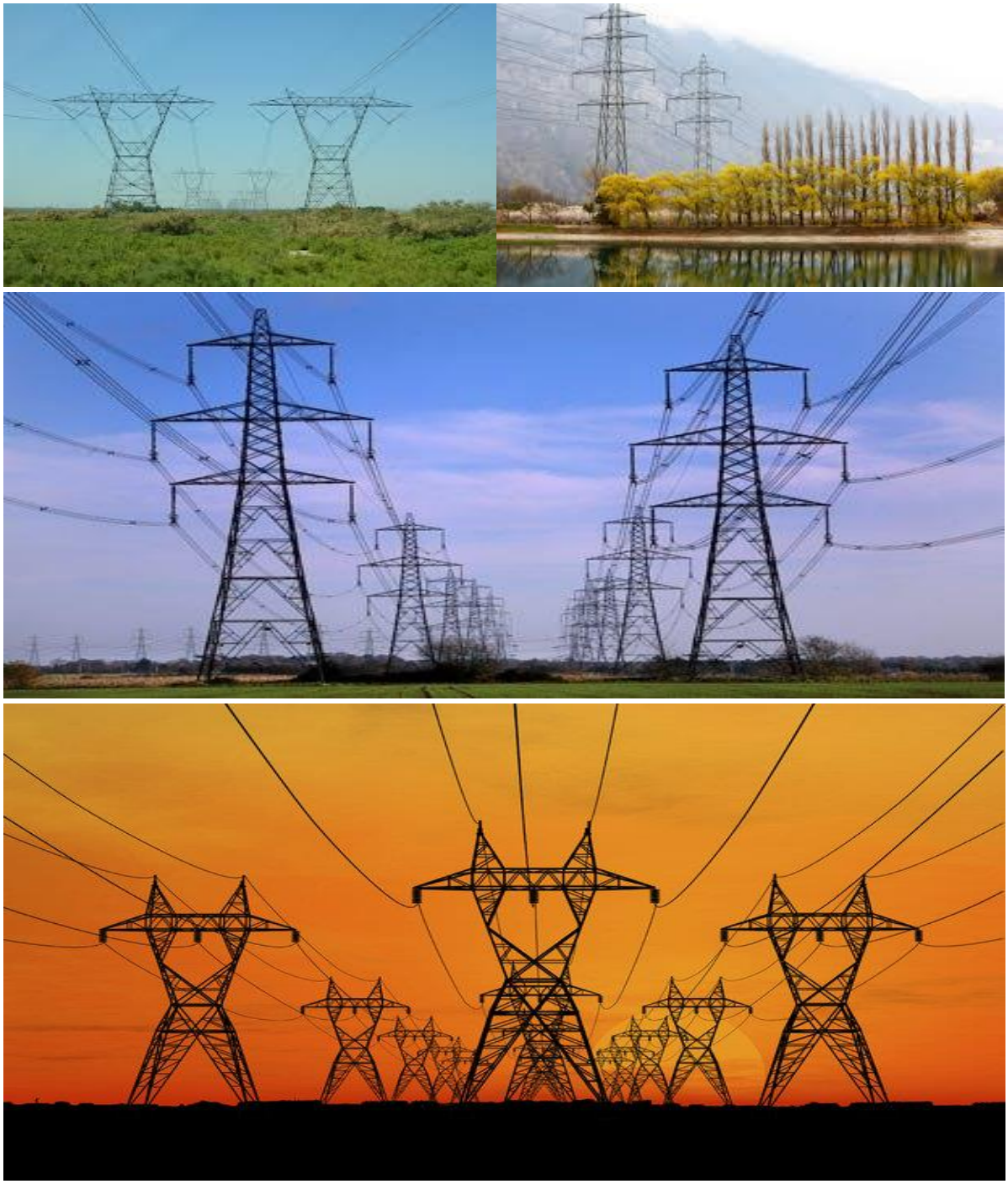
APPENDIX 1

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

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

Part	Section	Heading	Content
			approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact 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	Environment 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&APs	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.

Responsible Person (s)	Role and Responsibilities
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 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&APs), 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

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

Responsible Person (s)	Role and Responsibilities
	- 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 (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management:

Responsible Person (s)	Role and Responsibilities
	- Reporting environmental incidents to the 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 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. <u>Responsibilities</u> - 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;

Responsible Person (s)	Role and Responsibilities
	- ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	Role Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: Responsibilities - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - 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 Substances;
- 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. Where0 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 understand 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	Hold environmental awareness training workshops	Pre-construction Construction	ECO dEO	Monthly and as and when required	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	Scheduling of sufficient sessions through consultation with the ECO / cEO / dEO	Pre-construction Construction	ECO dEO	Monthly and as and when required	Attendance register and training minutes / notes for the record
– Refresher environmental awareness training is available as and when required;	cEO / dEO in consultation with the ECO	Hold refresher environmental awareness training workshops	During the construction phase	ECO dEO	Monthly and 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;	cEO / dEO	Hold training workshops and ensure that the EA and EMPr is readily available	During the construction phase	ECO dEO	Monthly and as and when required	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: a) Safety notifications; and	Contractor	Develop and place appropriate	Pre-construction Construction	ECO dEO cEO	Monthly	Photographic record

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
b) No littering.		posters at key 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.	cEO / dEO in consultation with the ECO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO / cEO / dEO	Filing system including all proof of training (i.e. attendance register and training minutes / notes for the record)	During the construction phase	ECO dEO	Monthly	Completed and up to date filing system with proof of training

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Educate workers on the dangers of open and/or unattended fires;	cEO / dEO in consultation with the ECO	Develop environmental awareness training material which covers the dangers of open and/or unattended fire	Pre-construction Construction	ECO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– A staff attendance register of all staff to have received environmental awareness training must be available.	ECO / cEO / dEO	Filing system including all proof of training (i.e. attendance register)	During the construction phase	ECO dEO	Monthly	Completed and up to date filing system inclusive of all attendance registers
– Course material must be available and presented in appropriate languages that all staff can understand.	ECO / cEO / dEO	Develop environmental awareness training material in the required languages. Training material must by readily available to all staff	During the construction phase	ECO dEO	Monthly	Environmental awareness training material requirements checklist and the training register which must indicate the language of the training

5.2 Site Establishment Development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint is kept to the 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	Development of an appropriate method statement	Pre-construction	ECO dEO	Once, prior to construction	Availability of the method statement which complies with the minimum requirements listed
– Location of construction 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;	DPM	Place construction camps outside of sensitive areas identified in the Basic Assessment Report	Pre-construction Construction	ECO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Sites must be located where possible on previously disturbed areas;	DPM	Place site outside of sensitive areas and within previously disturbed areas identified in the authorised BA Report	Pre-construction	ECO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas and placement within disturbed areas
– The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and	DPM	Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr	Pre-construction & Construction	ECO dEO	Once, prior to construction and once during the construction of the fencing	The camp is fenced in accordance with Section 5.5 of this EMPr
– The use of existing accommodation for contractor staff, where possible, is encouraged.	Not applicable – the development of new accommodation facilities will not be required. Staff will be accommodated in the nearby towns of Bedford and Cookhouse.					

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 in consultation with the ECO	Spatially demarcate access restricted areas informed by the BA Report	Pre-construction	ECO	Once, prior to construction	Access restricted areas are identified and provided in a spatial format
– 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 in consultation with the ECO	Erect appropriate temporary barriers around access restricted areas	At the commencement and for the duration of the construction phase	ECO	Monthly	Access restricted areas are closed-off through temporary barriers and barriers are 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 access restricted areas and	During the construction phase	ECO	Monthly, and as and when required	Photographic evidence and notes of compliance that no unauthorised access or

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		provide clear signage of restricted status				activities has taken place within the access restricted areas

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;	DPM	Undertake negotiations for access to the servitude and tower positions with landowners affected by the grid connection corridor	Pre-construction Construction Operation	dEO	Ongoing throughout construction and operation	Proof of negotiations with affected landowners and requirements for access to the servitude and tower positions in the form of written and

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
						signed agreements
– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities;	DPM Contractor	Develop access agreements with the affected landowners. Ensure that agreements are approved and signed	Pre-construction	dEO ECO	Once, prior to construction	Availability of approved and signed negotiations
– The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;	Contractor	Develop and install signs to indicate access for the project	Pre-construction	cEO / ECO	Once, prior to construction	Photographic record of signposted access roads and GPS co-ordinates of where these are placed
– 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 gravel roads used for construction as degradation takes place	During the construction phase	cEO / ECO	Weekly	Photographic record of the pre-construction condition and degradation of roads, and records of the implementation and

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
						effectiveness of maintenance activities
– All contractors must be made aware of all the access routes.	dEO / cEO	Develop a map illustrating all access routes associated with the project and present and provide the map to all contractors	Pre-construction Construction	ECO	Once, prior to construction	Access routes map readily available
– 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 and re-habilitated to the pre-disturbance state	Construction and Rehabilitation	ECO	Bi-weekly (every two weeks)	Photographic record of the closure of access roads and re-vegetation
– Maximum use of both existing servitudes and existing roads must be made to minimise further disturbance through the development of new roads;	Contractor (and Eskom maintenance staff where	Existing access routes to be used must be specified and	Construction and operation	cEO Operation and maintenance team	Weekly	Implementation of the approved layout

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
	relevant to operation)	the development of new roads must be avoided as far as possible				
– In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor;	dEO / cEO	Record the conditions of private roads to be used (prior to use) as per the requirements of section 4.9 and agree on the required condition of the roads with the landowner, DPM and contractor	During the construction phase	ECO	Prior to the use of private roads	Photographic record and proof of the road conditions agreed upon with the relevant parties
– 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 during the design and once prior to construction	Implementation of the approved layout
– Access roads must only be developed on pre-planned and approved roads.	Contractor	Construction of access roads only on pre-planned and	During the construction phase	ECO dEO	Once during the design and weekly during	Implementation of the approved layout

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		approved access roads			the construction of access roads	

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.	dEO	Existing and new gates will be recorded and documented as per the	During the construction phase	ECO	Once, when the construction of all new gates has been completed	Photographic record of the existing and new gates as per the

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		requirements of section 4.9				requirements of section 4.9
– 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 and Operation	ECO Operation and maintenance team	Bi-weekly (every second week)	All gates are locked and no complaints from landowners are received in this regard
– At points where the line crosses an existing 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 the approval of the affected landowner	During the construction phase	ECO	Once, prior to construction and during the construction phase, as and when required	New gates are installed where the power line crosses fences
– Care must be taken that the gates must be so erected that there is a gap of no more than 100mm 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	During the construction phase	cEO	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	During the construction phase	cEO	Once, during the erection of the gates during the	New gates installed as per the requirement

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		installed for jackal proofing			construction phase	
– Original tension must be maintained in the fence wires.	Contractor	Maintain original tension of fences through required activities	During the construction phase	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	During the construction phase	ECO	Once, during the erection of the gates during the construction phase	Gates installed in electrified fencing is electrified
– All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities.	Contractor	Undertake maintenance activities on fences and barriers	During the construction phase	ECO	Monthly	Photographic record of maintained fences and barriers
– 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	During the construction phase	ECO	Once during the erection of fencing	Photographic record of fences erected

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Any temporary fencing to restrict the movement of livestock 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	During the construction phase	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 materials approved by SABS	During the construction phase	cEO	To be monitored as fencing is erected during the construction phase	Use of high-quality materials for fencing approved by SABS
– The use of razor wire as fencing must be avoided as far as possible.	Contractor	Razor wire must not be sourced or used for the erection of fencing	During the construction phase	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 formalised process.	During the construction phase	cEO	Weekly and as and when required	Fences are locked and no complaints from landowners are received. A security

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		Appoint a security company				company is appointed
– 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 the 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 fence uprights associated with the project is present following the completion of the construction phase

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.	DPM / Contractor / dEO / cEO in consultation with the ECO	The onsite borehole must be registered with the DWS prior to commencement of activities	Prior to commencement, during construction and operational phase	ECO / dEO	Registration of borehole once off prior commencement of construction and monitoring of abstraction volumes on a daily basis during construction and during operation.	Proof of registration of borehole from DWS and proof of daily records of abstraction volumes to be attached to monthly audit reports.
– 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 riverbed or banks and that the abstraction of water does not entail stream diversion activities; and	Not applicable - During the construction phase, water will be sourced from the local municipality or existing boreholes (if groundwater is available and if suitable). The exact details of water requirements will be confirmed during the detailed engineering phase. At this stage, no water is planned to be abstracted from or discharged to any surface water systems. During the operational phase of the proposed distribution line, water requirements are not applicable.					

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.						
– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	Contractor / dEO / cEO in consultation with the ECO	Implement the required water conservation measures throughout on-site construction processes	During the construction phase	ECO	Monthly, and as and when required	Successful implementation of water conservation

5.7 Storm and wastewater management

Impact management outcome: Impacts to the environment caused by stormwater 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	Implement measures for the control and management of runoff	During the construction phase	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 approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility.	Contractor and cEO	Obtain approved absorbent material and make use of licensed waste disposal facilities for disposal of oil	During the Construction Phase	ECO	Monthly	Availability of approved absorbent material at the construction site and proof of disposal of oil at licensed disposal facilities
– Natural stormwater 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 between the DPM and the ECO to determine if water can be	During the construction phase	ECO	As and when the need arises to discharge natural stormwater	Proof of consultation between the DPM and ECO and the outcomes thereof to be provided.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		discharged directly into water bodies (where present). The necessary water quality testing must be undertaken prior to discharge			runoff and clean water	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 to discharge	During the construction phase	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.

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	Develop and implement a waste management plan	During the construction phase	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 placed throughout the site	During the construction phase	ECO	Weekly	Appropriate waste collection bins are available throughout the site
– 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 through signage and temporary fencing	Design and Construction Phase	ECO	Once, 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	During the Construction Phase	ECO	Weekly	The waste collection site is maintained and clean

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		the area must be undertaken as per the waste requirements for the project during construction				
– 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 phase	During the Construction Phase	cEO	Weekly	Separate waste bins are available on site and waste generated is separated into the relevant bins
– Staff must be trained in waste segregation.	cEO / dEO	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 requirements checklist
– Bins must be emptied regularly.	Contractor cEO	Bins must be emptied before reaching total capacity and on a regular basis as required for the project	During the construction phase	ECO	Monthly	No mismanagement of bins.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company.	Contractor cEO	Disposal of general waste at licensed waste disposal facilities must be undertaken as per the waste management plan	During the construction phase	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 cEO	Disposal of hazardous waste at licensed waste disposal facilities must be undertaken as per the waste management plan	During the construction phase	ECO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	Contractor cEO	Obtain certificates for safe disposal of waste	During the construction phase	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 and cEO	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	During the construction phase	ECO	Weekly	No incidents reported of spillage of pollutants into watercourses
– In the event of a spill, prompt action must be taken to clear the polluted or affected areas.	Contractor and cEO	Develop a management plan or process for implementation should a spill take place	During the construction phase	ECO	Weekly	Feedback must be provided by the 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 and cEO	Contractor to ensure that movement of equipment is undertaken outside the	During the construction phase	ECO	Weekly	No incidents of the movement of equipment within the wetlands or their riparian habitat.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		footprint and riparian habitat of the wetlands identified within the area.				
– No return flow into the estuaries must be allowed and no disturbance of the Estuarine Functional Zone should occur.	Not applicable – no estuaries were identified within the grid connection corridor.					
– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available.	Contractor and cEO	Ensure that only existing roads or tracks are used to access construction areas within the vicinity of watercourses (including wetlands). No new access roads/tracks should be constructed to provide access to construction areas within the vicinity of watercourses and wetlands within the grid connection	During the construction phase	ECO	Weekly	Ensure that permanent crossings are developed if there is no alternative.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		corridor/servitude.				
– There must not be any impact on the long-term morphological dynamics of watercourses or estuaries.	DPM Contractor cEO	Develop a management plan or process for implementation should morphological changes be visible within the watercourses and the wetlands within the grid connection corridor	During the construction and operation phase	ECO dEO	For all phases of the project life cycle (i.e. construction, operation, decommissioning)	No incidents reported of spillage of pollutants into watercourses
– Existing crossing points must be favoured over the creation of new crossings (including temporary access).	DPM Contractor cEO	Develop a management plan or process for implementation should a spill take place within a watercourse and ensure	During the pre-construction and construction phase	ECO dEO	During the construction phase of the project.	Existing crossing points utilised as opposed to new ones created and no incidents reported of spillage of pollutants into watercourses

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		continuous monitoring Existing crossing points to be used must be identified and personnel within the construction must be aware of these crossings for their use.				
– When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must 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	Contractor cEO	Activities undertaken near watercourses must be in-line with and consider the specified environmental controls	During the construction phase	ECO	Monthly, and as and when required	No degradation of the watercourses and no incidents of destruction reported

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						

5.10 Vegetation clearing

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

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
General:						
– Indigenous vegetation which does not interfere with the development must be left undisturbed.	cEO and Contractor	Demarcate areas of indigenous vegetation to be avoided before clearance is undertaken	Construction and operation (i.e. for maintenance purposes)	ECO Operation and maintenance team	Weekly, and as and when required	No unnecessary clearance of indigenous vegetation is undertaken
– Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species.	Contractor cEO	Demarcate areas containing protected or endangered species to be	During the Construction Phase	ECO	Weekly, and as and when required	No clearance of protected or endangered species other than those

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		avoided by construction activities				permitted to be removed
– 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.	Relevant specialist in consultation with the Contractor	Develop and implement a Plant Search and Rescue Plan	Pre-construction & Construction	ECO	Weekly, and as and when required	Implementation of the Plant Search and Rescue Plan and photographic evidence and notes of the implementation of the plan
– Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries (DAFF) and the Northern Cape Department of Environment and Nature Conservation (DENC) prior to the cutting or clearing of the affected species, and they must be filed.	DPM dEO	Undertake the permitting process in order to obtain the relevant permits for the removal of protected species. Permits must be kept on file	Pre-construction	ECO	Once, prior to the commencement of the construction phase and removal of the protected species	DAFF and DENC permits on file
– 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	Ensure that the audit report indicates all species rescued and replanted and provides feedback in terms of	During the Construction Phase and following the completion of the Construction Phase	ECO	Once off or as and when required	ECO confirmed rescued and replanted programme implemented correctly.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		compliance with the conditions of permits for replanting				
– Trees felled due to construction must be documented and form part of the Environmental Audit Report.	ECO	Ensure that the audit report documents the details of trees felled	During the Construction Phase and following the completion of the Construction Phase	CA permits on file		
– Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris.	Contractor cEO	Felled trees, vegetation cuttings and debris must be disposed of at a licensed waste disposal facility	During the Construction Phase	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 that is appropriately trained.	DPM dEO Contractor cEO and Eskom maintenance staff where	A suitably qualified pest control operator must be appointed	Construction and Operation	ECO	As and when the use of herbicides is required	Only registered pest control operators must be appointed and proof of their registration

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
	relevant to operation)					must be provided
– A daily register must be kept of all relevant details of herbicide usage.	Contractor cEO	Develop a daily register for the documentation of the details of herbicide usage	During the construction phase	ECO	Monthly	Daily register provided by the pest control operator
– No herbicides must be used in estuaries.	Not applicable -no estuaries were identified within the grid connection corridor.					
– 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 in consultation with the dEO	Spatially demarcate protected species and sensitive vegetation and implement appropriate fencing where required as per section 5.3	During the construction phase	ECO	Once, during the undertaking of the demarcation of the areas and the erection of the fencing	Demarcation and fencing is undertaken in-line with the requirements of 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, cEO in consultation with the DPM and Eskom maintenance staff where relevant to operation)	Identify areas of vegetation not to be trimmed.	Construction and Operation	ECO Operation and maintenance team	Monthly	An indication of the areas where vegetation has not been trimmed or where vegetation has been removed from access

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
						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 landowner and the EA holder.	Contractor cEO and Eskom maintenance staff where relevant to operation)	Clearing for access must be undertaken as per the requirements provided by the landowner and the EA holder	During the construction phase	ECO	Monthly, and as and when required	Proof must be provided that only agreed upon areas have been cleared
– 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 cEO	Undertake removal of alien invasive vegetation in accordance with the relevant guideline relevant to the project area and ensure the vegetation is disposed of at a licensed waste disposal facility	Construction and Operation	ECO Operation and maintenance team	Monthly, and as and when required	Proof must be provided that alien invasive vegetation has been cleared in accordance to the relevant guideline and that the vegetation was disposed of at a licensed waste disposal facility
– Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280.	Contractor cEO and Eskom maintenance staff where relevant to operation)	Develop a procedure for the trimming of vegetation in terms of the	Construction and operation	ECO Operation and maintenance team	Monthly, and as and when required	Proof must be provided that vegetation is trimmed in accordance

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		listed requirements				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 cEO and Eskom maintenance staff where relevant to operation)	Dispose of the debris in accordance with the waste management plan	Construction and operation	ECO Operation and maintenance team	Monthly, and as and when required	Proof must be provided that the debris has been disposed of at a licensed waste disposal facility or retained by the landowners.
– 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 that limit impact to the environment must always be considered.	Contractor cEO and Eskom maintenance staff where relevant to operation)	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 the cutting of vegetation for stringing purposes

5.11 Protection of fauna

Impact management outcome: Minimise disturbance to fauna and avifauna.

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 and during the construction phase	ECO	Once, prior to the commencement of construction and as and when required during the construction phase	Written consent provided by the landowner and proof of representation of the landowner during interference
– The breeding sites of raptors and other wild bird 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 raptors and wild bird species	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and as and when required	The planning and development programme includes the consideration of 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 and Eskom maintenance staff where	Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledglings	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Weekly, and as an when required during the construction. Monthly, and as and when	Photographic record of intact breeding sites

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
	relevant to operation)				required during operation	
– Nesting sites on existing parallel lines must documented.	dEO / cEO and Eskom maintenance staff where relevant to operation)	Walk-downs of the existing lines located parallel to the project must be undertaken and nests and the details thereof documented	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Quarterly, and as and when required	Details of walk-downs undertaken must be noted and kept on file and photographic records of 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 and Eskom maintenance staff where relevant to operation)	All mitigation measures recommended by the avifauna specialist must be implemented	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Weekly during construction and monthly during operation	Photographic record of compliance and successful implementation of the recommended 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 and Eskom maintenance staff where relevant to operation)	Recommendations made by the specialist for the installation of bird guards and diverters must be adhered to and implemented as appropriate. Bird guards and	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Monthly, and as and when required	Photographic record of implementation and maintenance of bird guards and diverters

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		diverters must be maintained				
– 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	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO	Monthly, and as and when required	No instances of poaching are reported
– No deliberate or intentional killing of fauna is allowed.	dEO / cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must	During the Construction Phase	ECO	Monthly, and as and when required	No instances of deliberate or intentional killing is reported

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		be demarcated as Access Restricted Areas				
– In areas where snakes are abundant, snake deterrents are 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 and Eskom maintenance staff where relevant to operation)	Implement and maintain snake deterrents on pylons in areas where snakes are abundant	During the Construction Phase Operation Phase	ECO Operation and 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.	DPM in consultation with the dEO	Undertake a permitting process to obtain the required permits	Pre-construction	ECO	Once, prior to the commencement of construction and as and when required	Permits for removal and/relocation must be kept on file and be readily available

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 Walk-through Survey Spatially identify and demarcate areas of heritage significance as per 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 dEO / cEO	Appoint a suitably qualified specialist to carry out the monitoring of excavations for fossils, artefacts and important heritage material	During the Construction Phase	ECO	During the undertaking of excavations of fossils, artefacts and heritage material	Proof of appointment of a suitably qualified specialist and photographic record of required monitoring by the specialist

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– 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	During the Construction Phase	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 the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO in consultation with the Contractor	Develop an Emergency Preparedness, Response and Fire Management	Pre-construction Construction	ECO	Once, prior to the commencement of construction and weekly during the	Compliance with the Emergency Preparedness, Response and Fire

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		Plan specific to the project			construction phase	Management 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	During the Construction Phase	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 managed by the Contractor	During the construction phase	ECO	Monthly, and as and when required	No incidents of unauthorised climbing is reported
– Ensure structures vulnerable to high winds are secured; and	Contractor	Ensure that sufficient stabilisation	During the construction phase	ECO	Weekly, and as and when required	No incidents of unstable structures due to

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		measures are implemented to secure structures vulnerable to high winds				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	During the construction phase	ECO	Monthly, and as and when required	The incidents and complaints register is complete and provides all the required details

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	Mobile chemical toilets must be placed	During the Construction Phase	ECO	Weekly	Mobile toilets are installed and avoid

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		appropriately and in areas that avoid environmental sensitivities				environmental sensitivities
– 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 in consultation with the cEO	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement.	Pe-construction & Construction	ECO	Monthly, and as and when required	No evidence of non-compliance identified
– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100m 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;	Contractor in consultation with the cEO	The installation of the toilets by the Contractor must be as per the listed requirements	During the Construction Phase	ECO	Weekly	No evidence of non-compliance identified

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; and 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 the licensed waste disposal facility with the emptying of the toilets must be kept on file	During the Construction Phase	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	During the Construction Phase	ECO	As and when pest control is required for the project	Contractor to provide proof of pest control used being environmentally-friendly
– Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/ AIDS;	cEO / Contractor	The effects of sexually transmitted diseases and HIV/ AIDS must be covered in the Environmental Awareness Training	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and monthly during construction	Environmental awareness training material requirements checklist
– The Contractor must ensure that information posters on HIV/ AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/ AIDS	During the Construction Phase	ECO	Weekly	Photographic evidence of poster placement

