senior Environmental Scientist

Specialisation:

- Screening Assessments
- Basic Assessments
- Scoping and Environmental Impact Reports (S&EIR'S)
- Water Use License Applications (WULA)
- Waste Management Licenses (WML)

Education:

- MSc. Environment and Society, 2002 University of Pretoria
- BSc. Hons, Geography, 2000 University of Kwa-Zulu Natal
- BSc. Botany and Geography, 1999 University of Kwa-Zulu Natal

Ms. Natasha Lalie

KEY EXPERIENCE

Ms. Natasha Lalie is an Environmental Assessment Practitioner (EAP) with 18 years of experience. She has undertaken numerous Exemption Applications, Screening Assessments, Basic Assessment Reports (BAR's), Scoping Reports, Environmental Impact Reports (EIR's) and Environmental Management Programmes (EMPr's), as required by the Environmental Conservation Act, 1989 (Act No. 73 of 1989) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the Environmental Impact Assessment (EIA) Regulations of 2006, 2010 and 2014 (as amended). Natasha has also undertaken Integrated Water Use Licence Applications (IWULA's) for a number of projects, as required by the National Water Act, 1998 (Act No. 36 of 1998). She has been involved in a wide range of projects, which included waste management, industrial, township establishments, mixed-use development, road upgrades, infrastructure developments, dam construction, change of land use, lodge developments, proposed bulk water pipelines, proposed transmission power lines, renewable energy projects, tourism and recreation, proposed filling stations and shopping centre developments.

PROJECT EXPERIENCE

2020 Polihali Dam and Appurtenant Works, Lesotho
Updating of the Construction Environmental Management Plan, Compilation of Environmental Specifications and Environmental Baseline Report for construction of the dam and appurtenant works for Lesotho Highlands Development Authority, Lesotho.

2018 Ngqeleni Electrification Phase 3, Eastern Cape
Basic Assessment (BA), General Authorisation (GA), Permit for construction in Coastal Conservation Area (CCA) and management of permit application for removal of Protected Trees in a natural forest for the proposed electrification of three villages i.e Egoli, Ntshintshani and Mdzweni, near Port St. Johns, Eastern Cape.

2018 Proposed upgrade of Collingwood School, Bluff, KwaZulu-Natal
Project Management for Screening Assessment

2018 - Proposed Advanced Water Treatment Demonstration Project, KwaZulu-Natal
Compilation of Final Scoping Report and Integrated WULA for the project site located at Central Waste Water Treatment Works (CWWTW) at Bluff.

2018 Proposed Support Precinct 2 Development, La Mercy, eThekwini, KwaZulu-Natal
Scoping and Environmental Impact Report (S&EIR) for the project located at La Mercy, eThekwini, KwaZulu-Natal

2017 Inyaninga Human Settlements Development, KwaZulu-Natal
S&EIR, Amendment of Environmental Authorisation (EA) and WULA for a mixed-use development in Tongaat, KwaZulu-Natal

2017 Proposed Trade Zone 2 development, La Mercy, KwaZulu-Natal
S&EIR for the project located at La Mercy, eThekwini, KwaZulu-Natal

2017 Proposed construction of the eThekwini Bus Rapid Transit (BRT), Phase 1 Route C1A from MR577 to the Chris Hani Road Interchange for the eThekwini Municipality, KwaZulu-Natal
IWULA for several wetland crossings
Compilation of IWULA and Integrated Water and Waste Management Plan (IWWMP) for Section 21(c) and 21(i) water use activities.

2016 Northern Aqueduct Phase 5, KwaZulu-Natal
BA and Water Use License Application (WULA) for the proposed Northern Aqueduct Phase 5 from Reservoir Hills to Duffs Road, Avoca, KwaZulu-Natal

2016 Phase 1A: Proposed Upgrade of Gravel Roads off Main Road, between Shakas Head and Shakas Rock, KwaDukuza Local Municipality, KwaZulu-Natal
Compilation of Screening Report and Specialist Management. Compilation of, and submission of EIA Enquiry with KZN EDTEA.

2016 Phase 1B: Proposed Proposed upgrade of Old Fort Road, upper Salt Rock Road and the western extent of Sheffield Beach Road, KwaDukuza, KwaZulu-Natal
Compilation of Screening Report and Specialist Management

2015 Proposed Okanhandja medical facility, Namibia
Compile Final Scoping Report and interpretation of Specialist Studies.

2014 – Proposed upgrade of N2 between Mthunzini Toll Plaza to the Empangeni T-Junction, , KwaZulu-Natal
BA, IWULA, Mining Permit Application and Mining Permit EMPr

PROJECT EXPERIENCE (continued)

2014 Proposed construction of the Botshabelo Interchange, Manguang Local Municipality, Free State
Basic Assessment and Specialist management.
2012 Lower Thukela Bulk Water Supply Scheme, KwaZulu-Natal
Scoping and Environmental Impact Reporting (S&EIR) process for the proposed Lower Thukela Bulk Water Supply Scheme from Mandini to KwaDukuza, KwaZulu-Natal
2013 -Proposed Transnet Waste Tyre Storage Facility, Bayhead, KwaZulu-Natal

BA and Waste Management License (WML)