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;	cEO / Contractor	Information and education of sexually transmitted diseases must be covered in the Environmental Awareness Training.	Pre-construction & Construction	ECO	Monthly	Environmental awareness training material requirements checklist
– Free condoms must be made available to all staff on site at central points;	Contractor	Placement of free condoms in mobile toilets and at the construction camps	During the Construction Phase	ECO	Monthly	Proof of placement of free condoms by the contractor to be provided
– Medical support must be made available; and	dEO / cEO in consultation with the Contractor	Ensure that designated personnel with first aid training are available on site and that first aid kits to provide medical support is readily available	Construction and Operations	ECO	Monthly	Check the availability of first aid trained 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	During the Construction Phase	ECO	Quarterly, and as and when required	Voluntary testing schedules and proof of counselling

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		services where required				(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 Fire Management Plan specific to the project	Pre-construction	ECO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan 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	Pre-construction	ECO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire Management Plan includes required specifications

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		which covers accidents, potential spillages and fires				
– All staff must be made aware of emergency procedures as part of environmental awareness training;	cEO / dEO	Develop environmental awareness training material which covers the relevant emergency procedures	Pre-construction	ECO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– The relevant local authority must be made aware of a fire as soon as it starts; and	Contractor	Develop and include a procedure in the Emergency Preparedness, Response and Fire Management Plan for the event of a fire and the procedure to be followed for informing the local authority	Construction	ECO	As and when a fire occurs	The local authority was informed as per the relevant procedure set out in the Emergency Preparedness, Response and Fire Management Plan

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– In the event of emergency, necessary mitigation measures to contain the spill or leak must be implemented (see **Hazardous Substances section 5.17**).	Contractor and Eskom maintenance staff where relevant to operation)	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction and Operations	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 in consultation with the 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	Develop a 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 waste is stored these must be clearly marked	During the Construction Phase	ECO	Monthly	Photographic proof that containers are marked as per the requirements

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		indicating the required details of the contents				
– 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	During the Construction Phase	ECO	Monthly during the Construction Phase	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity to 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	During the Construction Phase	ECO	Once, during the Construction Phase	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;	cEO / Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS) control sheet specific to the project	During the Construction Phase	ECO	Monthly, and as and when required	Complete and up to date control sheet provided by the Contractor

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	cEO / Contractor	Keep a record of all hazardous chemicals and the respective MSDS	During the Construction Phase	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;	cEO / 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;	cEO / 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	Pre-construction & 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 requirements checklist and all relevant personnel have undergone appropriate training and have access to personal protective equipment

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		substances and materials				
– The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	Contractor	Appropriate storage facilities must be constructed or obtained for the storing of diesel, other liquid fuel, oil and hydraulic fluid	During the Construction Phase	ECO	Monthly, and as and when required	Storage tanks for 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	During the Construction Phase	ECO	Monthly, and as and when required	Storage areas for the tanks/ bowsers for the project are appropriate and no incidents are reported in this regard
– 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	During the Construction Phase	ECO	Once, during construction	Bunded storage areas are constructed according to the requirements
– Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a	Contractor	Appropriately constructed refuelling facility must be	During the Construction Phase	ECO cEO	Monthly Weekly	Soils at the refuelling facility are protected as required and

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
drip tray must be used to ensure small spills are contained;		developed as per the requirements. Drip trays must be provided for use				drip trays are provided and used
– All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that empty dirty drums are stored appropriately as per the requirements	During the Construction Phase	ECO cEO	Monthly 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	During the Construction Phase	ECO	Monthly	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	Inform all employees of the requirement and develop and place relevant signage in the relevant areas	During the Construction Phase	ECO cEO	Monthly Weekly	Photographic record of the signage placed must be provided

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting equipment	During the Construction Phase	ECO	Monthly	Adequate fire-fighting equipment is available and has been serviced
– Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used;	Contractor	Provide a mobile refuelling unit as well as suitable ground protection, where required	During the Construction Phase	ECO	Monthly, and as and when required	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	During the Construction Phase	ECO	Monthly, and as and when required	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;	cEO and Contractor	Provide training on the use of spill kits to the relevant employees	Pre-construction	ECO	Once, prior to the commencement of 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; and	cEO and Contractor	Provide an appropriate number of spill kits in relevant areas	During the Construction Phase	ECO	Monthly	Proof of appropriate number of spill kits in appropriate areas to be

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
						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 according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and wastewater management and 5.8 for solid and hazardous waste management.	cEO and Contractor	Storage and disposal of contaminated soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and 5.8 of this EMPr	During the Construction Phase	ECO	Monthly, and as and when required	Proof of storage and disposal in terms of the National Environmental Management: Waste Act must 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	Demarcate specific areas for the maintenance of vehicles and equipment	During the Construction Phase	ECO	Monthly	A dedicated area for the maintenance of vehicles and machinery is used.
– During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil.	Contractor	Ensure that a drip tray is available for any emergency repairs required	During the Construction Phase	ECO	Monthly	Contractor to provide evidence of drip tray use for emergency repairs
– Leaking equipment must be repaired immediately or be removed from site to facilitate repair;	Contractor	Ensure that where leaking equipment is identified it is repaired immediately or removed from site for repairs	During the Construction Phase	ECO	Monthly	Contractor to provide details of equipment repaired or removed from site
– Workshop areas must be monitored for oil and fuel spills;	cEO	Undertake regular inspections of the workshop	During the Construction Phase	ECO	Monthly	Updated register of inspection

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		areas for oil and fuel spills and keep an updated register of inspection on site				
– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available;	Contractor	Provide an appropriate spill kit for the project	During the Construction Phase	ECO	Monthly, and as and when 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 required specification	During the Construction Phase	ECO	Once, during the Construction Phase and as and when required	Workshop area is bunded in accordance with the required specification
– Water drainage from the workshop must be contained and managed in accordance with 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	During the Construction Phase	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	Provide impermeable surface for the mixing of concrete	During the Construction Phase	ECO	Weekly	No concrete mixing is undertaken on open ground
– Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	Contractor	Ensure batching plant used on site contains a containment facility for the collection of cement laden water.	During the Construction Phase	ECO	Weekly	No run-off cement laden water is released into the surrounding area from the batching plant.
– Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	Contractor	Dirty water from the batching plant is safely stored.	During the Construction Phase	ECO	Weekly	No leaks of dirty water from the batching plant into the surrounding area is reported.
– Bagged cement must be stored in an appropriate facility and at least 10m away from any water courses, gullies and drains;	Contractor	Demarcate and provide a storage area for bagged cement in-line with the	During the Construction Phase	ECO	Weekly	Photographic proof of bagged cement stored within the

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		listed requirements				demarcated area
– A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provide a washout facility for the washing of associated equipment. Enforce limitations on water use for washing of equipment	During the Construction Phase	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 licensed disposal facility;	Contractor cEO	Make use of hardened concrete where possible or dispose of concrete in a suitable manner	During the Construction Phase	ECO	Monthly	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 cEO	Bind empty cement bags and temporarily store it in an appropriate area on site	During the Construction Phase	ECO	Monthly	Proof of binding of empty cement bags and storage in an appropriate area on site to be provided by the Contractor

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– 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	During the Construction Phase	ECO	Monthly	Proof of damping (or alternative dust suppression) of sand and aggregates must be provided by the Contractor
– 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; and	Contractor	Ensure that all excess sand, stone and cement is removed or reused	At the completion of the Construction Phase	ECO	Once, with the completion of 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.	Contractor	Installation of fencing around the batching plant.	Prior to commencement of construction activities	ECO	Weekly	Fencing is installed around the footprint of the batching plant.

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 cEO	Apply appropriate dust suppressant	During the Construction Phase	ECO	Weekly	Contractor to provide proof of use of appropriate dust suppressants
– 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 cEO	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	During the Construction Phase and Rehabilitation	ECO	Weekly	Plan for implementation must be provided by the Contractor
– Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;	Contractor cEO	Ensure that specific limitations are placed on the transport and handling of erodible materials during high wind conditions or when a visible	During the Construction Phase	ECO	Bi-weekly (every second week)	No complaints submitted in this regard

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		dust plume is present				
– During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level;	ECO	ECO to provide adequate recommendations	During the Construction Phase	Not Applicable		
– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor cEO	Place soil stockpiles in areas less affected by wind	During the Construction Phase	ECO	Bi-weekly (every second week)	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 in consultation with the ECO	Contractor to implement erosion control measures as recommended and agreed with the ECO	During the Construction Phase	ECO	Weekly, until erosion is no longer a problem	Recommendations made by the ECO have been implemented by the Contractor
– Vehicle speeds must not exceed 40km/h along dust roads or 20km/h when traversing unconsolidated and non-vegetated areas;	cEO / dEO / contractor and Eskom maintenance staff where relevant to operation)	Inform all drivers of speed limits and place appropriate signage along the relevant roads	During the Construction Phase Operation Phase	ECO Operation and Maintenance team	Monthly	No complaints from community members are submitted

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Straw stabilisation must be applied at a rate of one bale/10m² and harrowed into the top 100mm of top material, for all completed earthworks;	Contractor	Ensure that straw stabilisation is undertaken as per the listed requirements	During the Construction Phase	ECO	Monthly	Photographic record of all straw stabilisation undertaken
– 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	During the Construction Phase	ECO	Weekly	Photographic record of measures being implemented and the results thereof

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	Not Applicable – no blasting will be required for the project.					
– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.						

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	During the Construction Phase	ECO	Monthly, and as and when required	No complaints registered in this regard. No amplification equipment is used.
– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor cEO	Provide and implement silencing technology	During the Construction Phase	ECO	Monthly, and as and when required	No complaints registered in this regard. Silencing technology is utilised.
– 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;	Contractor cEO	Update complaints register. Provide daily transport to and from site for employees	During the Construction Phase	ECO	Monthly, and as and when required	Complaints register provided by the cEO and proof of transportation services provided
– Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental	Contractor cEO	Compile a Code of Conduct for staff.	Pre-construction and Construction	ECO	Once, prior to the	No complaints registered in this regard.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.		Appropriate operating hours must be identified for the project.			commencement of construction	

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 / 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 in consultation with the Contractor	Provide all vehicles with firefighting equipment	Construction	ECO	Monthly	All vehicles are fitted with firefighting equipment and the details thereof are provided by the cEO
– The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO	Undertake formal consultation to inform the local FPA of the associated construction activities	Pre-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;	dEO / cEO / Contractor	Develop environmental awareness	Pre-construction & Construction	ECO	Prior to the commencement of the	Environmental awareness training material

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		training material which covers the contact numbers for the FPA and emergency services. Place the contact numbers for the FPA and emergency services at a visible and central location			environmental awareness training and once during the construction phase	requirements 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	Not Applicable		

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 and water bodies;	Contractor	Identify and demarcate an appropriate location for the storage of excavated materials	Pre-construction & Construction	ECO	Monthly	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	During the Construction Phase	ECO	Bi-weekly (every second week)	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
– Topsoil stockpiles must not exceed 2m in height;	Contractor	Enforce limitations for the height of topsoil stockpiles	During the Construction Phase	ECO	Bi-weekly (every second week)	Topsoil stockpiles do not exceed 2m in height
– During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	Contractor	Appropriate material must be provided in order to cover stockpiles when required	During the Construction Phase	ECO	Monthly	Contractor to provide proof of availability of appropriate material to

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
						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	During the Construction Phase	ECO	Monthly	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	Implement restrictions in terms of vegetation clearing during the survey and pegging operations	Pre-construction	ECO	Weekly	Contractor to provide photographic proof that no vegetation has been cleared
– No new access roads must be developed to facilitate access for survey and pegging purposes;	Contractor	Restrict the development of	Pre-construction	ECO	Weekly	Contractor to provide

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		new access roads for survey and pegging purposes				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	Undertake consultation between the relevant responsible people and finalise the tower positions for the power line	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 a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	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 and Rehabilitation	ECO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor
– 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	During the Construction Phase	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	Undertake the management of hazardous	During the Construction Phase	ECO	Monthly	Management of hazardous substances spills

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		substances spills from equipment as per the requirements of section 5.17				from equipment is undertaken in line with the requirements of section 5.17
– Batching of cement to be undertaken in accordance with Section 5.19: Batching plants;	Contractor	Undertake the batching of cement as per the requirements of section 5.19.	During the Construction Phase	ECO	Monthly	Management of the batching of cement in accordance with the requirements of section 5.19.
– Residual cement must be disposed of in accordance with Section 5.8: Solid and hazardous waste management.	Contractor	Undertake the disposal of residual cement as per the requirements of section 5.8	During the Construction Phase	ECO	Monthly	The disposal of residual cement is undertaken in line with section 5.8.

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 surfaces (suggest wooden blocks) to minimise damage to the underlying vegetation;	Contractor	Provide the necessary materials for the elevated surface, where towers are to be placed on indigenous vegetation	During the Construction Phase	ECO	Weekly	Implementation of elevated surface and photographic record thereof
– In sensitive areas, tower assembly must take place off-site or away from sensitive positions;	Contractor in consultation with the cEO	Identify sensitive areas, including buffers, to be avoided by tower assembly and ensure that the areas are not infringed upon	Pre-construction & Construction	ECO	Weekly	Tower assembly is undertaken outside of sensitive 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	Ensure that no impact to the environment is imposed during the operation of the crane	Pre-construction & Construction	ECO	Weekly	No environmental damages incurred as a result of the crane.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– The number of crane trips to each site must be minimised;	Contractor in consultation with the cEO	Ensure that the utilisation of the crane is maximised when on site.	Pre-construction & Construction	ECO	Weekly	Few crane trips to each site observed.
– Wheeled cranes must be utilised in preference to tracked cranes;	Contractor	Ensure wheeled cranes are utilised.	Pre-construction & Construction	ECO	Weekly	Wheeled cranes observed on site.
– Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact;	Contractor	Contractor to undertaken erecting of towers in an environmentally acceptable manner	During the Construction Phase	ECO	Monthly	No unacceptable environmental impacts occur with the erecting of the towers
– Access to tower positions to be undertaken in accordance with access requirements specified in **Section 5.4: Access Roads**;	Contractor	Undertake access to tower positions as per the requirements of section 5.4	During the Construction Phase	ECO	Monthly	Access to tower positions are undertaken as per the requirements of section 5.4
– Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in **Section 5.10: Vegetation clearing**;	Contractor	Undertake vegetation clearance as per the requirements of section 5.10	During the Construction Phase	ECO	Weekly	Vegetation clearance is undertaken as per the requirements of section 5.10

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– 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	During the Construction Phase	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 during rehabilitation of such tower sites;	Contractor	Implement appropriate measures to ensure that topsoil is removed from subsoil material	Construction and Rehabilitation	ECO	Weekly, and as and when required	Proof of appropriate measures implemented must be provided by the Contractor
– Topsoil must be stored in heaps not higher than 2m to prevent destruction of the seed bank within the topsoil;	Contractor	Implement the listed requirements for the storage of topsoil	During the Construction Phase	ECO	Weekly	Topsoil is stored as per the listed requirements
– 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	During the Construction Phase	ECO	Weekly	Excavation of slopes is undertaken as per the listed requirements

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– 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;	Not Applicable - no blasting activities will be required for the project.					
– Only existing disturbed areas are utilised as spoil areas;	Contractor	Identify, demarcate and use existing disturbed areas for spoil areas	Pre-construction & Construction	ECO	Weekly	Only identified disturbed areas are used as spoil areas
– Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fires is kept to a minimum;	Not Applicable					
– Surface water runoff is appropriately channelled 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	Rehabilitation	ECO	Weekly	Rehabilitation of the surface spoil is undertaken as

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		undertaken in accordance with the requirements of section 5.29				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 complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.	Contractor	Ensure that topsoil is spread evenly and compacted appropriately. This must be undertaken outside of the start of the dry season	Rehabilitation	ECO	Weekly	Proof that topsoil has been spread evenly and compacted 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 areas;	Contractor	Identify and demarcate areas appropriate for the siting of winch and tensioner stations which does not infringe on access restricted areas or environmentally sensitive areas	Pre-construction & Construction	ECO	Weekly	Winch and tensioner stations are located outside of identified sensitive areas
– The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks;	Contractor	Provide sufficient drip trays	During the Construction Phase	ECO	Weekly	Sufficient drip trays are available for the winch and tensioner stations and no spills occur
– Refuelling of the winch and tensioner stations must be undertaken in accordance with **Section 5.17: Hazardous substances;**	Contractor	The refuelling of winch and tensioner	During the Construction Phase	ECO	Monthly	The refuelling of winch and tensioner

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		stations must be undertaken as per the requirements of section 5.17				stations is undertaken 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 handheld 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.	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and weekly during stringing	Implementation of the procedures put in 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 helicopter;	Contractor	Identify and implement the stringing method with the least environmental impact	During the Construction Phase	ECO	Weekly	Implementation of identified method of 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	Pre-construction & Construction	ECO	Monthly, and as and when required	Proof of implementation of protection measures and proof of written notice to affected parties must be

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		timeous written notice must be provided to the affected parties				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 in consultation with the cEO	Avoid the damaging or disturbance of existing services. Where services will be disrupted timeous notice must be provided to the affected parties	During the Construction Phase	ECO	Monthly, and as and when required	No disruption of services occurs. Where disruption occurs proof of written 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 workdays minimum), in writing, must be provided to the landowner;	Not Applicable - no cultivated land is present within the grid connection corridor.					
– Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.	Not Applicable – no high value agricultural areas are present within the grid connection corridor.					

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 and monthly during the construction	Communication is undertaken as per the identified strategies and no complaints are submitted regarding communication
– 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 and monthly during the construction phase	Conflict resolution is undertaken in line with the requirements of the Grievance Mechanism. No complaints on conflict resolution is submitted by the community

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Sustain continuous communication and liaison with neighbouring owners and residents	Contractor	Development and implement a Grievance Mechanism which provides procedures for communication / liaison with neighbouring landowners and residents	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and monthly during the construction phase	Communication / liaison with neighbouring landowners and residents are undertaken in line with the requirements of the Grievance Mechanism. No complaints on communication with neighbouring landowners and residents is submitted
– 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 and monthly during the construction phase	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 would reduce the risk to local farmers.	Not Applicable - no workers, other than security is proposed to stay on-site overnight.					

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	Regular emptying of the bunds must be undertaken. This must be undertaken as per the requirements listed in sections 5.17 and 5.18	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirements listed under sections 5.17 and 5.18
– Hazardous storage areas must be well ventilated;	Contractor	Install appropriate ventilation in all hazardous storage areas	During the construction phase	ECO	Prior to site closure for more than 05 days	Effective ventilation is installed in hazardous storage areas
– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor / cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		service records are kept up to date and filed				
– Emergency and contact details must be displayed;	Contractor / cEO	Place emergency and contact details which are readily available and easily accessible	During the Construction Phase	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	Hold a workshop with all security personnel to provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel	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	Regular checks of night hazards must be undertaken	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Proof of checks of night hazards must be provided by the contractor

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO / Contractor	Identify any potential fire hazards and notify the relevant local authority	During the Construction Phase	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	Ensure structures vulnerable to wind are secure prior to site closure	During the Construction Phase	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	Implement wind and dust mitigation prior to site closure	During the Construction Phase	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	Ensure cement and material stores are secured prior to site closure	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Cement and material stores are secured prior to site closure
– Toilets must have been emptied and secured;	Contractor	Ensure toilets are emptied and secured prior to site closure	During the Construction Phase	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	Ensure refuse bins are emptied and secured	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Refuse bins are emptied and

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		prior to site closure				secured prior to site closure
– Drip trays must have been emptied and secured.	Contractor	Ensure drip trays are emptied and secured prior to site closure	During the Construction Phase	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	Develop and implement a rehabilitation plan for the rehabilitation of all disturbed areas. Dispose of all spoil and waste at a licensed	Pre-construction & Rehabilitation	ECO	Weekly	Rehabilitation of the disturbed areas is undertaken as per the rehabilitation plan. All certificates of waste disposal at licensed facilities are available.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		waste disposal facility				
– 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	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	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 of 1:4 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;	Contractor	The upper 10cm of soil which was stripped and stockpiled from the entire area where levelling has been conducted	Rehabilitation	ECO	Weekly	Topsoil is spread evenly

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
		should be re-spread over the disturbed surface during rehabilitation: If no levelling was done on a particular area, it is not necessary to strip topsoil from that area.				
– Rehabilitation of tower sites and access roads outside of farmland;	Contractor	Ensure stockpiled topsoil is used as per the requirements listed under section 5.24	Rehabilitation	ECO	Weekly	Topsoil is spread evenly
– Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Make use of indigenous species for rehabilitation	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 requirements listed under section 5.24	Rehabilitation	ECO	Weekly	Stockpiled topsoil is used as per the requirements listed under section 5.24

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– 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 placement area or 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	Plan the timeframe for rehabilitation in order to undertake vegetation planting during the optimal time for vegetation establishment	Rehabilitation	ECO	At the start of rehabilitation to confirm correct timeframe	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 disturbed slope areas must be stabilised	Rehabilitation	ECO	Weekly	Disturbed slopes are stabilised sufficiently

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– 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	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO	Weekly	Slopes are stabilised as per the design specifications
– Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150mm of topsoil.	Contractor	Spoil used for landscaping must be applied as per the listed requirements	Rehabilitation	ECO	Weekly	Photographic record of spoil used for landscaping purposes as well as feedback from the 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; e) The final product must not cause an ecological imbalance in the area	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

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 Contact details and description of the project

7.1.1. Details of the Applicant:

Applicant Name	**South Africa Mainstream Renewable Power Developments (Pty) Ltd**
Contact Person	Eugene Marais
Physical Address	4th Floor Mariendahl House, Newlands on Main, Corner Main and Campground Road, Claremont, Cape Town, 7708
Postal Address	PO Box 45063, Claremont, 7735
Telephone	021 657 4045
Fax	N/A
Cell	(073) 871 5781
Email Address	Eugene.Marais@mainstreamrp.com

7.1.2. Details and Expertise of Environmental Assessment Practitioner (EAP)

EAP Name	**Liandra Scott-Shaw - SLR Consulting South Africa (Pty) Ltd**
EAP Qualifications	(Curriculum Vitae included):
Professional Affiliation/Registration	(Curriculum Vitae included):
Telephone	+27 11 467 0945
Fax	n/a
Email Address	lscottshaw@slrconsulting.com

Refer to **Appendix A** of the EMPr for the detailed experience of the EAP and the Project Team.

7.1.3. Project Details

Project Name:

Proposed construction and operation of the 132kV/400kV On-Site Main Transmission Substation (MTS) and associated infrastructure located near Dealesville in the Tokologo Local Municipality, Lejweleputswa District in the Free State Province

7.1.4. Project Description

South Africa Mainstream Renewable Power Developments (Pty) Ltd ('Mainstream') is proposing the development of (1) Main Transmission Substation (MTS) and three (3) powerlines (namely 1 x 132kV powerline and 2 x 400kV powerlines), Li-Ion Battery Energy Storage System, the associated electrical infrastructure, (the 'proposed development') that will connect to the authorised Solar Energy Facilities i.e. Kentani, Klipfontein, Klipfontein 2, Leliehoek, Sonoblomo, Braklaagte, Boschrand 2, Meeding, Irene and Braambosch, collectively known as the Kentani Cluster located near the town of Dealesville, Tokologo Local Municipality (Lejweleputswa District) in the Free State Province. The proposed development will also involve the re-routing of eight (8) 132kV powerlines within the grid connection corridor which has been authorised as part of the Kentani Cluster, making provision for this routing in the new proposed MTS (Figure 1).

It should be noted that on 28 October 2021, the Minister of Mineral Resources and Energy, Gwede Mantashe announced the Preferred Bidders of the Round 5 Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and six (6) of the aforementioned Solar Energy Facilities received Preferred Bidder status i.e.:

- Kentani Solar PV
- Klipfontein Solar PV
- Klipfontein 2 Solar PV
- Leliehoek Solar PV
- Sonoblomo Solar PV
- Braklaagte Solar PV

These Solar Energy Facilities have now become Strategic Infrastructure Projects i.e. SIPs 8 and 10. SIPs 8 and 10 target the development of green energy in support of the South African economy and the provision of electricity transmission and distribution respectively.

- SIP 8 supports sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP2010) and support bio-fuel production facilities.
- SIP 10 Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development. Align the 10-year transmission plan, the services backlog, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity

The Kentani Cluster consists of eleven (11) solar PV projects and associated electrical infrastructure (including a powerline), each of which received their own Environmental Authorisation (EA) in 2016 from the Department of Environmental Affairs (DEA) [now referred to as the Department of Forestry, Fisheries and the Environment (DFFE)]. The proposed MTS and

associated infrastructure [i.e., eleven (11) powerlines] will service eleven (11) of Mainstream's solar PV projects authorised as part of the Kentani Cluster.

It should be noted that the proposed MTS and associated infrastructure will be located within the authorised Klipfontein PV facility (14/12/16/3/3/2/722), which is proposed on the Remaining Extent of the Farm Klipfontein No. 305 (SG Code: F00400000000030500000). Of the eleven (11) powerlines, eight (8) are 132kV powerlines which are located within the authorised corridor, and which have been included as part of the authorised solar PV developments. The remaining powerlines [i.e., two (2) 400kV and one (1) 132kV powerlines] fall outside of the authorised corridor and therefore will be assessed as part of the Basic Assessment (BA) process for the MTS (i.e., this application).

Considering the above, it is important to note that the location of the proposed MTS as well as the corridors being proposed for the powerlines have previously been assessed as part of the development footprint for the Kentani Cluster of solar PV developments, each of which received their own EA in 2016 [1].

Moreover, the proposed MTS and powerlines are located within the Kimberly Renewable Energy Development Zone and Central Strategic Transmission Corridor, as defined and in terms of the procedures laid out in Government Notices No. 113 and No. 145 which were formally gazetted on 16 February 2018 and 26 February 2021 respectively. The proposed MTS will occupy a footprint of approximately 64 hectares (ha) (i.e., 800m x 800m) and the proposed Lithium-Ion Battery Energy Storage System (BESS) with occupy up to 4 ha. The area occupied by the proposed power lines is unknown at this stage. In addition, the proposed MTS will have a capacity of 132/400 kilovolt (kV), while the associated powerlines will have capacities of up to 400kV, 132kV and 33kV respectively. The powerlines and BESS associated with the MTS and which are being proposed as part of this application and BA process are as follows:

1. Two (2) 400kV overhead powerlines (approx. 800m in length) are being proposed and will connect the proposed MTS to the existing Eskom 400kV powerline, located approximately 1km west of the proposed MTS site, via a Loop-In-Loop Out (LILO) connection; and
2. One (1) 132kV powerline (approx. 4km in length) is being proposed and will connect the proposed MTS to the authorised Kentani on-site substation (14/12/16/3/3/2/724), located approx. 4km north-west of the proposed MTS site.
3. Li-Ion Battery Energy Storage System (BESS) up to 4 ha in extent within the assessed site footprint

Additionally, there is one (1) 33kv powerline (approx. 2km in length) being proposed and will connect the authorised 75MW Sonoblomo PV facility (14/12/16/3/3/2/723), which is located approximately 5km north of the proposed MTS site, to the authorised Kentani on-site substation (14/12/16/3/3/2/724) (approx. 4km north-west of proposed MTS site). This powerline is not subject to the Basic Assessment study as it does trigger the need for an Application for

[1] It should be noted that the validity period of the EA issued for the Klipfontein Solar PV Energy Facility in 2016 was extended by the Holder of the EA in April 2021 (14/12/16/3/3/2/722/AM1). The EA issued in 2016 is now valid until 06 June 2026 (i.e., EA lapses on 06 June 2026).

Environmental Authorisation, however, the powerline has been considered by the specialist team.
A road in the servitude under the proposed powerlines as well as an access road (approx. 4-8m wide) to the R64 provincial route will also be required.

As part of the BA process, powerline corridors with widths of 300m (150m on either side of centre line) are being proposed and assessed for the 400kV and 132kV powerlines. This is to allow flexibility when routing the powerlines within the authorised corridor (should the EA be granted). No corridor is however being considered for the proposed 33kV powerline.

This Generic EMPr is applicable to the proposed of the 132kV/400kV On-Site Main Transmission Substation (MTS) and associated infrastructure located near Dealesville in the Tokologo Local Municipality, Lejweleputswa District in the Free State Province

7.1.5. Project Location

Location details of the proposed MTS development:

Province	Free State
District Municipality	Lejweleputswa District Municipality
Local Municipality	Tokologo Local Municipality
Ward number(s)	Ward 1
Nearest town(s)	Dealesville
Affected Properties: Farm name(s), number(s) and portion numbers	» Remaining Extent of the Farm Klipfontein No. 305; » The Farm Leliehoek No. 748; » The Farm Overschot No. 31; » Portion 1 of the Farm Walkerville No. 1031; » Remainder of the Farm Walkerville No. 1031 » Leliehoek 748
SG 21 Digit Code (s)	» Remaining Extent of the Farm Klipfontein No. 305 (F00400000000030500000); » The Farm Leliehoek No. 748 (F00400000000074800000); » Remainder of the Farm Oxford No. 1030 (F00400000000103000000); » The Farm Overschot No. 31 (F00400000000003100000) » Portion 1 of the Farm Walkerville No. 1031 (F00400000000103100001); and » Remainder of the Farm Walkerville No. 1031 (F00400000000103100000).
Current zoning and land use	Agriculture

MTS development

Infrastructure	**Footprint, dimensions and technical details**
Onsite Main Transmission Substation (MTS)	• One (1) new MTS with capacity of 132kV/400kV • Total footprint of up to approx. 36ha (i.e., 600m x 600m) • Will contain transformers for voltage step up from medium voltage (132kV) to high voltage (400kV)

Infrastructure	Footprint, dimensions and technical details
	• Direct Current (DC) power from the authorised Kentani Cluster of solar PV developments (each of which received their own EA in 2016) will be converted into Alternating Current (AC) power in the inverters and the voltage will be stepped up to high voltage in the inverter transformers • Will be located within authorised Klipfontein PV facility (14/12/16/3/3/2/722), which is proposed on Remaining Extent of the Farm Klipfontein No. 305
Grid Connection (Powerlines)	• Two (2) new 400kV overhead powerlines connecting MTS to existing Eskom 400kV powerline (approx. 1km west of MTS site) via LILO connection; • One (1) new 132kV overhead powerline connecting MTS to authorised Kentani on-site substation (14/12/16/3/3/2/724) (approx. 4km north-west of MTS site); • One (1) new 33kV overhead powerline connecting authorised 75MW Sonoblomo PV facility (14/12/16/3/3/2/723) (approx. 5km north of MTS site) to authorised Kentani on-site substation (14/12/16/3/3/2/724) (approx. 4km north-west of MTS site) • Length of 400kV powerlines = approx. 2km • Length of 132kV powerline = approx. 4,5-5km • Length of 33kV powerline = approx. 2km • Area occupied by powerlines unknown at this stage • Powerline corridors with widths of 300m (150m on either side of centre line) being proposed and assessed for 400kV and 132kV powerlines to allow flexibility when routing powerlines within authorised corridor (should EA be granted) • No corridor being considered for 33kV powerline • This will allow for flexibility when routing powerline within the authorised corridor • Eight (8) 132kV powerlines within grid connection corridor authorised as part of Kentani Cluster will also be re-routed and provision will be made for this routing in new proposed MTS
Roads	• One (1) new road in servitude under proposed powerlines • One (1) new access to the R64 provincial route • Widths of up to approx. 4-8m
BESS	• Li-Ion Battery Energy Storage System up to 4 ha in extent within the assessed site foot print

It should be noted that Eskom's requirements for work in or near Eskom servitudes should be adhered to.

7.1 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.

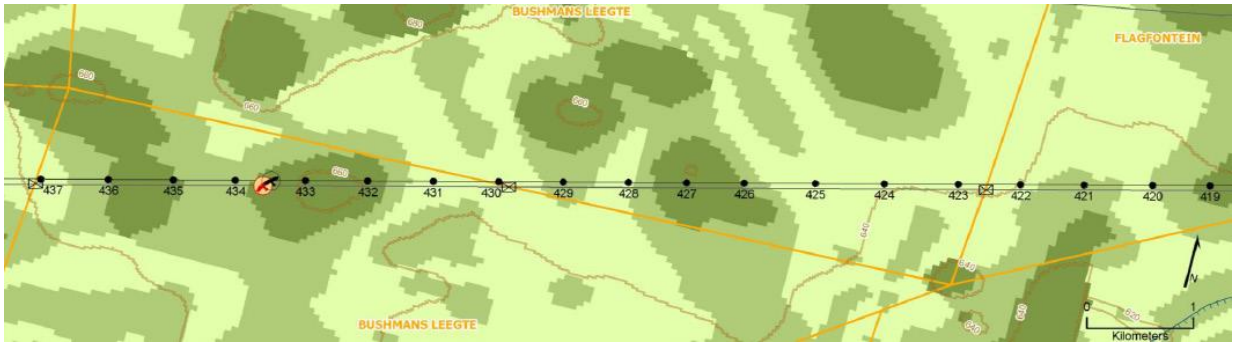


Figure 1: Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile

The national web-based environmental screening tool was utilised for this project and the grid connection corridor sensitivity maps can be seen in Figures 3 to 7. The site-specific environmental sensitivity map included in the BA Report is included as Figure 2.

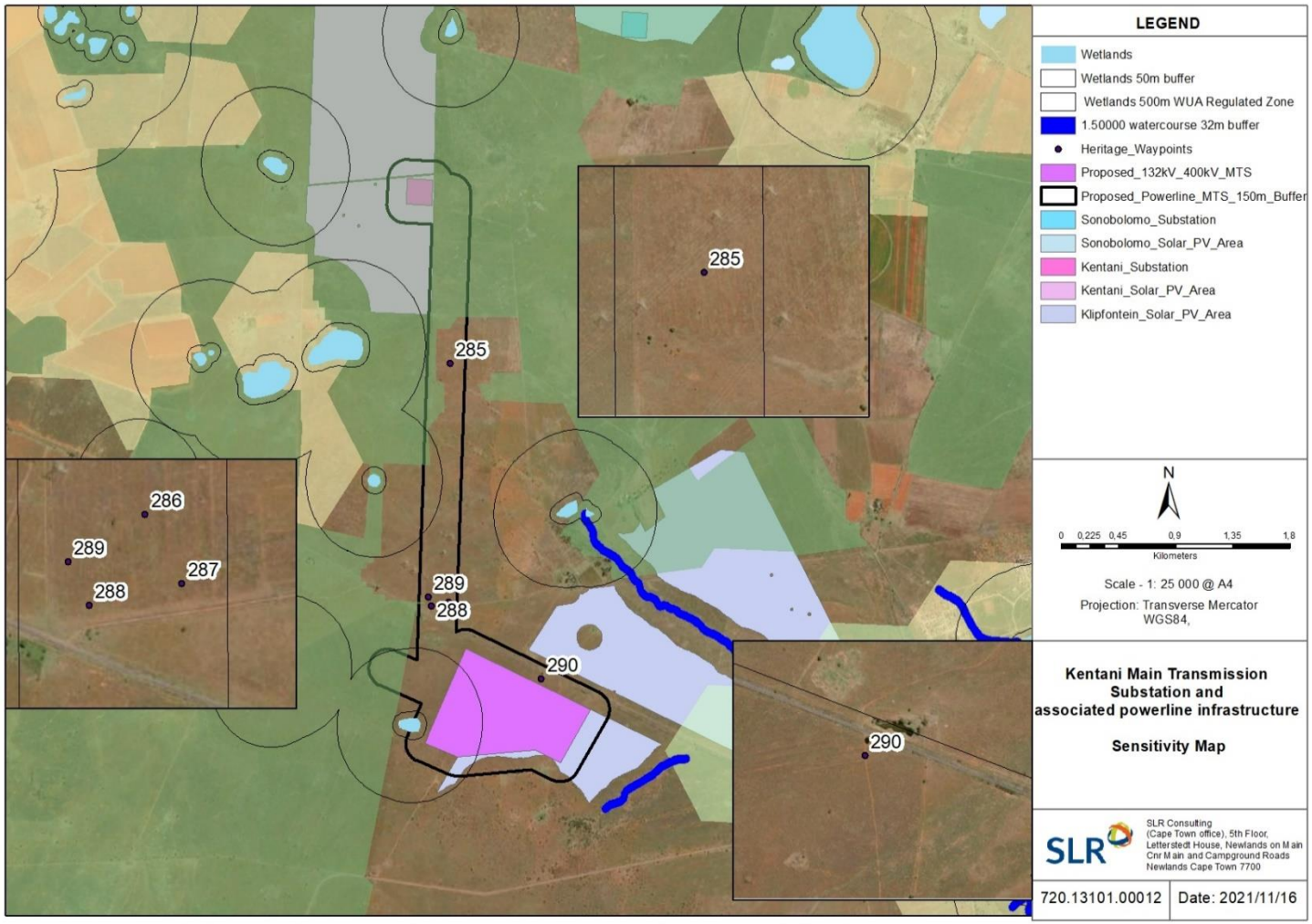


Figure 2: Environmental sensitivity map as per the Basic Assessment process undertaken for the proposed MTS and associated grid infrastructure Facilities

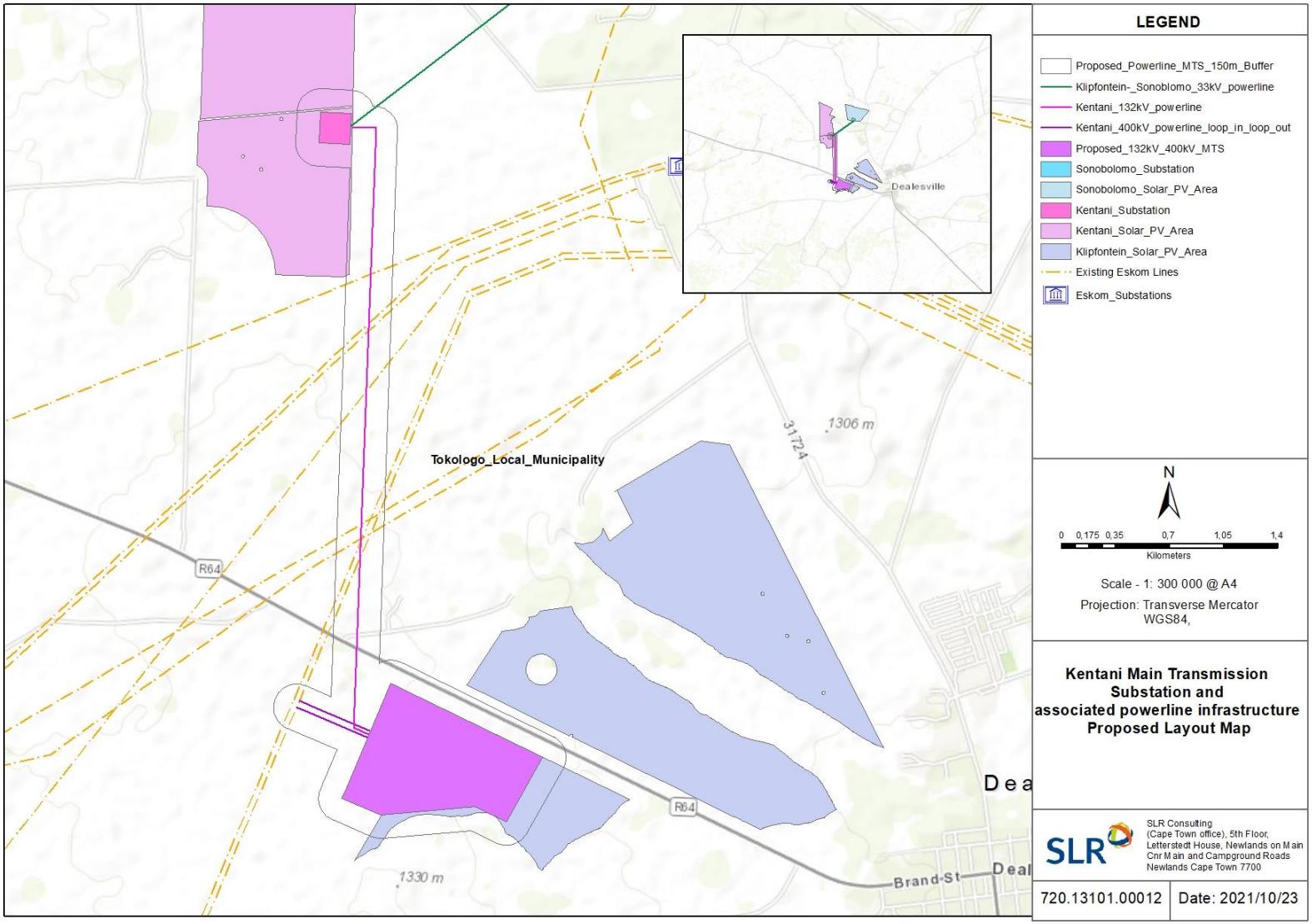


Figure 3: Layout map for the proposed MTS and associated grid infrastructure Facilities