2013 Proposed expansion of the Wastewater Treatment Works in Prospecton, KwaZulu-Natal
S&EIR Process for WML.
2013 Proposed Wastewater Treatment Works for a snack facility in Prospecton, KwaZulu-Natal BA for WML
2013 Proposed Giant Flag Development, Graaf-Reinet, E. Cape
S&EIR process
2012 Proposed construction of various solar plants in Northern Cape, Free State and Mpumalanga
Public Participation Process Practitioner.
2010 Proposed eThekwini Variable Message Signs (VMS) and surveillance cameras along the N2 and N3 falling within the eThekwini Municipal Boundary, KwaZulu-Natal
BA process.
2010 Proposed Construction of Four Causeways in the Ugu District Municipality, KwaZulu-Natal
Project Management and BA process.
2009 Proposed upgrade of Road P73 near Mthwalume, , KwaZulu-Natal
Project Management and Basic Assessment process.
2009 Proposed upgrade and construction of local roads and causeways at DC21 in Ugu District Municipality, KwaZulu-Natal
Project Management and Basic Assessment process.
2009 Proposed P58 road upgrade in Izingolweni near Port Shepstone, KwaZulu-Natal
Project Management and Basic Assessment process.
2008 Proposed extension of the existing emergency storage dam at the Alton macerator site in Richards Bay, Umhlathuze Local Municipality, KwaZulu-Natal
Project Management and Basic Assessment process.
2008 Proposed upgrade of the existing Sugar Ray Xulu Stadium, Clarement, KwaZulu-Natal
Project Management and Basic Assessment process.
2008 Proposed construction of Qoloqolo Pedestrian Bridge in Mthwalume, KwaZulu-Natal
Project Management and Basic Assessment process.
2008 Proposed Spencer – Tabor 275 KV transmission power line, near Duiwelskloof, Limpopo
Compilation of Scoping and EIR.
2008 Proposed residential resort and golf course at the K'Shani Nature Reserve in Mpumalanga
Compilation of Scoping and EIR.
2006 Proposed township establishment: Annlin Extension 117 in Tshwane, Gauteng
Compilation of Exemption Report.
2006 Proposed road upgrade at the Road D374 and Road D540 Intersection at Muldersdrift in Gauteng
Compilation of Exemption Report.

2005 **Proposed change of land use from "Agricultural" to "Residential 5", Gauteng**
Compilation of Exemption Report.
2005 **Proposed establishment of lodges on a portion of the farm Lekkergoed, Limpopo**
Compilation of Scoping Report
2005 **Proposed establishment of Pomona Extension 81, Pomona, Gauteng**
Compilation of Scoping Report
2005 **Proposed establishment of a residential development in Pomona Extension 1, Gauteng**
Compilation of Scoping Report
2005 **Proposed township establishment - "Cashan Ext. 17, Rustenburg, North-West Province**
Compilation of Scoping Report
2005 **Proposed office park/light industrial development in Jetpark, Gauteng**
Compilation of Scoping Report
2005 **Proposed upgrading of a homestead at the Rietvlei Nature Reserve, Tshwane, Gauteng**
Compilation of Exemption Report.
2005 **Proposed upgrade of the existing gravel roads at the Lesetlheng Village**
Compilation of Exemption Report.
2004 **Proposed upgrading and re-alignment of Road D2721 between Sonop and Segwaelane Townships, Brits, North West Province**
Compilation of Scoping Report
2004 **Proposed Bushlodge at the Marakele Park (Pty) Ltd, Limpopo Province**
Compilation of Scoping Report
2004 **Compost handling facility, in Bartlett, Boksburg, Gauteng**
Compilation of Scoping Report
2004 **Proposed establishment of a resort in Swartruggens, North West Province**
Compilation of Scoping Report.
2004 **Proposed shopping centre in Kempton Park; Gauteng**
Compilation of Scoping Report.
2004 **Proposed Mixed-Use Development on Forest Farm, Gauteng**
Compilation of Scoping Report.
2004 **Township Establishment in Brakfontein, Centurion, Gauteng**
Compilation of Scoping Report.
2004 **Rezoning and alienation of a park in Laudium, Tshwane, Gauteng**
Compilation of Exemption Report.
2004 **Rezoning and alienation of a park in Meyers Park, Tshwane, Gauteng**
Compilation of Exemption Report.
2004 **Proposed desilting of the Alberton Dam, Gauteng**
Compilation of Scoping Report.
2003 **Widening of London Road and the upgrading of a bridge across the Jukskei River, Alexandra, Gauteng**
Compilation of Exemption Report.
2003-2004 **Proposed Waste Transfer Station in Nigel, Gauteng**
Application for Waste Disposal Site Permit under Section 20 of the Environment Conservation Act, 1989 (Act No.73 of 1989, and Addendum to the Scoping Report and EMPr. Compilation of Operational and Monitoring Plan
2003 **Sustainable Rural Settlement, Mogale City, Gauteng**
Compilation of Concept Document.

PROFESSIONAL SOCIETIES

Registered EAP – EAPASA

EMPLOYMENT RECORD

2021 - Present	Zitholele Consulting	Senior Environmental Scientist
2015 - 2021	Gibb Engineering and Architecture (Pty) Ltd	Senior Environmental Scientist
2007 - 2015	Strategic Environmental Focus (Pty) Ltd	Environmental Manager (Durban Office)
2003 - 2007	Strategic Environmental Focus (Pty) Ltd	Environmental Manager (Pretoria Office)