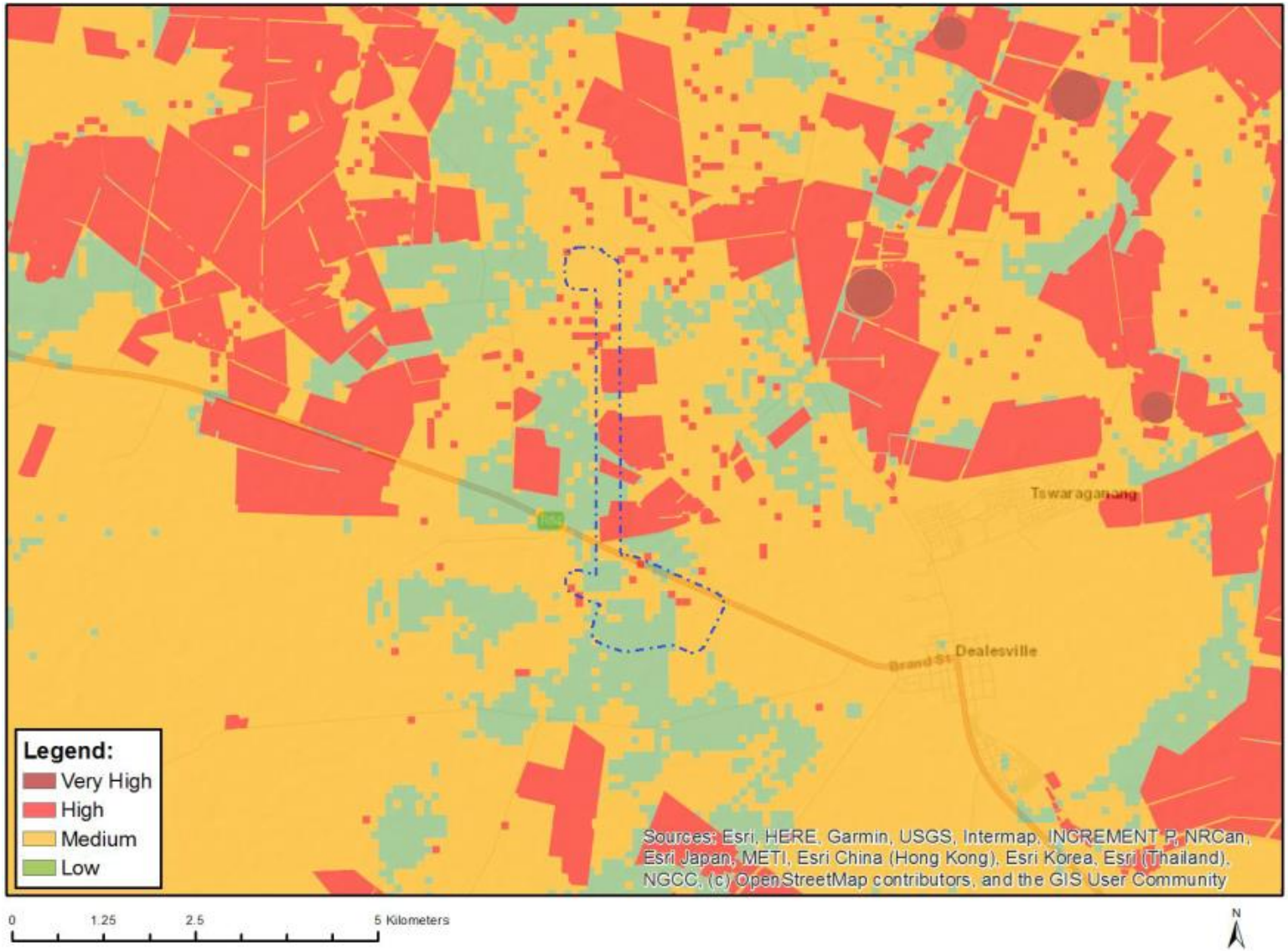


Figure 4: Map of Relative Agriculture Theme Sensitivity

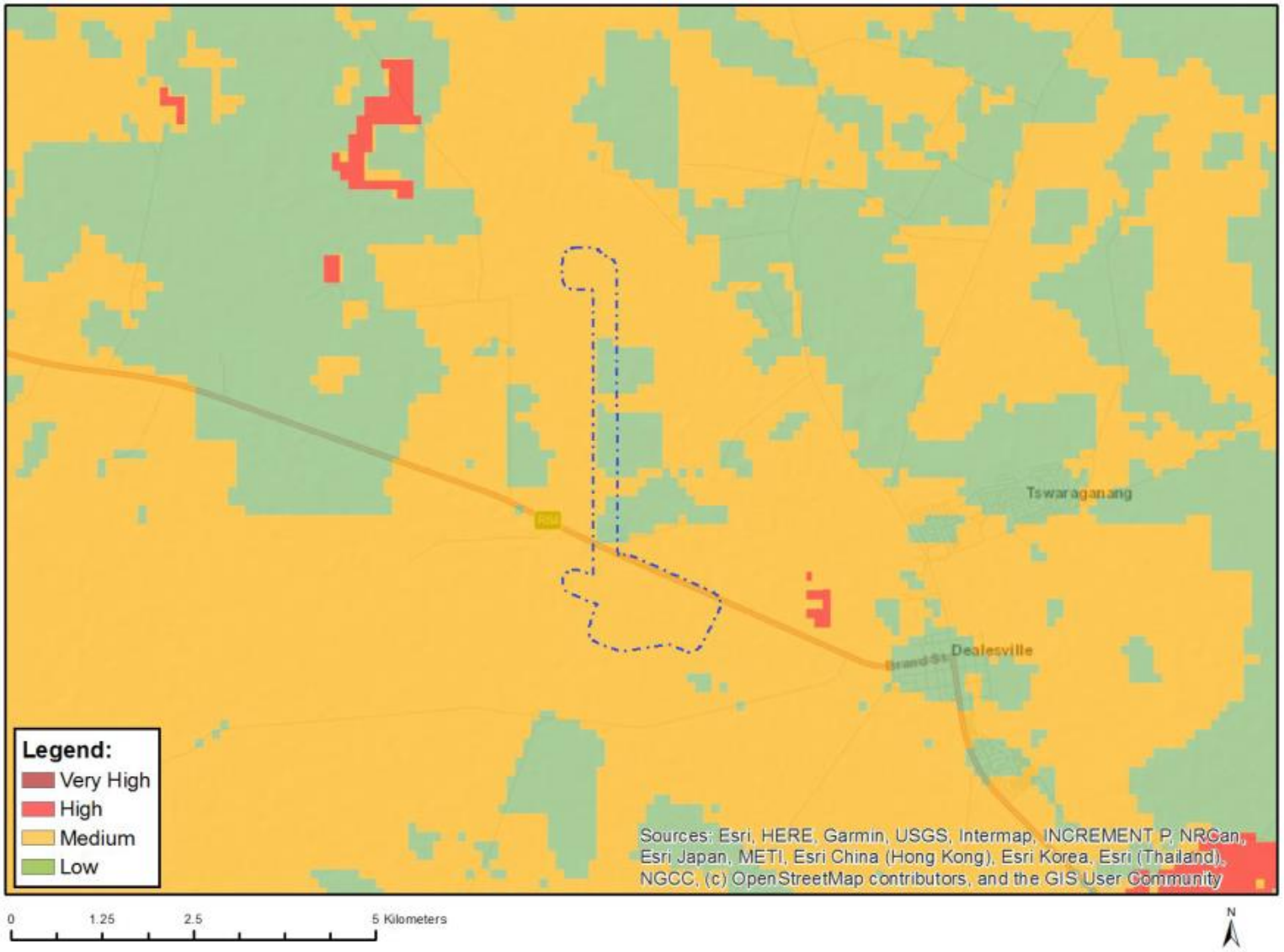


Figure 5: Map of Animal Species Theme Sensitivity

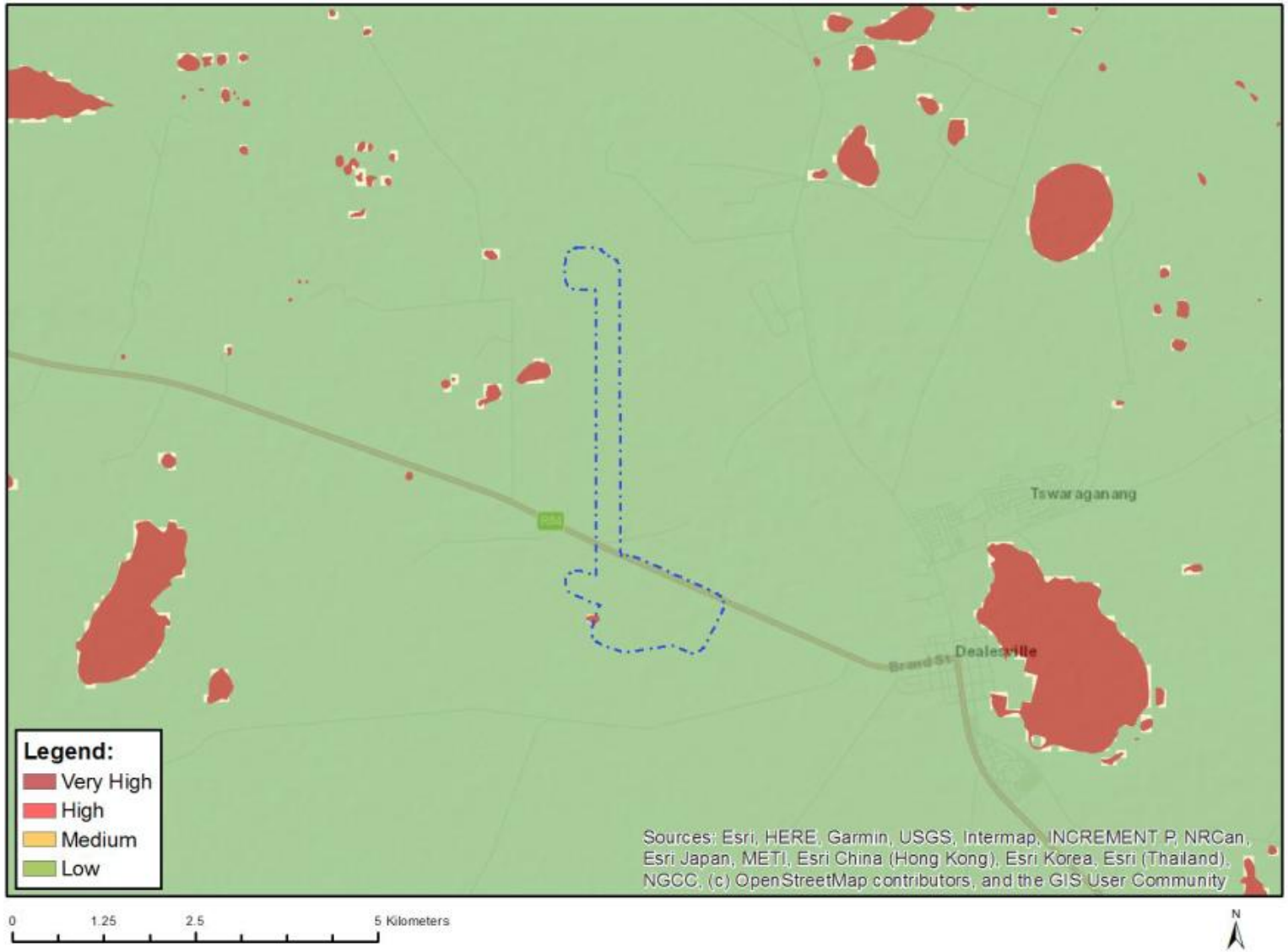


Figure 6: Map of Aquatic Biodiversity Theme Sensitivity

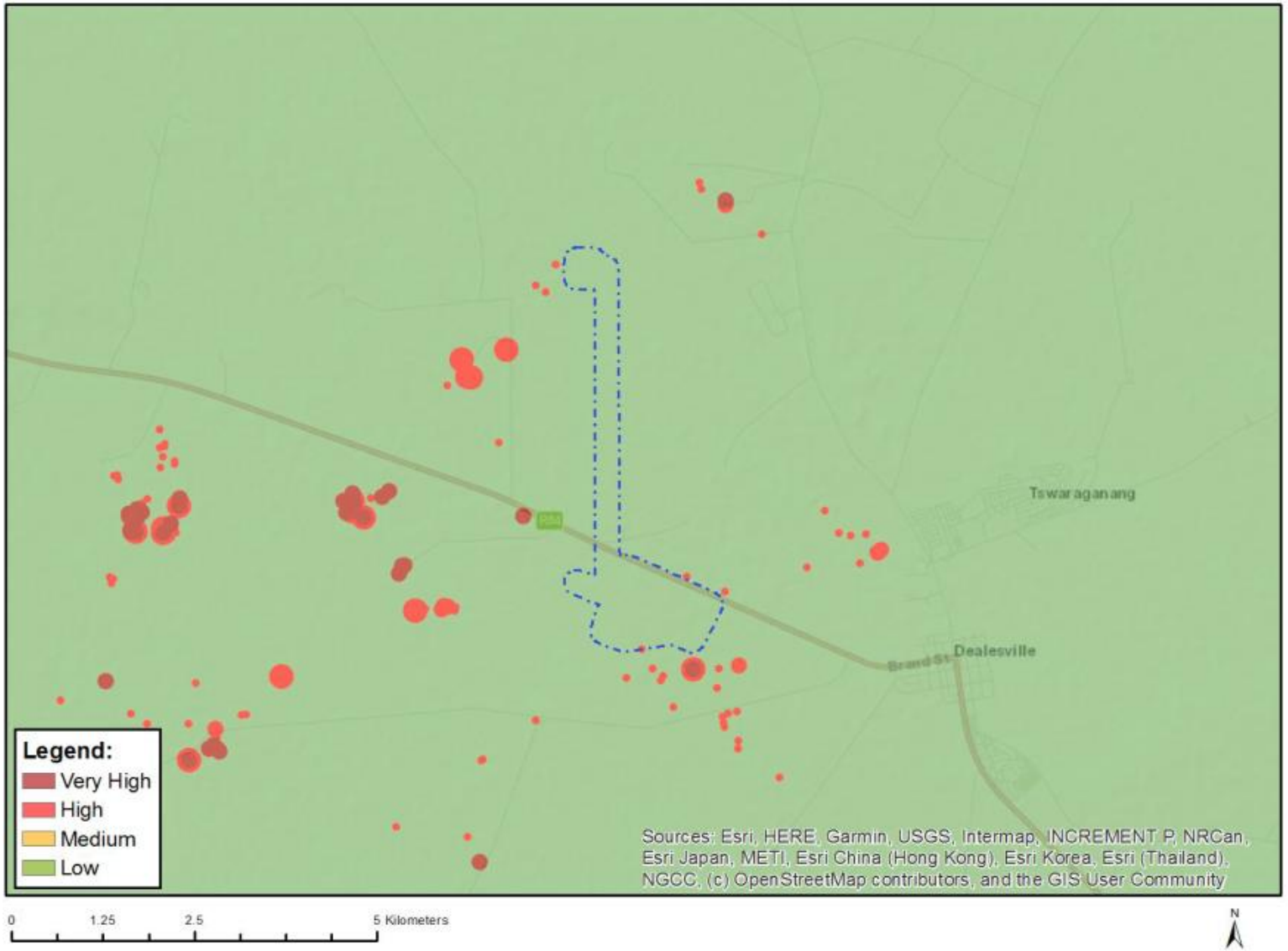


Figure 7: Map of Archaeological and Cultural Heritage Species Theme Sensitivity

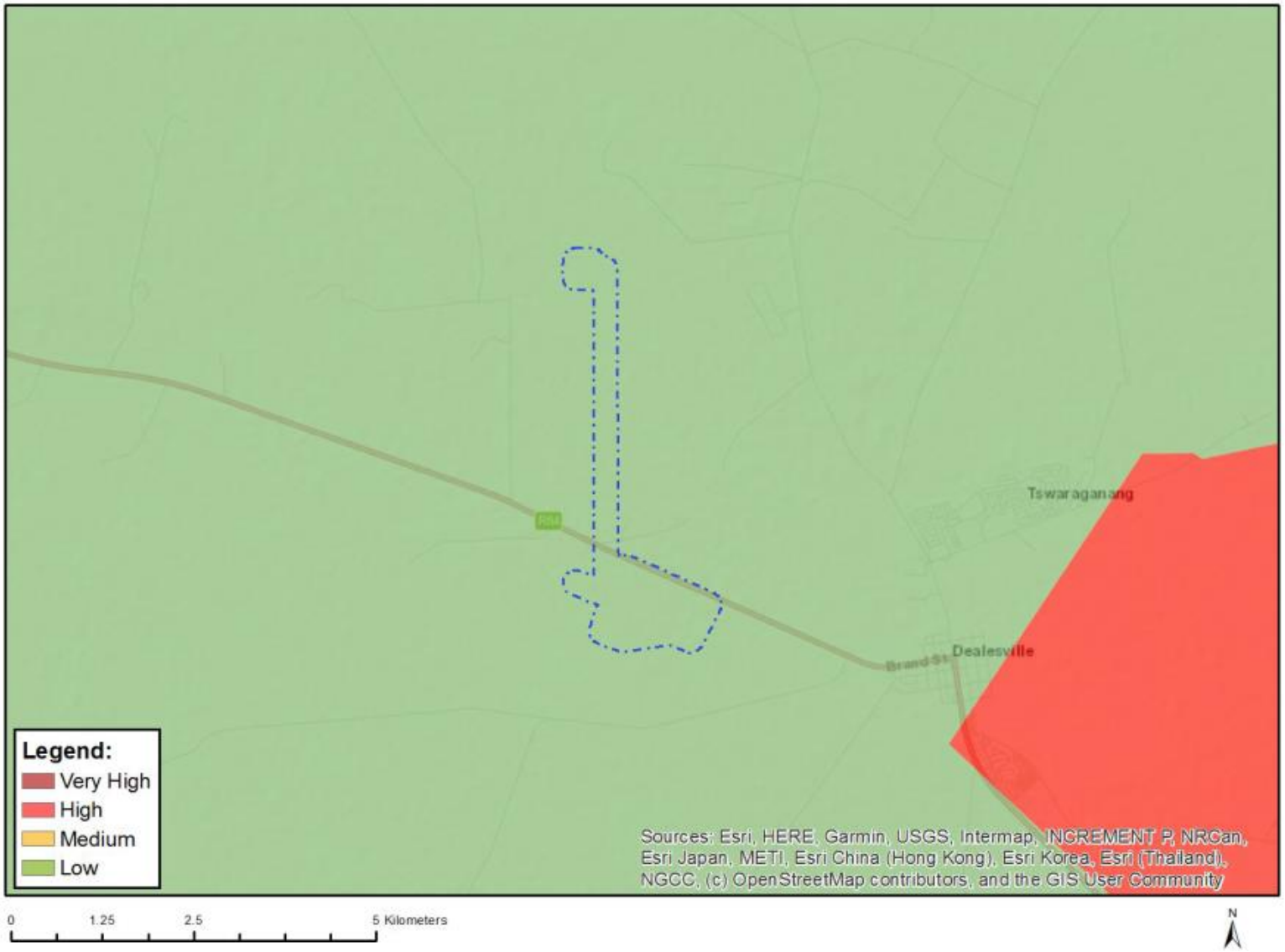


Figure 9: Map of Relative Plant Species Theme Sensitivity

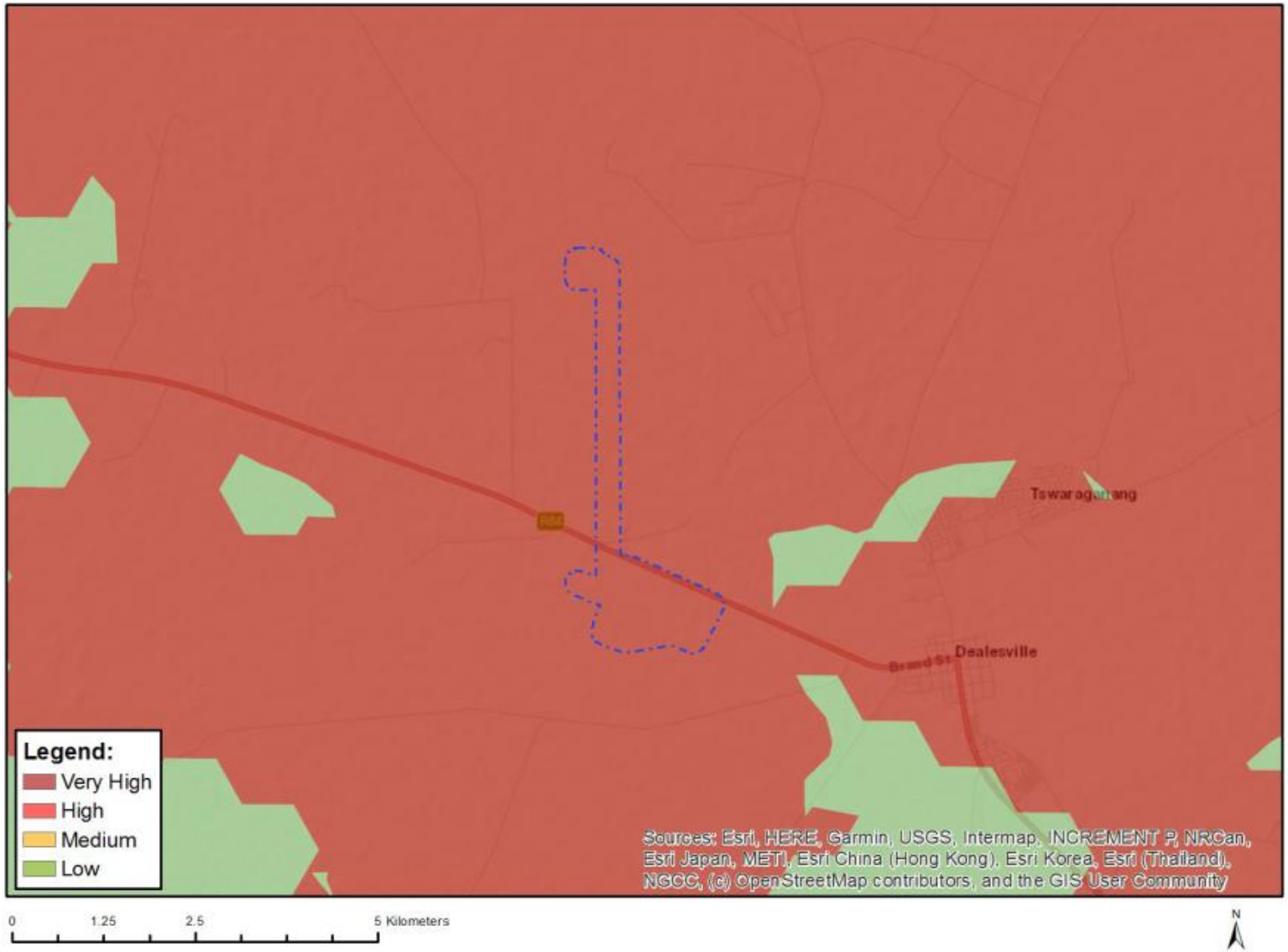


Figure 10: Map of Relative Terrestrial Biodiversity Theme Sensitivity

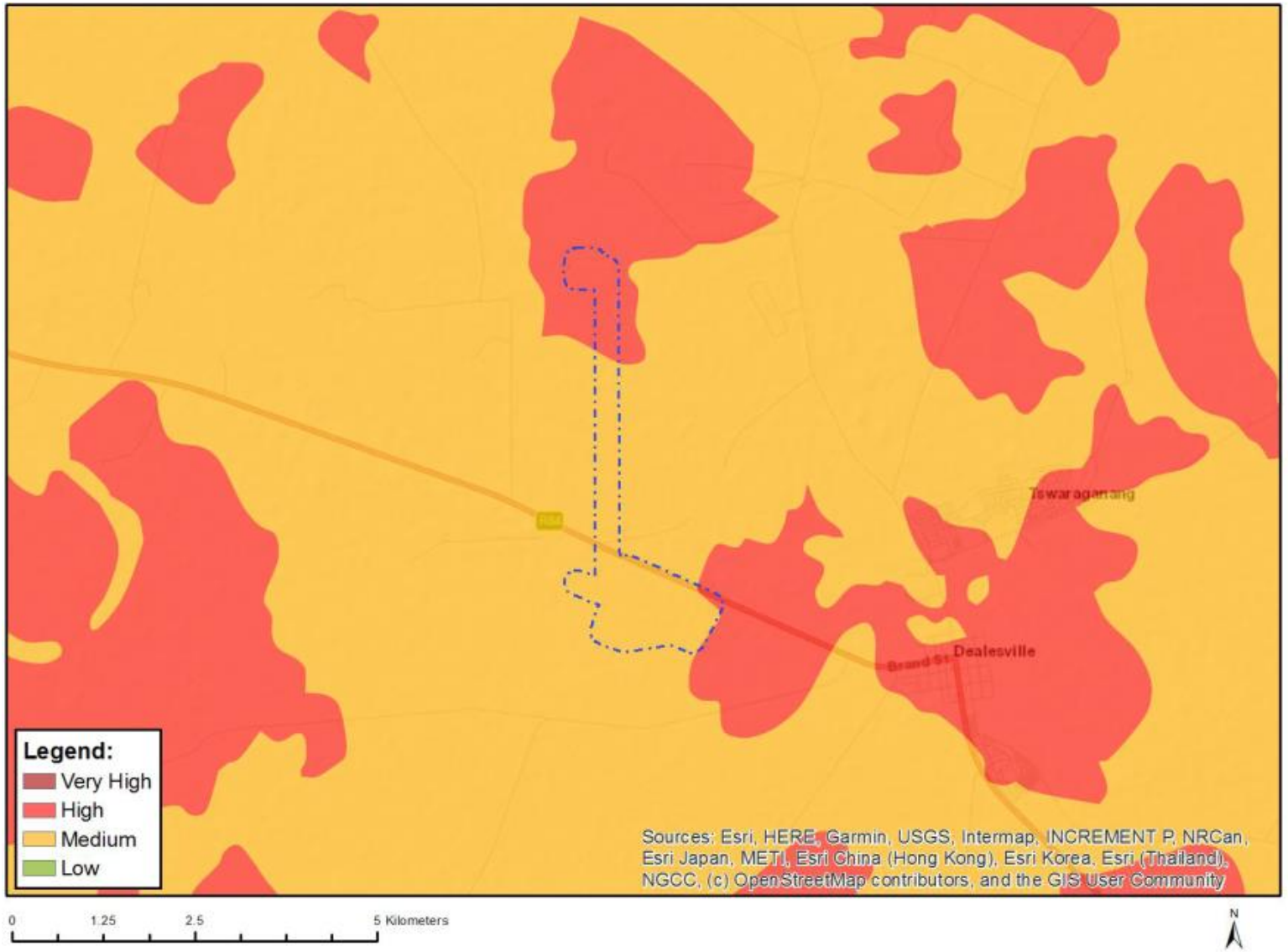


Figure 10: Map of Relative Palaeontology Theme Sensitivity

7.2 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:

This declaration will be signed by the proponent/applicant/holder of the EA once the contractor is appointed and has provided inputs to this Generic EMPr as per the requirements of this template.

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

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

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

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

If Part C is applicable to the development as authorised in the EA, it is required to be submitted to the CA together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

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

Figure 8.1: Site Specific Mitigation[2]

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Aquatic	Reduce loss of aquatic species including any Species of Special Concern- Potential loss of protected or listed aquatic species	PM/ ECO / ESO	• All alien plant re-growth, which is currently low within the greater region must be monitored monthly and should it occur, these plants must be eradicated within the project footprints and especially in areas near the proposed crossings.	**Construction Decommissioning**	ECO / ESO	• Weekly for protected plants • Monthly for alien plants	• Records of monitoring and adherence to implementations methods and mitigation measures. • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
	Avoid /Limit damage or loss of riparian systems and disturbance of waterbodies in the construction / decommissioning phase	PM/ ECO / ESO	• The current layout must be selected, to ensure all the observed aquatic systems will be avoided, thus avoiding this impact • <u>Sensitive habitats in close proximity to the development footprint must be avoided or demarcated as No Go area (i.e., Wetlands).</u> • <u>No activities may take place, without the necessary authorisation from this Department, within a horizontal distance of 100 m from any watercourse or estuary or within a 500 m radius from a delineated boundary of any a wetland or pan</u> • <u>All the conditions of the National Water Act (Act 36 of 1998) (NWA) must be complied with</u>		ECO / ESO	• Monthly and as and when required	• Storm Water Management Plan • Records of monitoring and adherence to implementations methods and mitigation measures. • Rehabilitation Plan • Erosion Management Plan • <u>Necessary authorisation(s) from DWS in place and kept on record</u>

[2] <u>It should be noted that a number of mitigation measures / recommendations have been provided by Organs of State (OoS) / Key Stakeholders following the completion of the 30-day review and comment period for the Draft BAR, which have been incorporated into this EMPr (this table specifically). These mitigation measures / recommendations have been underlined in this table.</u>

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
			• Registration of water uses under Section 21 of the NWA is compulsory[3]. • In terms of Section 4(1) of the NWA, a person may use water from a water resource for purposes such as reasonable domestic use, domestic gardening, animal watering, firefighting and recreational use, as set out in Schedule 1. • Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. • Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc). This will the avoid any secondary impacts that could affect downstream areas.				
	Avoid Water quality changes (increase in sediment, organic loads, chemicals or eutrophication	PM/ ECO / ESO	• All liquid chemicals including fuels and oil, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely.		ECO / ESO	• Daily to ensure plant is in working order (minimise leaks), spills are prevented and if they do occur a quickly rectified.	• Storm Water Management Plan • Records of monitoring and adherence to implementations methods and mitigation measures. • Spill Management Plan • Erosion Management Plan

[3] In terms of Section 22 of the NWA a person may only use water without a license:

- If that water use is permissible under Schedule 1.
- If that water use is permissible as a continuation of an existing lawful use.
- If that water use is permissible in terms of a General Authorisation issued under Section 39 of the NWA.

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
			• The storage of material, chemicals, fuels, etc. must not pose a risk to the surrounding environment and this includes surface and groundwater resources. Temporary bunds must also be constructed around chemical or fuel storage areas to contain possible spillages. Such storage areas must be located outside the 1: 100-year floodline of a river and must be fenced to prevent unauthorised access into the area. The maintenance of vehicles and equipment used for any purpose during the prospecting activity will take place only in the maintenance yard area. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100m of a river channel. • All construction camps, lay down areas, wash bays, batching plants or areas and any stores should be more than 50 m from any demarcated water courses. • Littering and contamination associated with construction activity must be avoided through effective construction camp management. • Zero discharge of contaminated surface water is allowed				

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
			• The Plant should be sited, designed and managed so that the quality of surface and groundwater in the vicinity are not degraded by runoff, leaching or seepage from the site or waste utilization areas • No stockpiling should take place within or near a water course • All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable • Monitoring must take place on a continuous basis to ensure the relevant mitigation measures / recommendations are adhered to				
	Hydrological regime or Hydroperiod changes (Quantity changes such as abstraction or diversion)	PM/ ECO / ESO	• A stormwater management plan must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. • Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil • The applicant must ensure the storm water run-off has to be directed away from the site to ensure the separation of clean and dirty water	**Operation**	ECO / ESO	• Annual Inspection of stormwater control systems to ensure these are functional	• Storm Water Management Plan • Records of monitoring and adherence to implementations methods and mitigation measures.

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Terrestrial Ecology and Plant Assessment	Loss of natural vegetation	PM/ ECO / ESO	• Restrict activities to footprint areas, use existing maintenance and access roads, rehabilitate disturbed areas after construction, control alien invasive plant species. • Sensitive habitats in close proximity to the development footprint must be avoided or demarcated as No Go areas. • Pre-construction walk through - The presence of any species of conservation concern within the development area as well as along the grid connection should be checked • A Pre-construction walk-through of the approved development footprint must be conducted to ensure that sensitive habitats and species are avoided where possible.	**Construction** **Decommissioning**	ECO / ESO	• Annual monitoring for 3 years after construction to evaluate vegetation cover, species composition.	• Records of monitoring and adherence to implementations methods and mitigation measures. • Records of walkthrough reports and compliance with various plans and reports as per ECO reports • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
	Invasion by alien invasive plant species	PM/ ECO / ESO	• Compile and implement an alien invasive control plan, monitor degree of invasion as well as outcome and effectiveness of control measures. • Erosion and Alien Invasive Plant Species Management Plan and Rehabilitation Plan must be developed to mitigate on habitat degradation due to erosion and alien plant invasion.	**Operation**	ECO / ESO	• Annual monitoring for 3 years after construction to evaluate vegetation cover, species composition.	• Records of monitoring and adherence to implementations methods and mitigation measures. • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
	Impacts on TOPs, Red data listed or provincially protected species	PM / ECO / ESO / Ecologist	• Permits from relevant authorities must be obtained for the removal or disturbance of any TOPs, Red data listed or provincially protected species	**Construction** **Operation** **Decommissioning**	ECO / ESO / Ecologist	• Ongoing for duration of construction, operation and decommission	• Records of monitoring and adherence to implementations methods and mitigation measures. • Proof of submission of permit applications. • Permits kept on file (if required)

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Avifauna	Habitat destruction during construction & maintenance	PM / ECO / ESO	• A pre-construction avifaunal walk down should be conducted to: • Confirm final layout and identify any sensitivities that may arise between the conclusion of the BA process and the construction phase. • Identify any sensitive species breeding on site that may arise between the conclusion of the BA process and the construction phase. • All construction activities should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment. • All temporary disturbed areas should be rehabilitated according to the site's rehabilitation plan, following construction. • A pre-construction avifaunal walk down should be conducted to provide final confirmation of the sections of power line requiring bird collision mitigation.	**Construction**	ECO / ESO	• Monthly The new power line should be patrolled during operation by ESKOM annually to measure any impacts on birds (through detecting collision fatalities) and to monitor the durability of the line marking devices Where multiple devices on a span have failed they should be replaced immediately. Data should be submitted to the Eskom –EWT Strategic Partnership where it will be curated and publicly accessible.	• Records of walkthrough reports and compliance with various plans and reports as per ECO reports • Rehabilitation Plan
	Collision of birds with overhead cables	PM/ ECO / ESO	• It is recommended as a precautionary measure that the standard Eskom Bird Perch be fitted to all pole tops to further provide safe perching space well above dangerous hardware. • It is also essential that if any of the pylon structures are changed, we are given opportunity to assess the	**Operation**	ECO / ESO	• As required	• Records of walkthrough reports and compliance with various plans and reports as per ECO reports

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
			electrocution risk of the new structures and design mitigation. • An approved antibird collision line marking device must be fitted to overhead cables on high-risk sections of the alignments to make cables more visible to birds in flight and reduce the likelihood or collision				
	Electrocution of birds perched on power lines	• PM/ ECO / ESO	• It is recommended as a precautionary measure that the standard Eskom Bird Perch be fitted to all pole tops to further provide safe perching space well above dangerous hardware. • It is also essential that if any of the pylon structures are changed we are given opportunity to assess the electrocution risk of the new structures and design mitigation.	**Operation**	ECO / ESO	• As required	• Records of walkthrough reports and compliance with various plans and reports as per ECO reports
Heritage / Archaeology / Palaeontology	Destruction of archaeological resources	• PM/ ECO / ESO	• Recording and sampling of artefacts from the site (waypoints 286 to 289). • Appoint archaeologist to conduct mitigation well before construction	**Planning and Design**	ECO / ESO	Once off prior to constrcution	• Records of walkthrough reports and compliance with various plans and reports as per ECO reports • SARAH permit in place
	Impacts to the cultural landscape	PM/ ECO / ESO	• Minimise disturbance footprint. • Rehabilitate all areas not required during operation. • Minimise size of access track.	**Construction Operation Decommissioning**	ECO / ESO	On-going	• Records of monitoring and adherence to implementations methods and mitigation measures. • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
	Impacts to archaeological sites or remains, fossils or other categories of	PM/ ECO / ESO	• If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other	**Construction Operation Decommissioning**	ECO / ESO	On-going	• Records of monitoring and adherence to implementations methods and mitigation measures. • Proof of correspondence with SAHRA APM Unit,

Specialist	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
	heritage resources		categories of heritage resources are found during the proposed development, SAHRA APM Unit (Sityhilelo Ngcatsha/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule. • If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA.				• Proof of Phase 2 rescue operation (subject to permits issued by SAHRA), if required / applicable.
	Impacts to unmarked human burials	PM/ ECO / ESO	• If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule.	**Construction Operation Decommissioning**	ECO / ESO	On-going	• Records of monitoring and adherence to implementations methods and mitigation measures. • Proof of correspondence with the SAHRA Burial Grounds and Graves (BGG) Unit.

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: CURRICULA VITAE

CURRICULUM VITAE

LIANDRA SCOTT-SHAW

SENIOR ENVIRONMENTAL CONSULTANT

Environmental Management, Planning and Approvals, South Africa

QUALIFICATIONS

Pr.Sci.Nat	2017	Professional Natural Scientist (Ecological Science), South African Council for Natural Scientific Professions
BSc Hons.	2009	BSc Honours (Ecological Science), University of KwaZulu Natal
BSc	2008	BSc (Biological Science), University of KwaZulu Natal

EXPERTISE

- Environmental Impact Assessment
- Environmental licensing
- Environmental Compliance monitoring and auditing
- Vegetation Impacts Assessment and permitting
- Diatom Biomonitoring

Liandra joined SLR in March 2021 in her capacity as Senior Environmental Consultant and has over 8 years' experience as an Environmental Assessment Practitioner within the environmental consulting field. She has degrees in Biological and Ecological Science and has expertise in a wide range of environmental disciplines, including Environmental Impact Assessments, Environmental Management Programmes, Environmental Compliance Monitoring & Auditing and Vegetation Assessments and Diatom Biomonitoring.

She has been responsible for the management of a wide range of projects, including environmental authorisations, compliance monitoring and auditing, vegetation assessments and permitting and diatom biomonitoring.

Over the last few years Liandra's focus has been in the renewable energy sector. Specifically involved with Environmental Impact Assessments and specialist management for the Risk Mitigation Independent Power Producer Procurement and Renewable Energy Independent Power Producer Procurement Programmes (RMIPPPP and REIPPPP).

PROJECTS

A sample of Liandra's recent project experience, is provided below.

RENEWABLE ENERGY

Oya Energy Hybrid Facility EIA and Grid Connection BA (2020-2021)	Completed the Environmental Impact Assessment, Basic Assessment, and associated Amendment Processes for the 128MW facility, which included powerlines, wind energy facility (WEF), solar photovoltaic (PV), Battery Energy Storage System (BESS) and fuel-based generators (FBG). Liandra project managed the processes and assisted the client in compiling and submitting the bid for RMIPPPP. The project is a preferred bidder for the RMIPPPP
Kudusberg Wind Energy Facility (WEF) Amendment (2020-2021)	Completed the Amendment Process for getting the facility bid ready, this included finalizing layouts and EMPrs.
Droogfontein 3 PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.

Mierdam PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Dwarsrug WEF BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Platsjambok East PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Platsjambok West PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Loeriesfontein 3 PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Grid connection for between the Dwarsrug WEF to Loeriesfontein PV	Completed the Basic Assessment for the Grid connection. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Tooverberg Wind Energy Facility (WEF) EIA and Grid Connection BA (2018-2019)	Assisted in completing the EIA and BA Processes for the facility. Liandra undertook technical and report writing and client liaison when the original project manager left.
Rondekop Wind Energy Facility (WEF) EIA (2018-2019)	Completed the EIA Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Umsobomvu PV Project EIAs (x3) and Grid Connections Bas (x3) near Noupoort and Middelburg, Eastern and Northern Cape Provinces (2018-2020)	Completed the Amendment Process for the facilities. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the proposed development of the Hartebeest Leegte Wind Farm near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the development of the Graskoppies Wind Farm and grid near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.

Amendments for the proposed development of the Ithemba Wind Farm near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the proposed development of the Xha! Boom Wind Farm near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendment for the Proposed Beaufort West Wind Farm, Western Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendment for the Proposed Trakas Wind Farm, Western Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the Proposed Dwarsrug Wind Farm near Loeriesfontein, Northern Cape Province	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the Grid Connections for Graskoppies, Haratebeest Leegte, Itemba and !Xha Boom Wind Energy Facilties near Loeriesfontein, Northerrn Cape Province	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Regulation 54 Audits (2019)	• Darling Wind Energy Facility, Western Cape Province • Great Kei Wind Energy Facility, Eastern Cape Province • Motherwell Wind Energy Facility, Eastern Cape Province • Ncora Wind Energy Facility, Eastern Cape Province • Nqamakwe Wind Energy Facility, Northern Cape Province • Peddie Wind Energy Facility, Eastern Cape Province • Ukomeleza Wind Energy Facility, Eastern Cape Province • Umsobomvu Wind Energy Facility, Northern and Eastern Cape Provinces

MEMBERSHIPS

SACNASP	Registered with South African Council for Natural Scientific Professions as a Professional Natural Scientist (Pr.Sci.Nat) in Environmental Science (117442)
IAIAsa	Member of the International Association of Impact Assessors (3624)

PUBLICATIONS

	Lang P, Taylor J, Bertolli L, Lowe S, Dallas H, Kennedy MP, Gibbins C, Sichingabula H, Saili, Day J, Willems F, Briggs JA and Murphy KJ 2013. Proposed procedure for the sampling, preparation and analysis of benthic diatoms from Zambian rivers: a bioassessment and decision support tool applicable to freshwater ecoregions in tropical southern Africa. Africa, Caribbean, Pacific-European Union Project Report.
	Martins S, Kennedy M, Lowe S, Lang P, Briggs J, Dallas H, Taylor J, Bertolli L, Gibbins C, Soulsby C, Day J, Sichingabula H, Saili H, Kapungwe E, Willems F, Mbulwe F, Murphy K. 2013. SAFRASS Methodology Manual.
	Shrader AM, Bell C, Bertolli L and Ward D 2012. Forest or the trees: at what scale do elephants make foraging decisions? Acta Oecologica 42: 3-10.
	Lang P, Taylor J, Bertolli L, 2012. River diatom biodiversity assessments in Zambian rivers: a SAFRASS conservation perspective. European Congress of Conservation Biology, Glasgow.
	Martins S, Kennedy M, Lowe S, Lang P, Briggs J, Dallas H, Taylor J, Bertolli L, Gibbins C, Soulsby C, Day J, Sichingabula H, Saili H, Kapungwe E, Willems F, Mbulwe F, Murphy K. 2012. SAFRASS Photographic guide to the Aquatic Macroinvertebrates of Zambia. European Union Project Report

APPENDIX 3: CHANCE FIND FOSSIL PROCEDURE

1 CHANCE FIND PROTOCOL

The following procedure will only be followed if fossils are uncovered during excavation.

1.1 LEGISLATION

Cultural Heritage in South Africa (includes all heritage resources) is protected by the **National Heritage Resources Act (Act No 25 of 1999) (NHRA).** According to Section 3 of the Act, all Heritage resources include **"all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens**".

Palaeontological heritage is unique and non-renewable and is protected by the NHRA and are the property of the State. It is thus the responsibility of the State to manage and conserve fossils on behalf of the citizens of South Africa. Palaeontological resources may not be excavated, broken, moved, or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA.

1.2 BACKGROUND

A fossil is the naturally preserved remains (or traces thereof) of plants or animals embedded in rock. These organisms lived millions of years ago. Fossils are extremely rare and irreplaceable. By studying fossils, it is possible to determine environmental conditions that existed in a specific geographical area, millions of years ago.

1.3 INTRODUCTION

This informational document is intended for workmen and foremen on construction sites. It describes the actions to be taken when construction activities accidentally uncovers fossil material.

It is the responsibility of the Environmental Site Officer (ESO) or site manager of the project to train the workmen and foremen in the procedure to follow when a fossil is accidentally uncovered. In the absence of the ESO, a member of the staff must be appointed to be responsible for the proper implementation of the chance find protocol as not to compromise the conservation of fossil material.

1.4 CHANCE FIND PROCEDURE

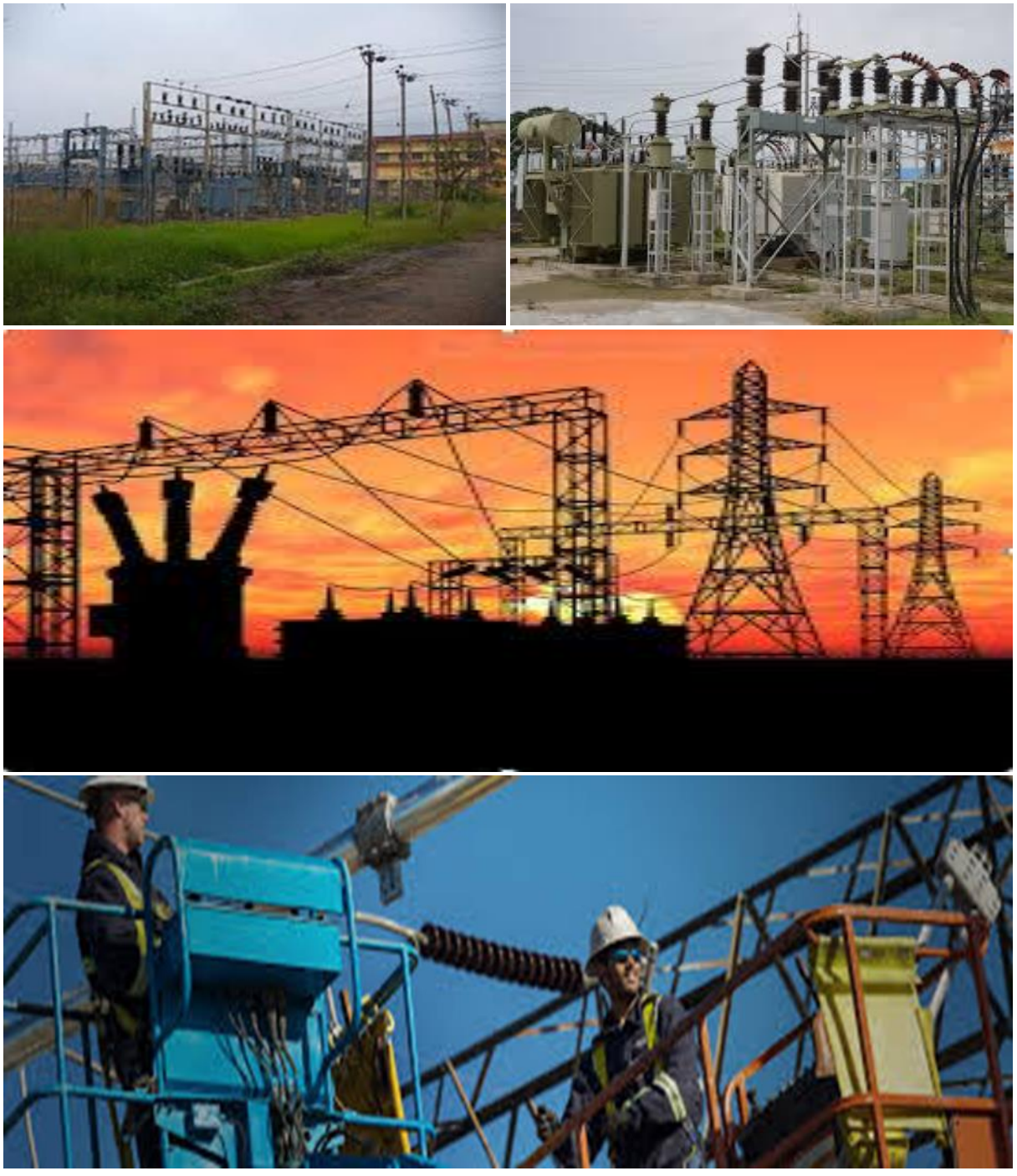
- If a chance find is made the person responsible for the find must immediately **stop working** and all work that could impact that finding must cease in the immediate vicinity of the find.

- The person who made the find must immediately **report** the find to his/her direct supervisor which in turn must report the find to his/her manager and the ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (South African Heritage Research Agency, SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates.
- A preliminary report must be submitted to the Heritage Agency within **24 hours** of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.

Upon receipt of the preliminary report, the Heritage Agency will inform the ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.

- The site must be secured to protect it from any further damage. **No attempt** should be made to remove material from their environment. The exposed finds must be stabilized and covered by a plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.
- If the fossil cannot be stabilized the fossil may be collected with extreme care by the ESO. Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site.
- Once the Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area.

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



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 substation infrastructure for the transmission and distribution of electricity, 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 substation infrastructure for the transmission and distribution of electricity. 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 substation infrastructure for the transmission and distribution of electricity requiring EA in terms of NEMA. 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 realization 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 substation infrastructure for the transmission and distribution of electricity, 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

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

Part	Section	Heading	Content
			approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact 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 property or farm in which the proposed substation 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. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features and within 50 m from the development footprint.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) 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 impact management 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 as a minimum 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;

"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	Environment 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&APs	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)	<u>Role</u> 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. <u>Responsibilities</u> - 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)	<u>Role</u>

Responsible Person(s)	Role and Responsibilities
	The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. <u>Responsibilities</u> - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties (RI&APs), 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

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

Responsible Person(s)	Role and Responsibilities
	- 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 (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor;

Responsible Person(s)	Role and Responsibilities
	- 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	Role The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity 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

Responsible Person(s)	Role and Responsibilities
	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: <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

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 substation 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. As 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 activities, 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 included in the EMPr file and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. 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 substation infrastructure for the transmission and distribution of electricity. There is a list of aspects identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, 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 substation infrastructure for the transmission and distribution of electricity.

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 understand 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	Hold environmental awareness training workshops	Pre-construction Construction	ECO dEO	Monthly and as and when required	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	Scheduling of sufficient sessions through consultation with the ECO / cEO / dEO	Pre-construction Construction	ECO dEO	Monthly and as and when required	Attendance register and training minutes / notes for the record
– Refresher environmental awareness training is available as and when required;	cEO / dEO in consultation with the ECO	Hold refresher environmental awareness training workshops	During the construction phase	ECO dEO	Monthly and 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;	cEO / dEO	Hold training workshops and ensure that the EA and EMPr is readily available	During the construction phase	ECO dEO	Monthly and as and when required	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: a) Safety notifications; and	Contractor	Develop and place appropriate	Pre-construction Construction	ECO dEO cEO	Monthly	Photographic record

b) No littering.		posters at key 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.	cEO / dEO in consultation with the ECO	Develop environmental awareness training material which covers the minimum requirements	Pre-construction Construction	ECO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– A record of all environmental awareness training courses undertaken as part of the EMPr must be available;	ECO / cEO / dEO	Filing system including all proof of training (i.e. attendance register and training minutes / notes for the record)	During the construction phase	ECO dEO	Monthly	Completed and up to date filing system with proof of training
– Educate workers on the dangers of open and/or unattended fires;	cEO / dEO in consultation with the ECO	Develop environmental awareness training material which covers the dangers of open	Pre-construction Construction	ECO dEO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist

		and/or unattended fire				
– A staff attendance register of all staff to have received environmental awareness training must be available.	ECO / cEO / dEO	Filing system including all proof of training (i.e. attendance register)	During the construction phase	ECO dEO	Monthly	Completed and up to date filing system inclusive of all attendance registers
– Course material must be available and presented in appropriate languages that all staff can understand.	ECO / cEO / dEO	Develop environmental awareness training material in the required languages. Training material must by readily available to all staff	During the construction phase	ECO dEO	Monthly	Environmental awareness training material requirements checklist and the training register which must indicate the language of the training

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimized 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,	Contractor	Development of an appropriate method statement	Pre-construction	ECO dEO	Once, prior to construction	Availability of the method statement which complies with the minimum

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;						requirements listed
– Location of construction 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;	DPM	Place construction camps outside of sensitive areas identified in the Basic Assessment Report	Pre-construction Construction	ECO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas
– Sites must be located where possible on previously disturbed areas;	DPM	Place site outside of sensitive areas and within previously disturbed areas identified in the BA Report	Pre-construction	ECO dEO	Once, prior to construction	Availability of a layout and sensitivity map indicating avoidance of sensitive areas and placement within disturbed areas
– The camp must be fenced in accordance with *Section 5.5: Fencing and gate installation*; and	DPM	Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr	Pre-construction & Construction	ECO dEO	Once, prior to construction and once during the construction of the fencing	The camp is fenced in accordance with Section 5.5 of this EMPr
– The use of existing accommodation for contractor staff, where possible, is encouraged.	Not applicable – the development of new accommodation is not proposed.					

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 in consultation with the ECO	Spatially demarcate access restricted areas informed by the BA Report	Pre-construction	ECO	Once, prior to construction	Access restricted areas are identified and provided in a spatial format
– 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 in consultation with the ECO	Erect appropriate temporary barriers around access restricted areas	At the commencement and for the duration of the construction phase	ECO	Monthly	Access restricted areas are closed-off through temporary barriers and barriers are 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 access restricted areas and provide clear signage of restricted status	During the construction phase	ECO	Monthly, and as and when required	Photographic evidence and notes of compliance that no unauthorised access or activities has taken place within the access restricted areas

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
– An access agreement must be formalized and signed by the DPM, Contractor and landowner before commencing with the activities;	DPM Contractor	Develop access agreements with the affected landowners. Ensure that agreements are approved and signed	Pre-construction	dEO ECO	Once, prior to construction	Availability of approved and signed negotiations
– 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 private roads used for construction as degradation takes place	During the construction phase	cEO / ECO	Weekly	Photographic record of the pre-construction condition and degradation of roads, and records of the implementation and effectiveness of maintenance activities

– All contractors must be made aware of all these access routes.	dEO / cEO	Develop a map illustrating all access routes associated with the project and present and provide the map to all contractors	Pre-construction Construction	ECO	Once, prior to construction	Access routes map readily available
– 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 and re-habilitated to the pre-disturbance state	Construction and Rehabilitation	ECO	Bi-weekly (every two weeks)	Photographic record of the closure of access roads and re-vegetation
– Maximum use of both existing servitudes and existing roads must be made to minimise further disturbance through the development of new roads;	Contractor (and Eskom maintenance staff where relevant to operation)	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	Weekly	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 and the condition thereof agreed by the landowner, the DPM, and the contractor;	dEO / cEO	Record the conditions of private roads to be used (prior to use) as per the requirements of	During the construction phase	ECO	Prior to the use of private roads	Photographic record and proof of the road conditions agreed upon

		section 4.9 and agree on the required condition of the roads with the landowner, DPM and contractor				with the relevant parties
– 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 during the design and once prior to construction	Implementation of the approved layout
– Access roads must only be developed on pre-planned and approved roads.	Contractor	Construction of access roads only on pre-planned and approved access roads	During the construction phase	ECO dEO	Once during the design and weekly during the construction of access roads	Implementation of the approved layout

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	Pre-construction & Construction	dEO	Monthly	Existing gates are utilised on a frequent basis and only limited

		the existing gates to be used				new access gates are developed
– Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record;	ECO	Existing and new gates will be recorded and documented as per the requirements of section 4.9	During the construction phase	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 (and Eskom maintenance staff where relevant to operation)	Ensure all relevant gates are fitted with locks and are always locked	Construction and Operation	ECO Operation and maintenance team	Bi-weekly (every second week)	All gates are locked and no complaints from landowners are received in this regard
– At points where the line crosses an existing 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 the approval of the affected landowner	During the construction phase	ECO	Once, prior to construction and during the construction phase, as and when required	New gates are installed where 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	During the construction phase	cEO	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	During the construction phase	cEO	Once, during the erection of the gates during	New gates installed as per the requirement

		installed for jackal proofing			the construction phase	
– Original tension must be maintained in the fence wires;	Contractor	Maintain original tension of fences through required activities	During the construction phase	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	During the construction phase	ECO	Once, during the erection of the gates during the construction phase	Gates installed in electrified fencing is electrified
– All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities;	Contractor	Undertake maintenance activities on fences and barriers	During the construction phase	ECO	Monthly	Photographic record of maintained fences and barriers
– Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable;	Contractor	Fence construction camps, batching plants, hazardous storage areas and access restricted areas	During the construction phase	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 land owner.	dEO/ cEO Contractor	Obtain written approval from the relevant landowner where temporary fencing is required to restrict life-stock movement	During the construction phase	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 materials approved by SABS	During the construction phase	cEO	To be monitored as fencing is erected during the construction phase	Use of high quality materials for fencing approved by SABS
– The use of razor wire as fencing must be avoided as far as possible;	Contractor	Razor wire must not be sourced or used for the erection of fencing	During the construction phase	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 formalised process. Appoint a security company	During the construction phase	cEO	Weekly and as and when required	Fences are locked and no complaints from landowners are received. A security company is appointed
– 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 the 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 fence uprights associated with the project is present following the

						completion of the construction phase

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;	DPM / Contractor / dEO / cEO in consultation with the ECO	The onsite borehole must be registered with the DWS prior to commencement of activities	Prior to commencement, during construction and operational phase	ECO / dEO	Registration of borehole once off prior commencement of construction and monitoring of abstraction volumes on a daily basis during construction and during operation.	Proof of registration of borehole from DWS and proof of daily records of abstraction volumes to be attached to monthly audit reports.
– The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or	DPM and Contractor	Method Statements According to the Water Use Licence	Construction and Operation	ECO	Continuous	Method Statements and Water Use Licence on file and Photographic records

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 on-site construction processes	During the construction phase	ECO	Monthly, and as and when required	Successful implementation of water conservation

5.7 Storm and wastewater 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	Implement measures for the control and management of runoff	During the construction phase	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 approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility;	Contractor and cEO	Obtain approved absorbent material and make use of licensed waste	During the Construction Phase	ECO	Monthly	Availability of approved absorbent material at the construction site and proof of

		disposal facilities for disposal of oil				disposal of oil at licenses disposal facilities
– Natural stormwater 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 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 to discharge	During the construction phase	ECO	As and when the need arises to discharge natural stormwater runoff and clean 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.
– 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 to discharge	During the construction phase	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.

5.8 Solid and hazardous waste management

Impact management outcome: Wastes are 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	Develop and implement a waste management plan	During the construction phase	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 which are strategically placed throughout the site	During the construction phase	ECO	Weekly	Appropriate waste collection bins are available throughout the site
– 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 through signage	Design and Construction Phase	ECO	Once, prior to the commencement of construction	A waste collection site is appropriately placed and demarcated

		and temporary fencing				
– 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 as per the waste requirements for the project during construction	During the Construction Phase	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 phase	During the Construction Phase	cEO	Weekly	Separate waste bins are available on site and waste generated is separated into the relevant bins
– 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 requirements 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	During the construction phase	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	During the construction phase	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 disposal facilities must be undertaken as per the waste management plan	During the construction phase	ECO	Monthly	Disposal certificates of disposal at licensed facilities to be provided
– Certificates of safe disposal for general, hazardous and recycled waste must be maintained.	Contractor	Obtain certificates for safe disposal of waste	During the construction phase	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	Contractor to undertake activities which can cause spills of pollutants outside of watercourses	During the construction phase	ECO	Weekly	No incidents reported of spillage of pollutants into watercourses
– In the event of a spill, prompt action must be taken to clear the polluted or affected areas;	Contractor and cEO	Develop a management plan or process for implementation should a spill take place	During the construction phase	ECO	Weekly	Feedback must be provided by the 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	cEO and Contractor	Ensure layout has been informed by the environmental sensitivities as determined by the basic assessment and specialist studies	Construction Phase	ECO	Once off review that the layout used is the approved one	Confirm no development equipment traverses any seasonal or permanent wetland as per the authorised layout by reviewing the as-built designs (once-off confirmation).

– No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur;	Not applicable – no estuaries are located within the study area.					
– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;	Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available;	cEO, Contractor	Ensure that permeant crossings (access roads) are provided for access to the grid connection corridor if no alternative crossing is available.	During the construction phase	cEO	Weekly
– There must not be any impact on the long-term morphological dynamics of watercourses or estuaries	There must not be any impact on the long-term morphological dynamics of watercourses or estuaries;	DPM, cEO	Develop a management plan or process for implementation should a spill take place within a watercourse and ensure continually monitoring	During the construction and operation phase	ECO, dEO	For all phases of the project life cycle (i.e. construction, operation, decommissioning)
– Existing crossing points must be favored over the creation of new crossings (including temporary access)	DPM, cEO	Develop a management plan or process for implementation should a spill take place within a watercourse	During the pre-construction and construction phase	ECO, dEO	During the construction phase of the project.	Existing crossing points utilised as opposed to new ones created and no incidents reported of spillage of pollutants into watercourses

		and ensure continually monitoring				
– When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must 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.	Contractor	Activities undertaken near watercourses must be in-line with and consider the specified environmental controls	During the construction phase	ECO	Monthly, and as and when required	No degradation of the watercourses and no incidents of destruction reported

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

General:						
– Indigenous vegetation which does not interfere with the development must be left undisturbed;	cEO, Contractor (and Eskom maintenance staff where relevant to operation)	Demarcate areas of indigenous vegetation to be avoided before clearance is undertaken	Construction and operation (i.e. for maintenance purposes)	ECO Operation and maintenance team	Weekly, and as and when required	No unnecessary clearance of indigenous vegetation is undertaken
– 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	During the Construction Phase	ECO	Weekly, and as and when required	No clearance of protected or endangered species other than those permitted to be removed
– 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;	Relevant specialist in consultation with the Contractor	Develop and implement a Plant Search and Rescue Plan	Pre-construction & Construction	ECO	Weekly, and as and when required	Implementation of the Plant Search and Rescue Plan and photographic evidence and notes of the implementation of the plan
– Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed;	DPM	Undertake the permitting process in order to obtain the relevant permits for the removal of protected species. Permits	Pre-construction	ECO	Once, prior to the commencement of the construction phase and removal of the protected species	Permits on file

		must be kept on file				
– 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	Ensure that the audit report indicates all species rescued and replanted and provides feedback in terms of compliance with the conditions of permits for replanting	During the Construction Phase and following the completion of the Construction Phase	ECO	Once off or as and when required	ECO confirmed rescued and replanted programme implemented correctly.
– Trees felled due to construction must be documented and form part of the Environmental Audit Report;	ECO	Ensure that the audit report documents the details of trees felled	During the Construction Phase and following the completion of the Construction Phase	CA permits on file	Trees felled due to construction must be documented and form part of the Environmental Audit Report;	ECO
– 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	During the Construction Phase	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 trained;	DPM qnd Contractor (and Eskom maintenance staff where relevant to operation)	A suitably qualified pest control operator must be appointed	Construction and Operation	ECO	As and when the use of herbicides is required	Only registered pest control operators must be appointed and proof of their registration must be provided
– 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	During the construction phase	ECO	Monthly	Daily register provided by the pest control operator
– No herbicides must be used in estuaries	Not applicable - no estuaries are present within the study area					
– 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 in consultation with the cEO	Spatially demarcate protected species and sensitive vegetation and implement appropriate fencing where required as per section 5.3	During the construction phase	ECO	Once, during the undertaking of the demarcation of the areas and the erection of the fencing	Demarcation and fencing is undertaken in-line with the requirements of section 5.3
– Alien invasive vegetation must be removed and disposed of at a licensed waste management facility.	Contractor	Remove all alien invasive vegetation and dispose of the removed vegetation at a licensed waste	During the construction phase	ECO	Monthly, and as and when required	Disposal certificates of disposal at licensed facilities to be provided and filed as part of the filing system

		management facility				

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

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 and during the construction phase	ECO	Once, prior to the commencement of construction and as and when required during the construction phase	Written consent provided by the landowner and proof of representation of the landowner during interference
– 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	The planning and development programme which includes the consideration of 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 (and	Avoid breeding sites and ensure that special care is taken in	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Weekly, and as and when required during the construction.	Photographic record of intact breeding sites

	Eskom maintenance staff where relevant to operation)	the presence of nestlings and fledgelings			Monthly, and as and when required during operation	
– 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 (and Eskom maintenance staff where relevant to operation)	All mitigation measures recommended by the avifauna specialist must be implemented	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Weekly during construction and monthly during operation	Photographic record of compliance and successful implementation of the recommended measures
– 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	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas	During the Construction Phase	ECO	Monthly, and as and when required	No instances of poaching is reported
– No deliberate or intentional killing of fauna is allowed;	dEO / cEO in consultation with the Contractor	All site staff must be informed of this requirement during the Environmental	During the Construction Phase	ECO	Monthly, and as and when required	No instances of deliberate or intentional killing is reported

		Awareness Training and the consequences of not adhering to the requirement. These areas must be demarcated as Access Restricted Areas				
– In areas where snakes are abundant, snake deterrents are 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 (and Eskom maintenance staff where relevant to operation)	Implement and maintain snake deterrents in areas where snakes are abundant	During the Construction Phase Operation Phase	ECO Operation and maintenance team	Once, during the construction 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.	DPM in consultation with the dEO	Undertake a permitting process to obtain the required permits	Pre-construction	ECO	Once, prior to the commencement of construction and as and when required	Permits for removal and/relocation must be kept on file and be readily available

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.		
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 and ECO	Undertake a Heritage Walk-through Survey Spatially identify and demarcate areas of heritage significance as per 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 a suitably qualified specialist to carry out the monitoring of excavations for fossils, artefacts and important heritage material	During the Construction Phase	ECO	During the undertaking of excavations of fossils, artefacts and heritage material	Proof of appointment of a suitably qualified specialist and photographic record of required monitoring by the specialist
– 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	dEO / cEO in consultation with the Contractor and ECO	Develop and implement procedures for situations where human remains, archaeological, palaeontological or historical	During the Construction Phase	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.

be allowed to remove/collect such material before development recommences.		material are uncovered				

5.13 Safety of the public

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

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.;	cEO in consultation with the Contractor	Develop an Emergency Preparedness, Response and Fire Management Plan specific to the project	Pre-construction Construction	ECO	Once, prior to the commencement of construction and weekly during the construction phase	Compliance with the Emergency Preparedness, Response and Fire Management 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	During the Construction Phase	ECO	Weekly	Excavations are fenced where required and photographic proof can be provided

		be open for long-periods of time				
– Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed infrastructure and protective scaffolding;	Contractor	All staff must be easily identifiable and the climbing of infrastructure and scaffolding must be undertaken by authorised personnel as managed by the Contractor	During the construction phase	ECO	Monthly, and as and when required	No incidents of unauthorised climbing is reported
– Ensure structures vulnerable to high winds are secured;	Contractor	Ensure that sufficient stabilisation measures are implemented to secure structures vulnerable to high winds	During the construction phase	ECO	Weekly, and as and when 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	During the construction phase	ECO	Monthly, and as and when required	The incidents and complaints register is complete and provides all the required details

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	Mobile chemical toilets must be placed appropriately and in areas which avoid environmental sensitivities	During the Construction Phase	ECO	Weekly	Mobile toilets are installed and avoid environmental sensitivities
– 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 in consultation with the cEO	All site staff must be informed of this requirement during the Environmental Awareness Training and the consequences of not adhering to the requirement.	Pre-construction & Construction	ECO	Monthly, and as and when required	No evidence of non-compliance identified
– 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;	Contractor in consultation with the cEO	The installation of the toilets by the Contractor must be as per the listed requirements	During the Construction Phase	ECO	Weekly	No evidence of non-compliance identified

c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; 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 the licensed waste disposal facility with the emptying of the toilets must be kept on file	During the Construction Phase	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	During the Construction Phase	ECO	As and when pest control is required for the project	Contractor to provide proof of pest control used being environmentally-friendly
– Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/ AIDS;	cEO / Contractor in consultation with the ECO	The effects of sexually transmitted diseases and HIV/ AIDS must be covered in the Environmental Awareness Training	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and monthly during construction	Environmental awareness training material requirements checklist
– The Contractor must ensure that information posters on HIV/ AIDS are displayed in the Contractor Camp area;	Contractor	Develop and place information posters on HIV/ AIDS	During the Construction Phase	ECO	Weekly	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;	cEO / Contractor in consultation with the ECO	Information and education of sexually transmitted diseases must be covered in the Environmental Awareness Training.	Pre-construction & Construction	ECO	Monthly	Environmental awareness training material requirements checklist
– Free condoms must be made available to all staff on site at central points;	Contractor	Placement of free condoms in mobile toilets and at the	During the Construction Phase	ECO	Monthly	Proof of placement of free condoms by the

		construction camps				contractor to be provided
– Medical support must be made available;	dEO / cEO in consultation Contractor (and Eskom maintenance staff where relevant to operation)	Ensure that designated personnel with first aid training are available on site and that first aid kits to provide medical support is readily available	Construction and Operations	ECO	Monthly	Check the availability of first aid trained 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	During the Construction Phase	ECO	Quarterly, and 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 Fire	Pre-construction	ECO	Once, prior to the commencement of construction	Emergency Preparedness, Response and Fire

		Management Plan specific to the project				Management Plan 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	Emergency Preparedness, Response and Fire Management Plan includes required specifications
– All staff must be made aware of emergency procedures as part of environmental awareness training;	cEO / dEO in consultation with the ECO	Develop environmental awareness training material which covers the relevant emergency procedures	Pre-construction	ECO	Prior to the commencement of the environmental awareness training	Environmental awareness training material requirements checklist
– 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 a procedure in the Emergency Preparedness, Response and Fire Management Plan for the event of a fire and the	Construction	ECO	As and when a fire occurs	The local authority was informed as per the relevant procedure set out in the Emergency Preparedness, Response and Fire

		procedure to be followed for informing the local authority				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 (and Eskom maintenance staff where relevant to operation)	Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17.	Construction and Operations	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 in consultation with the 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 daily during	Contractor to provide evidence of substances used for proof of compliance

					the construction phase	
– All hazardous substances must be stored in suitable containers as defined in the Method Statement;	Contractor	Develop a 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 waste is stored these must be clearly marked indicating the required details of the contents	During the Construction Phase	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	During the Construction Phase	ECO	Monthly during the Construction Phase	Photographic proof that storage areas are bunded and proof that the bund areas are of sufficient capacity to 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	During the Construction Phase	ECO	Once, during the Construction Phase	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;	cEO / Contractor	Compile and update an Alphabetical Hazardous Chemical Substance (HCS) control sheet specific to the project	During the Construction Phase	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);	cEO / Contractor	Keep a record of all hazardous chemicals and the respective MSDS	During the Construction Phase	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;	cEO / 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;	cEO / Contractor	Develop environmental awareness training material which covers the relevant impacts and safety measures.	Pre-construction & Construction	ECO	Prior to the commencement of the environmental awareness training and monthly during the construction phase for personal	Environmental awareness training material requirements checklist and all relevant personnel have undergone appropriate training and

		Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous substances and materials			protective equipment	have access to personal protective equipment
– The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers;	Contractor	Appropriate storage facilities must be constructed or obtained for the storing of diesel, other liquid fuel, oil and hydraulic fluid	During the Construction Phase	ECO	Monthly, and as and when required	Storage tanks for 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	During the Construction Phase	ECO	Monthly, and as and when required	Storage areas for the tanks/ bowsers for the project are appropriate and no incidents are reported in this regard
– The floor of the bund must be sloped, draining to an oil separator;	Contractor	Appropriate storage facilities must be constructed as per the	During the Construction Phase	ECO	Once, during construction	Bunded storage areas are constructed according to the requirements

		requirements listed				
– Provision must be made for refuelling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained;	Contractor	Appropriately constructed refuelling facility must be developed as per the requirements. Drip trays must be provided for use	During the Construction Phase	ECO cEO	Monthly Weekly	Soils at the refuelling facility are protected as required and drip trays are provided and used
– All empty externally dirty drums must be stored on a drip tray or within a bunded area;	Contractor	Ensure that empty dirty drums are stored appropriately as per the requirements	During the Construction Phase	ECO cEO	Monthly 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	During the Construction Phase	ECO	Monthly	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	Inform all employees of the requirement and develop and place relevant signage	During the Construction Phase	ECO cEO	Monthly Weekly	Photographic record of the signage placed must be provided

		in the relevant areas				
– Adequate fire-fighting equipment must be made available at all hazardous storage areas;	Contractor	Hazardous storage areas must be fitted with adequate fire-fighting equipment	During the Construction Phase	ECO	Monthly	Adequate fire-fighting equipment is available and has been serviced
– Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection such as drip trays must be used;	Contractor	Provide a mobile refuelling unit as well as suitable ground protection, where required	During the Construction Phase	ECO	Monthly, and as and when required	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	During the Construction Phase	ECO	Monthly, and as and when required	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;	cEO and Contractor	Provide training on the use of spill kits to the relevant employees	Pre-construction	ECO	Once, prior to the commencement of 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;	cEO and Contractor	Provide an appropriate number of spill kits in relevant areas	During the Construction Phase	ECO	Monthly	Proof of appropriate number of spill kits in 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 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.	cEO and Contractor	Storage and disposal of contaminated soil must be in accordance with the National Environmental Management: Waste Act and sections 5.7 and 5.8 of this EMPr	During the Construction Phase	ECO	Monthly, and as and when required	Proof of storage and disposal in terms of the National Environmental Management: Waste Act must 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	Demarcate specific areas for the maintenance of vehicles and equipment	During the Construction Phase	ECO	Monthly	A dedicated area for the maintenance of vehicles and machinery is used.
– During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to	Contractor	Ensure that a drip tray is available for an	During the Construction Phase	ECO	Monthly	Contractor to provide evidence of drip

prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts;		emergency repairs required				tray use for emergency repairs
– Leaking equipment must be repaired immediately or be removed from site to facilitate repair;	Contractor	Ensure that where leaking equipment is identified it is repaired immediately or removed from site for repairs	During the Construction Phase	ECO	Monthly	Contractor to provide details of equipment repaired or removed from site
– Workshop areas must be monitored for oil and fuel spills;	cEO	Undertake regular inspections of the workshop areas for oil and fuel spills and keep an updated register of inspection on site	During the Construction Phase	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 for the project	During the Construction Phase	ECO	Monthly, and as and when 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 required specification	During the Construction Phase	ECO	Once, during the Construction Phase and as and when required	Workshop area is bunded in accordance with the required specification
– Water drainage from the workshop must be contained and managed in accordance Section 5.7: Storm and waste water management.	Contractor	Ensure that water drainage from workshop area is	During the Construction Phase	ECO	Monthly	Workshop drainage is managed in accordance

		managed as per the requirements of section 5.7				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	Provide impermeable surface for the mixing of concrete	During the Construction Phase	ECO	Weekly	No concrete mixing is undertaken on open ground
– Batching plants areas must be fitted with a containment facility for the collection of cement laden water.	Contractor	Provide containment facility for the collection of cement laden water	During the Construction Phase	ECO	Weekly	No cement laden water is released into the environment
– Dirty water from the batching plant must be contained to prevent soil and groundwater contamination	Contractor	Provide containment facility for the collection of cement laden water (dirty water)	During the Construction Phase	ECO	Weekly	No cement laden water is released into the environment

– Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains;	Contractor	Demarcate and provide a storage area for bagged cement in-line with the listed requirements	During the Construction Phase	ECO	Weekly	Photographic proof of bagged cement stored within the demarcated area
– A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	Contractor	Provide a washout facility for the washing of associated equipment. Enforce limitations on water use for washing of equipment	During the Construction Phase	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 licensed disposal facility;	Contractor	Make use of hardened concrete where possible or dispose of concrete in a suitable manner	During the Construction Phase	ECO	Monthly	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 bags and temporarily store it in an appropriate area on site	During the Construction Phase	ECO	Monthly	Proof of binding of empty cement bags and storage in an appropriate area on site to be provided by the Contractor
– 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	During the Construction Phase	ECO	Monthly	Proof of damping (or alternative dust

		or otherwise protected from dust generation				suppression) of sand and aggregates must be provided by the Contractor
– Any excess sand, stone and cement must be removed or reused from site on completion of the construction period and disposed at a registered disposal facility;	Contractor	Ensure that all excess sand, stone and cement is removed or reused	At the completion of the Construction Phase	ECO	Once, with the completion of 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.	Contractor	Erect temporary fencing around batching plants as per the requirements listed in section 5.5	During the Construction Phase	ECO	Weekly	Temporary fencing is undertaken in accordance with section 5.5

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	Apply appropriate dust suppressant	During the Construction Phase	ECO	Weekly	Contractor to provide proof of use of appropriate dust suppressants
– 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	Proper planning for vegetation removal must be undertaken as well as for the associated rehabilitation	During the Construction Phase and Rehabilitation	ECO	Weekly	Plan for implementation must be provided by the 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 present	During the Construction Phase	ECO	Bi-weekly (every second week)	No complaints submitted in this regard
– 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 provide adequate recommendations	During the Construction Phase	Not Applicable		

– Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind;	Contractor	Place soil stockpiles in areas less affected by wind	During the Construction Phase	ECO	Bi-weekly (every second week)	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 in consultation with the ECO	Contractor to implement erosion control measures as recommended and agreed with the ECO	During the Construction Phase	ECO	Weekly, until erosion is no longer a problem	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 (and Eskom maintenance staff where relevant to operation)	Inform all drivers of speed limits and place appropriate signage along the relevant roads	During the Construction Phase Operation Phase	ECO Operation and Maintenance team	Monthly	No complaints from community members are submitted
– Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks;	Contractor	Ensure that straw stabilisation is undertaken as per the listed requirements	During the Construction Phase	ECO	Monthly	Photographic record of all straw stabilisation undertaken
– 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	During the Construction Phase	ECO	Weekly	Photographic record of measures being implemented and the results thereof

5.21 Blasting

Impact management outcome: Impact to the environment is minimized 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	Not Applicable – no blasting proposed					
– Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	Not Applicable – no blasting proposed					

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity 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	During the Construction Phase	ECO	Monthly, and as and when required	No complaints registered in this regard. No amplification equipment is used.
– All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained;	Contractor	Provide and implement silencing technology	During the Construction Phase	ECO	Monthly, and as and when required	No complaints registered in this regard. Silencing technology is utilised.

– 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	Update complaints register. Provide daily transport to and from site for employees	During the Construction Phase	ECO	Monthly, and as and when required	Complaints register provided by the cEO and proof of transportation services provided
– Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	cEO and Contractor in consultation with the ECO	Compile a Code of Conduct for staff. Appropriate operating hours must be identified for the project.	Pre-construction and Construction	ECO	Once, prior to the commencement of construction	No complaints registered in this regard.

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 / Contractor	Identify and demarcate through signage for 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 in consultation with the Contractor	Provide all vehicles with firefighting equipment	Construction	ECO	Monthly	All vehicles are fitted with firefighting equipment and the details thereof are provided by the cEO
– The local Fire Protection Agency (FPA) must be informed of construction activities;	cEO in consultation with the ECO	Undertake formal consultation to inform the local FPA of the associated construction activities	Pre-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;	dEO / cEO / Contractor in consultation with the ECO	Develop environmental awareness training material which covers the contact numbers for the FPA and emergency services.	Pre-construction & Construction	ECO	Prior to the commencement of the environmental awareness training and once during the construction phase	Environmental awareness training material requirements checklist and photographic record of contact numbers on display

		Place the contact numbers for the FPA and emergency services at a visible and central location				
– 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	Not Applicable		

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
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 and water bodies;	Contractor	Identify and demarcate an appropriate location for the storage of excavated materials	Pre-construction & Construction	ECO	Monthly	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	During the Construction Phase	ECO	Bi-monhtly (every second month)	Stockpiled material is maintained sufficiently and is clear of weeds and alien vegetation
– Topsoil stockpiles must not exceed 2 m in height;	Contractor	Enforce limitations for the height of topsoil stockpiles	During the Construction Phase	ECO	Bi-monthly (every second month)	Topsoil stockpiles do not exceed 2m in height
– During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.);	Contractor	Appropriate material must be provided in order to cover stockpiles when required	During the Construction Phase	ECO	Monthly	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	During the Construction Phase	ECO	Monthly	Contractor to provide proof of availability of sandbags to prevent erosion of stockpiled materials

5.25 Civil works

Impact management outcome: Impact to the environment minimised during civil works to create the substation terrace.		
Impact Management Actions	**Implementation**	**Monitoring**

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone;	Contractor	Collect and retain topsoil for terracing	During the Construction Phase Rehabilitation	ECO	Weekly	Proof of collection and retaining of topsoil
– Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards;	Contractor	Undertake rehabilitation of terrace embankments and areas outside of the high voltage yard where applicable	During the Construction Phase Rehabilitation	ECO	Weekly	Photographic record of rehabilitation of terrace embankments and areas outside the high voltage yards
– Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	ECO	Weekly	Disturbed slopes are stabilised sufficiently
– These areas can be 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	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO	Weekly	Slopes are stabilised as per the design specifications
– Rehabilitation of the disturbed areas must be managed in accordance with Section 5.35: Landscaping and rehabilitation;	Contractor	Undertaken rehabilitation of disturbed areas as per the requirements listed under section 5.35	Rehabilitation	ECO	Weekly	Rehabilitation of disturbed areas is undertaken in-line with the requirements of section 5.35
– All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	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 and Rehabilitation	ECO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.

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 licensed landfill site, if not used for backfilling purposes;	Contractor	Use a licensed waste disposal facility for the disposal of excess spoil	During the Construction Phase	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 and Rehabilitation	ECO	Monthly	Photographic record of spoil used for landscaping purposes as well as feedback from the contractor
– 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	During the Construction Phase	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	Undertake the management of hazardous substances spills from equipment	During the Construction Phase	ECO	Monthly	Management of hazardous substances spills from equipment is undertaken in

		as per the requirements of section 5.17				line with the requirements of section 5.17

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Batching of cement to be undertaken in accordance with Section 5.19: Batching plants; and	Contractor	Undertake the batching of cement as per the requirements of section 5.19	During the Construction Phase	ECO	Monthly	Management of batching cement is undertaken in line with the requirements of section 5.19
– Residual solid waste must be disposed of in accordance with Section 5.8: Solid waste and hazardous management.	Contractor	Undertake the disposal of solid waste as per the requirements of section 5.8	During the Construction Phase	ECO	Monthly	The disposal of solid waste is undertaken in line with section 5.8.

5.28 Installation of equipment (circuit breakers, current Transformers, Isolators, Insulators, surge arresters, voltage transformers, earth switches)

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

Impact Management Actions	**Implementation**	**Monitoring**

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Management of dust must be conducted in accordance with Section 5. 20: Dust emissions;	Contractor	Manage dust as per the requirements of section5.20	During the Construction Phase	ECO	Weekly	The management of dust is undertaken as per the requirements of section 5.20
– Management of equipment used for installation must be conducted in accordance with Section 5.18: Workshop, equipment maintenance and storage;	Contractor	Undertake the management of equipment for installation as per the requirements of section 5.18	During the Construction Phase	ECO	Monthly	Management of equipment is undertaken in line with the requirements of section 5.18
– Management of hazardous substances and any associated spills must be conducted in accordance with Section 5.17: Hazardous substances; and	Contractor	Undertake the management of hazardous substances and associated spills as per the requirements of section 5.17	During the Construction Phase	ECO	Monthly	Management of hazardous substances and associated spills is undertaken in line with the requirements of section 5.17
– Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid waste and hazardous management.	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.

5.29 Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts	Contractor	Inspect areas where construction is being undertaken and remove and appropriately dispose of wasted/unused materials	During the Construction Phase	ECO	Weekly	Contractor to provide proof of inspection and removal of waste/unused materials and the appropriate disposal thereof (i.e. disposal certificates)
– Emergency repairs due to breakages of equipment must be managed in accordance with Section 5.18: Workshop, equipment maintenance and storage and Section 5.16: Emergency procedures.	Contractor	Undertake emergency repairs of equipment as per the requirements of section 5.18 and 5.16	During the Construction Phase	ECO	Weekly	Emergency repairs of equipment is undertaken as per the requirements of section 5.18 and 5.16

5.30 Cabling and 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
– Residual solid waste (off cuts etc.) shall be recycled or disposed of in accordance with Section 5.8: Solid waste and hazardous Management;	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.
– Management of equipment used for installation shall be conducted in accordance with Section 5.18: Workshop, equipment maintenance and storage;	Contractor	Undertake the management of equipment for installation as per the requirements of section 5.18	During the Construction Phase	ECO	Monthly	Management of equipment for installation is undertaken in line with the requirements of section 5.18
– Management of hazardous substances and any associated spills shall be conducted in accordance with Section 5.17: Hazardous substances.	Contractor	Undertake the management of hazardous substances and associated spills as per the requirements of section 5.17	During the Construction Phase	ECO	Monthly	Management of hazardous substances and associated spills is undertaken in line with the requirements of section 5.17

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Impact management outcome: No environmental degradation occurs as a result of Testing and Commissioning.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid waste and hazardous management.	Contractor	Undertake the recycling or disposal of residual solid waste as per the requirements of section 5.8	During the Construction Phase	ECO	Monthly	The recycling or disposal of residual solid waste is undertaken in line with section 5.8.

5.32 Socio-economic

Impact management outcome: enhanced socio-economic development.						
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 and monthly during the construction	Communication is undertaken as per the identified strategies and no complaints are submitted regarding communication
– 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	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and monthly during the	Conflict resolution is undertaken in line with the requirements of the Grievance

		needs and provides procedures for conflict resolution			construction phase	Mechanism. No complaints on conflict resolution is submitted by the community
– Sustain continuous communication and liaison with neighboring owners and residents	Contractor	Development and implement a Grievance Mechanism which provides procedures for communication / liaison with neighbouring landowners and residents	Pre-construction & Construction	ECO	Once, prior to the commencement of construction and monthly during the construction phase	Communication / liaison with neighbouring landowners and residents are undertaken in line with the requirements of the Grievance Mechanism. No complaints on communication with neighbouring landowners and residents is submitted
– 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 and monthly during the construction phase	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 would reduce the risk to local farmers.	Not Applicable - no workers, other than security is proposed to stay on-site overnight.					

5.33 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: Hazardous substances and 5.18: Workshop, equipment maintenance and storage;	Contractor	Regular emptying of the bunds must be undertaken. This must be undertaken as per the requirements listed in sections 5.17 and 5.18	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Bunds are emptied as per the requirements listed under sections 5.17 and 5.18
– Hazardous storage areas must be well ventilated;	Contractor	Install appropriate ventilation in all hazardous storage areas	During the construction phase	ECO	Prior to site closure for more than 05 days	Effective ventilation is installed in hazardous storage areas
– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service;	Contractor / cEO	Ensure fire extinguishers are serviced, as required and are easily accessible with appropriate signage indicating location. Ensure service records	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Signage placed indicating location of fire extinguishers and service records

		are kept up to date and filed				
– Emergency and contact details displayed must be displayed;	Contractor / cEO	Place emergency and contact details which are readily available and easily accessible	During the Construction Phase	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 in consultation with the ECO	Hold a workshop with all security personnel to provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel	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	Regular checks of night hazards must be undertaken	During the Construction Phase	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.;	cEO / Contractor in consultation with the ECO	Identify any potential fire hazards and notify the relevant local authority	During the Construction Phase	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	Ensure structures vulnerable to wind is secure prior to site closure	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Structures vulnerable to wind is secured prior to site closure
– Wind and dust mitigation must be implemented;	Contractor	Implement wind and dust mitigation prior to site closure	During the Construction Phase	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	Ensure cement and material stores are secured prior to site closure	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Cement and material stores are secured prior to site closure
– Toilets must have been emptied and secured;	Contractor	Ensure toilets are emptied and secured prior to site closure	During the Construction Phase	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	Ensure refuse bins are emptied and secured prior to site closure	During the Construction Phase	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	Ensure drip trays are emptied and secured prior to site closure	During the Construction Phase	ECO	Prior to site closure for more than 05 days	Drip trays are emptied and secured prior to site closure

5.34 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment;	Contractor	Appropriately store old equipment in a manner which prevents pollution to the environment. This could include the construction of bunded areas	Decommissioning	Eco	Monthly	Photographic record of appropriate storage of old equipment
– Oil containing equipment must be stored to prevent leaking or be stored on drip trays;	Contractor	Appropriately store equipment containing oil through the use of drip trays or other suitable methods	Decommissioning	Eco	Monthly	Photographic record of appropriate storage of equipment containing oil
– All scrap steel must be stacked neatly and any disused and broken insulators must be stored in containers;	Contractor	Ensure all scrap steel is stacked neatly and store disused and broken insulators in appropriate containers	Decommissioning	Eco	Monthly	Photographic record of stacked scrap steel and containers containing broken and disused insulators
– Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution	Contractor	Develop and implement a procedure for	Decommissioning	Eco	Monthly	Proof from contractor that dismantling and

causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment;		the dismantling and transportation of equipment containing pollution causing substances which prevents spillage and pollution of the environment				transportation of equipment containing pollution causing substances has been undertaken in an appropriate manner
– The Contractor must also be equipped to contain and clean up any pollution causing spills; and	Contractor	Ensure sufficient spill kits are available for the clean up of pollution causing spills	Decommissioning	Eco	Monthly	Sufficient spill kits are available on site
– Disposal of unusable material must be at a licensed waste disposal site.	Contractor	Make use of a licensed waste disposal site	Decommissioning	Eco	Monthly	Certificates obtained for the disposal at a licensed waste disposal site

5.35 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 of to a registered waste site;	Contractor	Develop and implement a rehabilitation plan for the rehabilitation of all disturbed areas. Dispose of all spoil and waste at a licensed waste disposal facility	Pre-construction & Rehabilitation	ECO	Weekly	Rehabilitation of the disturbed areas is undertaken as per the rehabilitation plan. All 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 the 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 the 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 of 1:4 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;	Not applicable					

– Rehabilitation of access roads inside of farmland;	Not applicable					
– Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition;	Contractor	Make use of indigenous species for rehabilitation	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 requirements listed under section 5.24	Rehabilitation	ECO	Weekly	Stockpiled topsoil is used as per the requirements 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 placement area or 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	Plan the timeframe for rehabilitation in order to undertake vegetation planting during the optimal time	Rehabilitation	ECO	At the start of rehabilitation to confirm the correct timeframe	Rehabilitation is undertaken during the optimal time

		for vegetation establishment				
– Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled;	Contractor	All disturbed slope areas must be stabilised	Rehabilitation	ECO	Weekly	Disturbed slopes are stabilised sufficiently
– 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	Stabilise slopes as per the design specifications	Pre-construction & Rehabilitation	ECO	Weekly	Slopes are stabilised as per the 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 of spoil used for landscaping purposes as well as feedback from the 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; e) The final product must not cause an ecological imbalance in the area	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

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:

Applicant Name	**South Africa Mainstream Renewable Power Developments (Pty) Ltd**
Contact Person	Eugene Marais
Physical Address	4th Floor Mariendahl House, Newlands on Main, Corner Main and Campground Road, Claremont, Cape Town, 7708
Postal Address	PO Box 45063, Claremont, 7735
Telephone	021 657 4045
Fax	N/A
Cell	(073) 871 5781
Email Address	Eugene.Marais@mainstreamrp.com

7.1.2. Details and Expertise of Environmental Assessment Practitioner (EAP)

EAP Name	Liandra Scott Shaw SLR Consulting South Africa (Pty) Ltd
EAP Qualifications	(Curriculum Vitae included):
Professional Affiliation/Registration	(Curriculum Vitae included):
Telephone	+27 11 467 0945
Fax	n/a
Email Address	lscottshaw@slrconsulting.com

Refer to **Appendix A** of the EMPr for the detailed experience of the EAP and the Project Team.

7.1.3. Project Details

Project Name:

Proposed construction and operation of the 132kV/400kV On-Site Main Transmission Substation (MTS) and associated infrastructure located near Dealesville in the Tokologo Local Municipality, Lejweleputswa District in the Free State Province.

7.1.4. Project Description

South Africa Mainstream Renewable Power Developments (Pty) Ltd ('Mainstream') is proposing the development of (1) Main Transmission Substation (MTS) and three (3) powerlines (namely 1 x 132kV powerline and 2 x 400kV powerlines), Li-Ion Battery Energy Storage System, the associated electrical infrastructure, (the 'proposed development') that will connect to the authorised Solar Energy Facilities i.e. Kentani, Klipfontein, Klipfontein 2, Leliehoek, Sonoblomo, Braklaagte, Boschrand 2, Meeding, Irene and Braambosch, collectively known as the Kentani Cluster located near the town of Dealesville, Tokologo Local Municipality (Lejweleputswa District) in the Free State Province. The proposed development will also involve the re-routing of eight (8) 132kV powerlines within the grid connection corridor which has been authorised as part of the Kentani Cluster, making provision for this routing in the new proposed MTS (Figure 1).

It should be noted that on 28 October 2021, the Minister of Mineral Resources and Energy, Gwede Mantashe announced the Preferred Bidders of the Round 5 Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) and six (6) of the aforementioned Solar Energy Facilities received Preferred Bidder status i.e.:

- Kentani Solar PV
- Klipfontein Solar PV
- Klipfontein 2 Solar PV
- Leliehoek Solar PV
- Sonoblomo Solar PV
- Braklaagte Solar PV

These Solar Energy Facilities have now become Strategic Infrastructure Projects i.e. SIPs 8 and 10. SIPs 8 and 10 target the development of green energy in support of the South African economy and the provision of electricity transmission and distribution respectively.

- SIP 8 supports sustainable green energy initiatives on a national scale through a diverse range of clean energy options as envisaged in the Integrated Resource Plan (IRP2010) and support bio-fuel production facilities.
- SIP 10 Expand the transmission and distribution network to address historical imbalances, provide access to electricity for all and support economic development. Align the 10-year transmission plan, the services backlog, the national broadband roll-out and the freight rail line development to leverage off regulatory approvals, supply chain and project development capacity

The Kentani Cluster consists of eleven (11) solar PV projects and associated electrical infrastructure (including a powerline), each of which received their own Environmental Authorisation (EA) in 2016 from the Department of Environmental Affairs (DEA) [now referred to

as the Department of Forestry, Fisheries and the Environment (DFFE)]. The proposed MTS and associated infrastructure [i.e., eleven (11) powerlines] will service eleven (11) of Mainstream's solar PV projects authorised as part of the Kentani Cluster.

It should be noted that the proposed MTS and associated infrastructure will be located within the authorised Klipfontein PV facility (14/12/16/3/3/2/722), which is proposed on the Remaining Extent of the Farm Klipfontein No. 305 (SG Code: F00400000000030500000). Of the eleven (11) powerlines, eight (8) are 132kV powerlines which are located within the authorised corridor, and which have been included as part of the authorised solar PV developments. The remaining powerlines [i.e., two (2) 400kV and one (1) 132kV powerlines] fall outside of the authorised corridor and therefore will be assessed as part of the Basic Assessment (BA) process for the MTS (i.e., this application).

Considering the above, it is important to note that the location of the proposed MTS as well as the corridors being proposed for the powerlines have previously been assessed as part of the development footprint for the Kentani Cluster of solar PV developments, each of which received their own EA in 2016 [1].

Moreover, the proposed MTS and powerlines are located within the Kimberly Renewable Energy Development Zone and Central Strategic Transmission Corridor, as defined and in terms of the procedures laid out in Government Notices No. 113 and No. 145 which were formally gazetted on 16 February 2018 and 26 February 2021 respectively. The proposed MTS will occupy a footprint of approximately 64 hectares (ha) (i.e., 800m x 800m) and the proposed Lithium-Ion Battery Energy Storage System (BESS) with occupy up to 4 ha. The area occupied by the proposed power lines is unknown at this stage. In addition, the proposed MTS will have a capacity of 132/400 kilovolt (kV), while the associated powerlines will have capacities of up to 400kV, 132kV and 33kV respectively. The powerlines and BESS associated with the MTS and which are being proposed as part of this application and BA process are as follows:

1. Two (2) 400kV overhead powerlines (approx. 800m in length) are being proposed and will connect the proposed MTS to the existing Eskom 400kV powerline, located approximately 1km west of the proposed MTS site, via a Loop-In-Loop Out (LILO) connection; and
2. One (1) 132kV powerline (approx. 4km in length) is being proposed and will connect the proposed MTS to the authorised Kentani on-site substation (14/12/16/3/3/2/724), located approx. 4km north-west of the proposed MTS site.
3. Li-Ion Battery Energy Storage System (BESS) up to 4 ha in extent within the assessed site footprint

Additionally, there is one (1) 33kv powerline (approx. 2km in length) being proposed and will connect the authorised 75MW Sonoblomo PV facility (14/12/16/3/3/2/723), which is located approximately 5km north of the proposed MTS site, to the authorised Kentani on-site substation (14/12/16/3/3/2/724) (approx. 4km north-west of proposed MTS site). This powerline is not subject to the Basic Assessment study as it does trigger the need for an Application for

[1] It should be noted that the validity period of the EA issued for the Klipfontein Solar PV Energy Facility in 2016 was extended by the Holder of the EA in April 2021 (14/12/16/3/3/2/722/AM1). The EA issued in 2016 is now valid until 06 June 2026 (i.e., EA lapses on 06 June 2026).

Environmental Authorisation, however, the powerline has been considered by the specialist team.
A road in the servitude under the proposed powerlines as well as an access road (approx. 4-8m wide) to the R64 provincial route will also be required.

As part of the BA process, powerline corridors with widths of 300m (150m on either side of centre line) are being proposed and assessed for the 400kV and 132kV powerlines. This is to allow flexibility when routing the powerlines within the authorised corridor (should the EA be granted). No corridor is however being considered for the proposed 33kV powerline.

This Generic EMPr is applicable to the proposed of the 132kV/400kV On-Site Main Transmission Substation (MTS) and associated infrastructure located near Dealesville in the Tokologo Local Municipality, Lejweleputswa District in the Free State Province

7.1.5 Project Location

Location details of the proposed MTS development:

Province	Free State
District Municipality	Lejweleputswa District Municipality
Local Municipality	Tokologo Local Municipality
Ward number(s)	Ward 1
Nearest town(s)	Dealesville
Affected Properties: Farm name(s), number(s) and portion numbers	» Remaining Extent of the farm Klipfontein 305
SG 21 Digit Code (s)	» Remaining Extent of the Farm Klipfontein No. 305 (F00400000000030500000); »
Current zoning and land use	Agriculture

7.1.6. Preliminary Technical Specifications of the proposed MTS development

Infrastructure	Footprint, dimensions and technical details
Onsite Main Transmission Substation (MTS)	• One (1) new MTS with capacity of 132kV/400kV • Total footprint of up to approx. 64ha (i.e., 800m x 800m) • Will contain transformers for voltage step up from medium voltage (132kV) to high voltage (400kV) • Direct Current (DC) power from the authorised Kentani Cluster of solar PV developments (each of which received their own EA in 2016) will be converted into Alternating Current (AC) power in the inverters and the voltage will be stepped up to high voltage in the inverter transformers Will be located within authorised Klipfontein PV facility (14/12/16/3/3/2/722), which is proposed on Remaining Extent of the Farm Klipfontein No. 305
Grid Connection (Powerlines)	• Two (2) new 400kV overhead powerlines connecting MTS to existing Eskom 400kV powerline (approx. 1km west of MTS site) via LILO connection;

Infrastructure	Footprint, dimensions and technical details
	• One (1) new 132kV overhead powerline connecting MTS to authorised Kentani on-site substation (14/12/16/3/3/2/724) (approx. 4km north-west of MTS site); • One (1) new 33kV overhead powerline connecting authorised 75MW Sonoblomo PV facility (14/12/16/3/3/2/723) (approx. 5km north of MTS site) to authorised Kentani on-site substation (14/12/16/3/3/2/724) (approx. 4km north-west of MTS site) • Length of 400kV powerlines = approx. 2km • Length of 132kV powerline = approx. 4,5-5km • Length of 33kV powerline = approx. 2km • Area occupied by powerlines unknown at this stage • Powerline corridors with widths of 300m (150m on either side of centre line) being proposed and assessed for 400kV and 132kV powerlines to allow flexibility when routing powerlines within authorised corridor (should EA be granted) • No corridor being considered for 33kV powerline • This will allow for flexibility when routing powerline within the authorised corridorEight (8) 132kV powerlines within grid connection corridor authorised as part of Kentani Cluster will also be re-routed and provision will be made for this routing in new proposed MTS
BESS	• Li-Ion Battery Energy Storage System up to 4 ha in extent within the assessed site foot print
Roads	• One (1) new road in servitude under proposed powerlines • One (1) new access to the R64 provincial route Widths of up to approx. 4-8m

It should be noted that Eskom's requirements for work in or near Eskom servitudes should be adhered to.

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. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

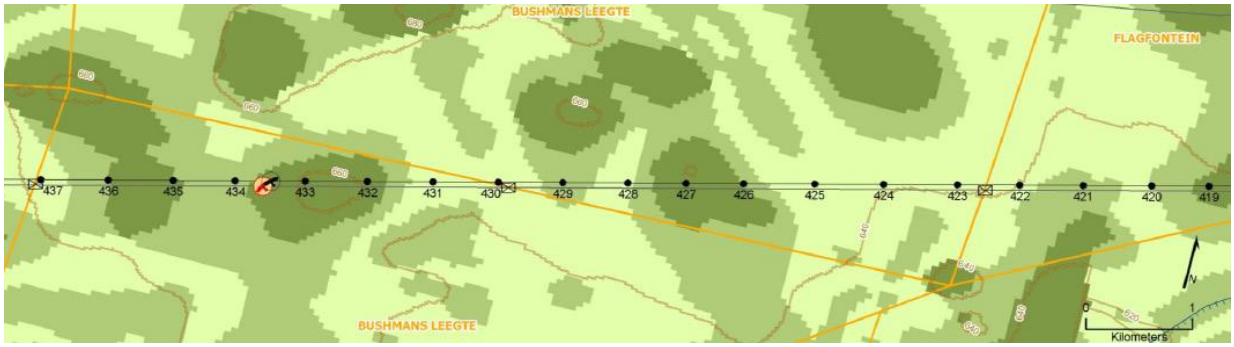

Figure 0-1: Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile

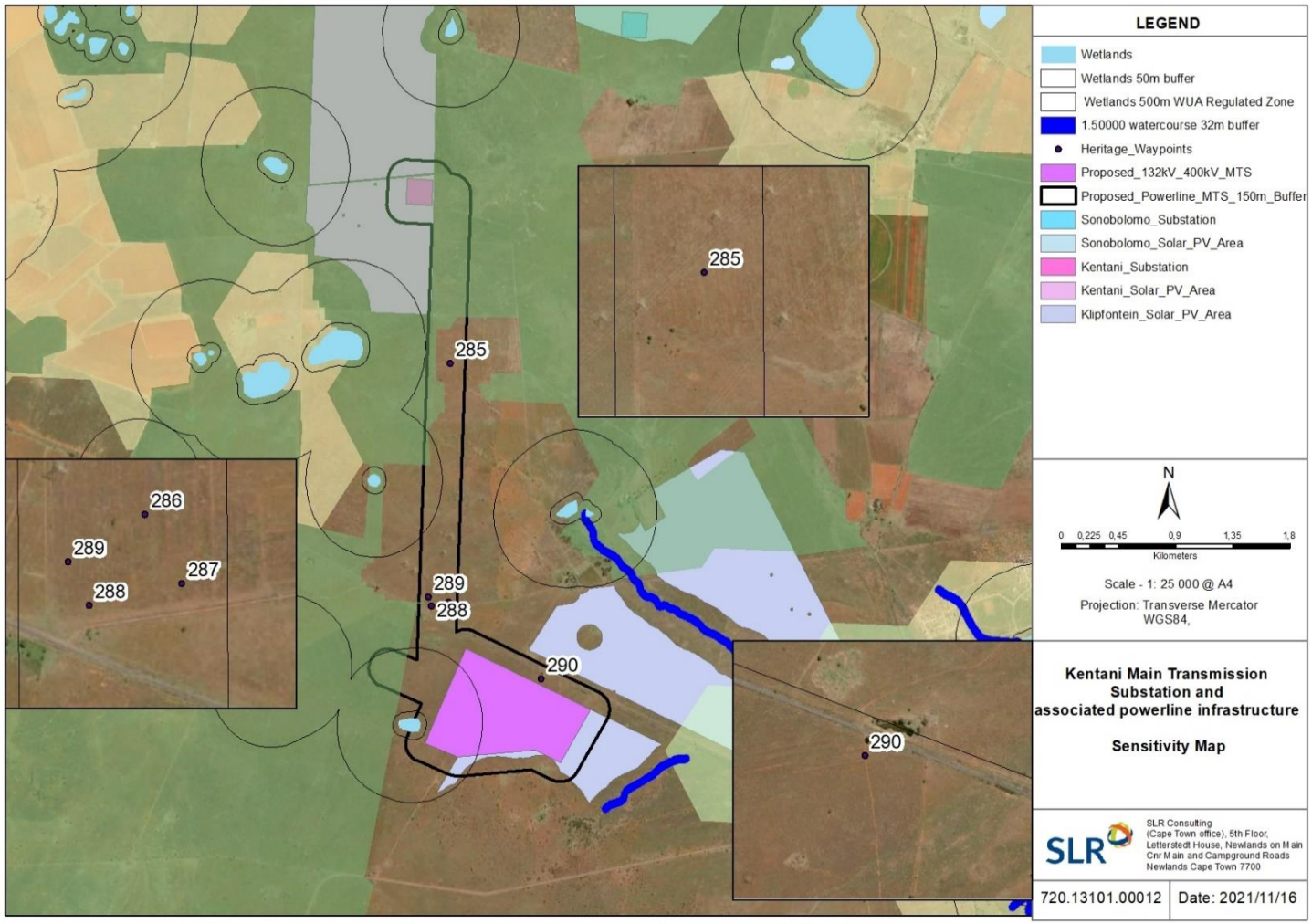

Figure 2: Environmental sensitivity map as per the Basic Assessment process undertaken for the proposed MTS and associated grid infrastructure Facilities

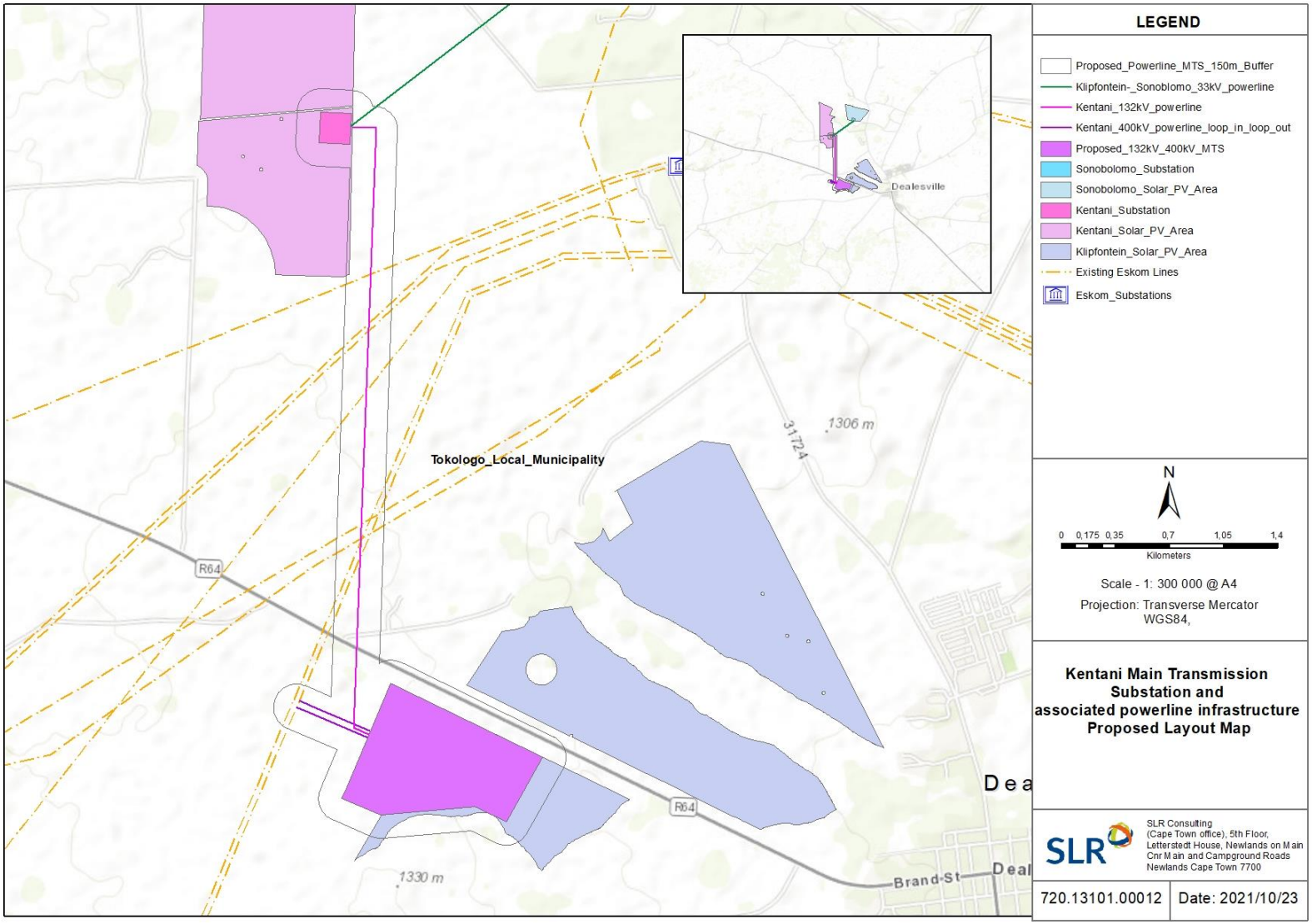

Figure 3: Layout map for the proposed MTS and associated grid infrastructure Facilities

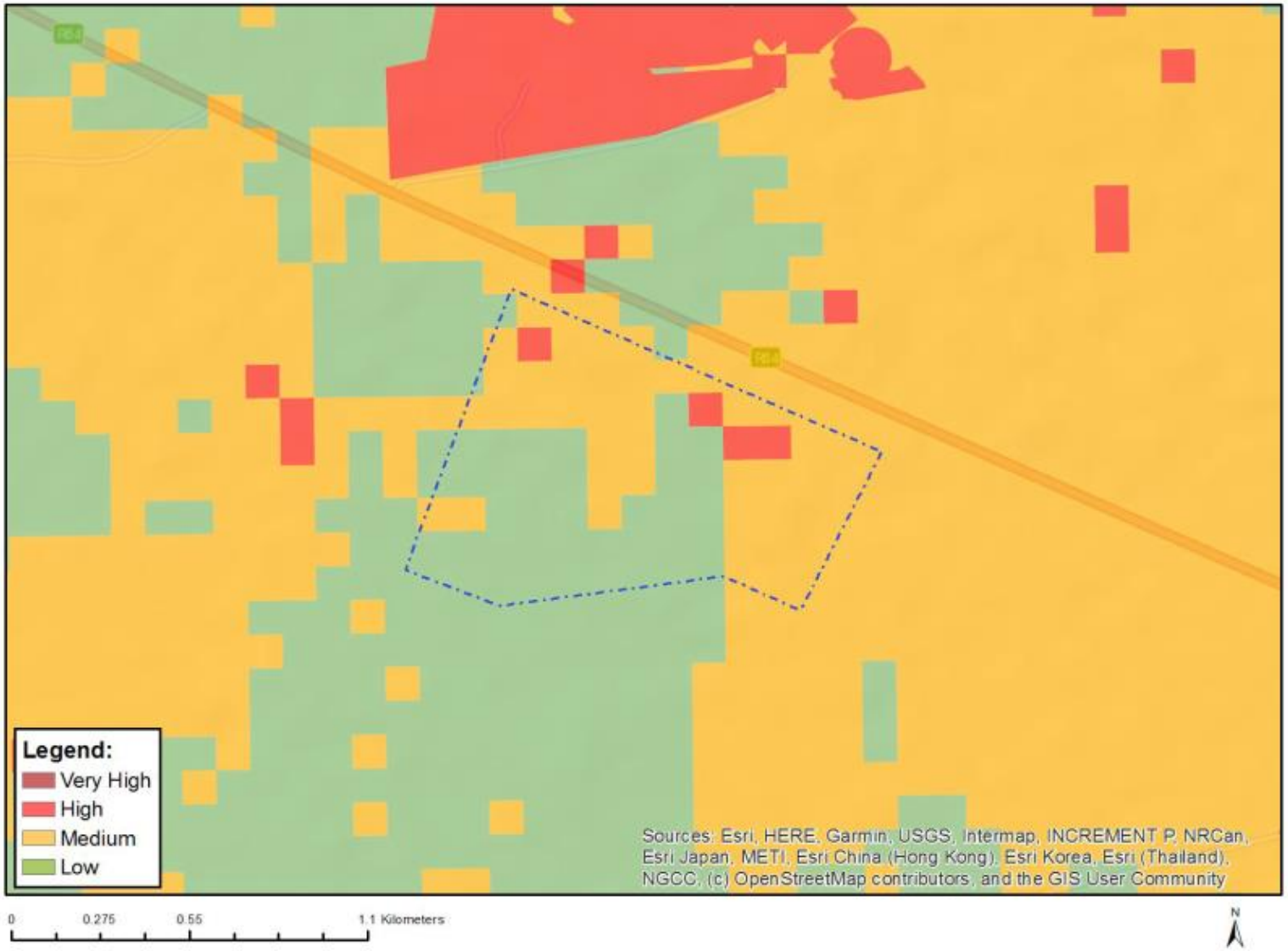

Figure 4: Map of Relative Agriculture Theme Sensitivity

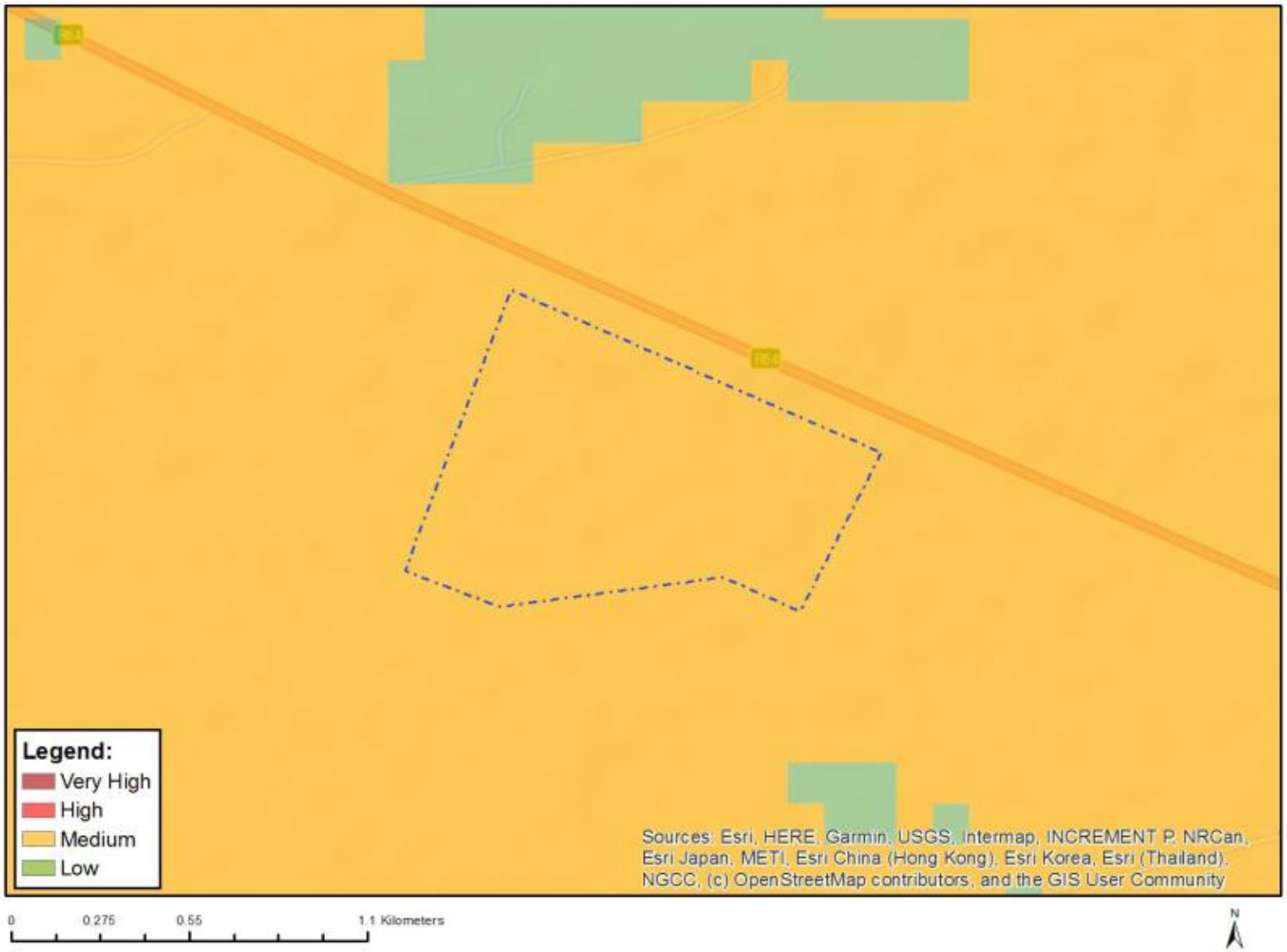

Figure 5: Map of Animal Species Theme Sensitivity

Figure 6: Map of Aquatic Biodiversity Theme Sensitivity

Figure 7: Map of Archaeological and Cultural Heritage Species Theme Sensitivity

Figure 8: Map of Relative Palaeontology Theme Sensitivity

Figure 9: Map of Relative Plant Species Theme Sensitivity

Figure 10: Map of Relative Terrestrial Biodiversity Theme Sensitivity

7.1 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 day 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:

This declaration will be signed by the proponent/applicant/holder of the EA once the contractor is appointed and has provided inputs to this Generic EMPr as per the requirements of this template.

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

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

PART C

8. SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions, not included in the pre-approved generic EMPr template, to manage impacts, those impact management outcomes and impact management 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.

6.2 *Site Specific Mitigation*[2]

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Aquatic	Reduce loss of aquatic species including any Species of Special Concern- Potential loss of protected or listed aquatic species	PM/ ECO / ESO	• All alien plant re-growth, which is currently low within the greater region must be monitored monthly and should it occur, these plants must be eradicated within the project footprints and especially in areas near the proposed crossings.	**Construction Decommissioning**	ECO / ESO	• Weekly for protected plants • Monthly for alien plants	• Records of monitoring and adherence to implementations methods and mitigation measures. • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
	Avoid /Limit damage or loss of riparian systems and disturbance of waterbodies in the construction / decommissioning phase	PM/ ECO / ESO	• The current layout must be selected, to ensure all the observed aquatic systems will be avoided, thus avoiding this impact • Sensitive habitats in close proximity to the development footprint must be avoided or demarcated as No Go area (i.e., Wetlands). • No activities may take place, without the necessary authorisation from this Department, within a horizontal distance of 100 m from any watercourse or estuary or within a 500 m radius from a delineated boundary of any a wetland or pan • All the conditions of the National Water Act (Act 36 of 1998) (NWA) must be complied with		ECO / ESO	• Monthly and as and when required	• Storm Water Management Plan • Records of monitoring and adherence to implementations methods and mitigation measures. • Rehabilitation Plan • Erosion Management Plan • Necessary authorisation(s) from DWS in place and kept on record

[2] It should be noted that a number of mitigation measures / recommendations have been provided by Organs of State (OoS) / Key Stakeholders following the completion of the 30-day review and comment period for the Draft BAR, which have been incorporated into this EMPr (this table specifically). These mitigation measures / recommendations have been underlined in this table.

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
			• Registration of water uses under Section 21 of the NWA is compulsory[3]. • In terms of Section 4(1) of the NWA, a person may use water from a water resource for purposes such as reasonable domestic use, domestic gardening, animal watering, firefighting and recreational use, as set out in Schedule 1. • Suitable stormwater management systems must be installed along roads and other areas and monitored during the first few months of use. • Any erosion / sedimentation must be resolved through whatever additional interventions maybe necessary (i.e., extension, energy dissipaters, spreaders, etc). This will the avoid any secondary impacts that could affect downstream areas.				
	Avoid Water quality changes (increase in sediment, organic loads, chemicals or eutrophication	PM/ ECO / ESO	• All liquid chemicals including fuels and oil, must be stored in with secondary containment (bunds or containers or berms) that can contain a leak or spill. Such facilities must be inspected routinely and must have the suitable PPE and		ECO / ESO	• Daily to ensure plant is in working order (minimise leaks), spills are prevented and if they do occur a quickly rectified.	• Storm Water Management Plan • Records of monitoring and adherence to implementations methods and mitigation measures. • Spill Management Plan • Erosion Management Plan

[3] In terms of Section 22 of the NWA a person may only use water without a license:

- If that water use is permissible under Schedule 1.
- If that water use is permissible as a continuation of an existing lawful use.
- If that water use is permissible in terms of a General Authorisation issued under Section 39 of the NWA.

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
			spill kits needed to contain likely worst-case scenario leak or spill in that facility, safely. • The storage of material, chemicals, fuels, etc. must not pose a risk to the surrounding environment and this includes surface and groundwater resources. Temporary bunds must also be constructed around chemical or fuel storage areas to contain possible spillages. Such storage areas must be located outside the 1: 100-year floodline of a river and must be fenced to prevent unauthorised access into the area. The maintenance of vehicles and equipment used for any purpose during the prospecting activity will take place only in the maintenance yard area. • Washing and cleaning of equipment must be done in designated wash bays, where rinse water is contained in evaporation/sedimentation ponds (to capture oils, grease cement and sediment). • Mechanical plant and bowsers must not be refuelled or serviced within 100m of a river channel. • All construction camps, lay down areas, wash bays, batching plants or areas and any stores should be more than 50 m from any demarcated water courses.				

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
			• Littering and contamination associated with construction activity must be avoided through effective construction camp management • Zero discharge of contaminated surface water is allowed • The Plant should be sited, designed and managed so that the quality of surface and groundwater in the vicinity are not degraded by runoff, leaching or seepage from the site or waste utilization areas • No stockpiling should take place within or near a water course • All stockpiles must be protected and located in flat areas where run-off will be minimised and sediment recoverable • Monitoring must take place on a continuous basis to ensure the relevant mitigation measures / recommendations are adhered to				
	Hydrological regime or Hydroperiod changes (Quantity changes such as abstraction or diversion)	PM/ ECO / ESO	• A stormwater management plan must be developed in the preconstruction phase, detailing the stormwater structures and management interventions that must be installed to manage the increase of surface water flows directly into any natural systems. • Effective stormwater management must include effective stabilisation (gabions and Reno mattresses) of exposed soil	**Operation**	ECO / ESO	• Annual Inspection of stormwater control systems to ensure these are functional	• Storm Water Management Plan • Records of monitoring and adherence to implementations methods and mitigation measures.

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
			• The applicant must ensure the storm water run-off has to be directed away from the site to ensure the separation of clean and dirty water				
Terrestrial Ecology and Plant Assessment	Loss of natural vegetation	PM/ ECO / ESO	• Restrict activities to footprint areas, use existing maintenance and access roads, rehabilitate disturbed areas after construction, control alien invasive plant species. • Sensitive habitats in close proximity to the development footprint must be avoided or demarcated as No Go areas. • Pre-construction walk through - The presence of any species of conservation concern within the development area as well as along the grid connection should be checked • A Pre-construction walk-through of the approved development footprint must be conducted to ensure that sensitive habitats and species are avoided where possible.	**Construction Decommissioning**	ECO / ESO	• Annual monitoring for 3 years after construction to evaluate vegetation cover, species composition.	• Records of monitoring and adherence to implementations methods and mitigation measures. • Records of walkthrough reports and compliance with various plans and reports as per ECO reports • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
	Invasion by alien invasive plant species	PM/ ECO / ESO	• Compile and implement an alien invasive control plan, monitor degree of invasion as well as outcome and effectiveness of control measures. • Erosion and Alien Invasive Plant Species Management Plan and Rehabilitation Plan must be developed to mitigate on habitat	**Operation**	ECO / ESO	• Annual monitoring for 3 years after construction to evaluate vegetation cover, species composition.	• Records of monitoring and adherence to implementations methods and mitigation measures. • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
			degradation due to erosion and alien plant invasion.				
	Impacts on TOPs, Red data listed or provincially protected species	PM/ ECO / ESO / Ecologist	• Permits from relevant authorities must be obtained for the removal or disturbance of any TOPs, Red data listed or provincially protected species	**Construction Operation Decommissioning**	ECO / ESO / Ecologist	Ongoing for duration of construction, operation and decommission	• Records of monitoring and adherence to implementations methods and mitigation measures. • Proof of submission of permit applications. • Permits kept on file (if required)
Avifauna	Habitat destruction during construction & maintenance	PM/ ECO / ESO	• A pre-construction avifaunal walk down should be conducted to: • Confirm final layout and identify any sensitivities that may arise between the conclusion of the BA process and the construction phase. • Identify any sensitive species breeding on site that may arise between the conclusion of the BA process and the construction phase. • All construction activities should be strictly managed according to generally accepted environmental best practice standards, so as to avoid any unnecessary impact on the receiving environment. • All temporary disturbed areas should be rehabilitated according to the site's rehabilitation plan, following construction. • A pre-construction avifaunal walk down should be conducted to provide final confirmation of the	**Construction**	ECO / ESO	• Monthly The new power line should be patrolled during operation by ESKOM annually to measure any impacts on birds (through detecting collision fatalities) and to monitor the durability of the line marking devices Where multiple devices on a span have failed they should be replaced immediately. Data should be submitted to the Eskom –EWT Strategic Partnership where it will be curated and publicly accessible.	• Records of walkthrough reports and compliance with various plans and reports as per ECO reports • Rehabilitation Plan

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
			sections of power line requiring bird collision mitigation.				
	Impacts to the cultural landscape	PM/ ECO / ESO	• Minimise disturbance footprint. • Rehabilitate all areas not required during operation. • Minimise size of access track.	**Construction** **Operation** **Decommissioning**	ECO / ESO	On-going	• Records of monitoring and adherence to implementations methods and mitigation measures. • Alien Management Plan • Rehabilitation Plan • Ecological Management Plan
Heritage / Archaeology / Palaeontology	Impacts to archaeological sites or remains, fossils or other categories of heritage resources	PM/ ECO / ESO	• If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Sityhilelo Ngcatsha/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule. • If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological	**Construction** **Operation** **Decommissioning**	ECO / ESO	On-going	• Records of monitoring and adherence to implementations methods and mitigation measures. • Proof of correspondence with SAHRA APM Unit, • Proof of Phase 2 rescue operation (subject to permits issued by SAHRA), if required / applicable.

Speciali	Impact Management Action	Implementation			Monitoring		
		Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
			significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA.				
	Impacts to unmarked human burials	PM/ ECO / ESO	• If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule.	**Construction Operation Decommissioning**	ECO / ESO	On-going	• Records of monitoring and adherence to implementations methods and mitigation measures. • Proof of correspondence with the SAHRA Burial Grounds and Graves (BGG) Unit.

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: CURRICULA VITAE

CURRICULUM VITAE

LIANDRA SCOTT-SHAW

SENIOR ENVIRONMENTAL CONSULTANT

Environmental Management, Planning and Approvals, South Africa

QUALIFICATIONS

Pr.Sci.Nat	2017	Professional Natural Scientist (Ecological Science), South African Council for Natural Scientific Professions
BSc Hons.	2009	BSc Honours (Ecological Science), University of KwaZulu Natal
BSc	2008	BSc (Biological Science), University of KwaZulu Natal

EXPERTISE

- Environmental Impact Assessment
- Environmental licensing
- Environmental Compliance monitoring and auditing
- Vegetation Impacts Assessment and permitting
- Diatom Biomonitoring

Liandra joined SLR in March 2021 in her capacity as Senior Environmental Consultant and has over 8 years' experience as an Environmental Assessment Practitioner within the environmental consulting field. She has degrees in Biological and Ecological Science and has expertise in a wide range of environmental disciplines, including Environmental Impact Assessments, Environmental Management Programmes, Environmental Compliance Monitoring & Auditing and Vegetation Assessments and Diatom Biomonitoring.

She has been responsible for the management of a wide range of projects, including environmental authorisations, compliance monitoring and auditing, vegetation assessments and permitting and diatom biomonitoring.

Over the last few years Liandra's focus has been in the renewable energy sector. Specifically involved with Environmental Impact Assessments and specialist management for the Risk Mitigation Independent Power Producer Procurement and Renewable Energy Independent Power Producer Procurement Programmes (RMIPPPP and REIPPPP).

PROJECTS

A sample of Liandra's recent project experience, is provided below.

RENEWABLE ENERGY

Oya Energy Hybrid Facility EIA and Grid Connection BA (2020-2021)	Completed the Environmental Impact Assessment, Basic Assessment, and associated Amendment Processes for the 128MW facility, which included powerlines, wind energy facility (WEF), solar photovoltaic (PV), Battery Energy Storage System (BESS) and fuel-based generators (FBG). Liandra project managed the processes and assisted the client in compiling and submitting the bid for RMIPPPP. The project is a preferred bidder for the RMIPPPP
Kudusberg Wind Energy Facility (WEF) Amendment (2020-2021)	Completed the Amendment Process for getting the facility bid ready, this included finalizing layouts and EMPrs.
Droogfontein 3 PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.

Mierdam PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Dwarsrug WEF BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Platsjambok East PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Platsjambok West PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Loeriesfontein 3 PV BESS BA (2020)	Completed the Basic Assessment for Battery Energy Storage System (BESS). Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Grid connection for between the Dwarsrug WEF to Loeriesfontein PV	Completed the Basic Assessment for the Grid connection. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Tooverberg Wind Energy Facility (WEF) EIA and Grid Connection BA (2018-2019)	Assisted in completing the EIA and BA Processes for the facility. Liandra undertook technical and report writing and client liaison when the original project manager left.
Rondekop Wind Energy Facility (WEF) EIA (2018-2019)	Completed the EIA Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Umsobomvu PV Project EIAs (x3) and Grid Connections Bas (x3) near Noupoort and Middelburg, Eastern and Northern Cape Provinces (2018-2020)	Completed the Amendment Process for the facilities. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the proposed development of the Hartebeest Leegte Wind Farm near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the development of the Graskoppies Wind Farm and grid near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.

Amendments for the proposed development of the Ithemba Wind Farm near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the proposed development of the Xha! Boom Wind Farm near Loeriesfontein, Northern Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendment for the Proposed Beaufort West Wind Farm, Western Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendment for the Proposed Trakas Wind Farm, Western Cape Province (2019)	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the Proposed Dwarsrug Wind Farm near Loeriesfontein, Northern Cape Province	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Amendments for the Grid Connections for Graskoppies, Haratebeest Leegte, Itemba and !Xha Boom Wind Energy Facilties near Loeriesfontein, Northerrn Cape Province	Completed the Amendment Process for the facility. Liandra project managed the processes as well as undertaking technical and report writing, public participation, specialist team management.
Regulation 54 Audits (2019)	• Darling Wind Energy Facility, Western Cape Province • Great Kei Wind Energy Facility, Eastern Cape Province • Motherwell Wind Energy Facility, Eastern Cape Province • Ncora Wind Energy Facility, Eastern Cape Province • Nqamakwe Wind Energy Facility, Northern Cape Province • Peddie Wind Energy Facility, Eastern Cape Province • Ukomeleza Wind Energy Facility, Eastern Cape Province • Umsobomvu Wind Energy Facility, Northern and Eastern Cape Provinces

MEMBERSHIPS

SACNASP	Registered with South African Council for Natural Scientific Professions as a Professional Natural Scientist (Pr.Sci.Nat) in Environmental Science (117442)
IAIAsa	Member of the International Association of Impact Assessors (3624)

PUBLICATIONS

	Lang P, Taylor J, Bertolli L, Lowe S, Dallas H, Kennedy MP, Gibbins C, Sichingabula H, Saili, Day J, Willems F, Briggs JA and Murphy KJ 2013. Proposed procedure for the sampling, preparation and analysis of benthic diatoms from Zambian rivers: a bioassessment and decision support tool applicable to freshwater ecoregions in tropical southern Africa. Africa, Caribbean, Pacific-European Union Project Report.
	Martins S, Kennedy M, Lowe S, Lang P, Briggs J, Dallas H, Taylor J, Bertolli L, Gibbins C, Soulsby C, Day J, Sichingabula H, Saili H, Kapungwe E, Willems F, Mbulwe F, Murphy K. 2013. SAFRASS Methodology Manual.
	Shrader AM, Bell C, Bertolli L and Ward D 2012. Forest or the trees: at what scale do elephants make foraging decisions? Acta Oecologica 42: 3-10.
	Lang P, Taylor J, Bertolli L, 2012. River diatom biodiversity assessments in Zambian rivers: a SAFRASS conservation perspective. European Congress of Conservation Biology, Glasgow.
	Martins S, Kennedy M, Lowe S, Lang P, Briggs J, Dallas H, Taylor J, Bertolli L, Gibbins C, Soulsby C, Day J, Sichingabula H, Saili H, Kapungwe E, Willems F, Mbulwe F, Murphy K. 2012. SAFRASS Photographic guide to the Aquatic Macroinvertebrates of Zambia. European Union Project Report

APPENDIX 3: CHANCE FIND FOSSIL PROCEDURE

1 CHANCE FIND PROTOCOL

The following procedure will only be followed if fossils are uncovered during excavation.

1.1 LEGISLATION

Cultural Heritage in South Africa (includes all heritage resources) is protected by the **National Heritage Resources Act (Act No 25 of 1999) (NHRA).** According to Section 3 of the Act, all Heritage resources include **"all objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens**".

Palaeontological heritage is unique and non-renewable and is protected by the NHRA and are the property of the State. It is thus the responsibility of the State to manage and conserve fossils on behalf of the citizens of South Africa. Palaeontological resources may not be excavated, broken, moved, or destroyed by any development without prior assessment and without a permit from the relevant heritage resources authority as per section 35 of the NHRA.

1.2 BACKGROUND

A fossil is the naturally preserved remains (or traces thereof) of plants or animals embedded in rock. These organisms lived millions of years ago. Fossils are extremely rare and irreplaceable. By studying fossils, it is possible to determine environmental conditions that existed in a specific geographical area, millions of years ago.

1.3 INTRODUCTION

This informational document is intended for workmen and foremen on construction sites. It describes the actions to be taken when construction activities accidentally uncovers fossil material.

It is the responsibility of the Environmental Site Officer (ESO) or site manager of the project to train the workmen and foremen in the procedure to follow when a fossil is accidentally uncovered. In the absence of the ESO, a member of the staff must be appointed to be responsible for the proper implementation of the chance find protocol as not to compromise the conservation of fossil material.

1.4 CHANCE FIND PROCEDURE

- If a chance find is made the person responsible for the find must immediately **stop working** and all work that could impact that finding must cease in the immediate vicinity of the find.

- The person who made the find must immediately **report** the find to his/her direct supervisor which in turn must report the find to his/her manager and the ESO or site manager. The ESO or site manager must report the find to the relevant Heritage Agency (South African Heritage Research Agency, SAHRA). (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Tel: 021 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za). The information to the Heritage Agency must include photographs of the find, from various angles, as well as the GPS co-ordinates.
- A preliminary report must be submitted to the Heritage Agency within **24 hours** of the find and must include the following: 1) date of the find; 2) a description of the discovery and a 3) description of the fossil and its context (depth and position of the fossil), GPS co-ordinates.
- Photographs (the more the better) of the discovery must be of high quality, in focus, accompanied by a scale. It is also important to have photographs of the vertical section (side) where the fossil was found.

Upon receipt of the preliminary report, the Heritage Agency will inform the ESO (or site manager) whether a rescue excavation or rescue collection by a palaeontologist is necessary.

- The site must be secured to protect it from any further damage. **No attempt** should be made to remove material from their environment. The exposed finds must be stabilized and covered by a plastic sheet or sand bags. The Heritage agency will also be able to advise on the most suitable method of protection of the find.
- If the fossil cannot be stabilized the fossil may be collected with extreme care by the ESO. Fossils finds must be stored in tissue paper and in an appropriate box while due care must be taken to remove all fossil material from the rescue site.
- Once the Heritage Agency has issued the written authorization, the developer may continue with the development on the affected area.