# KOTULO TSATSI ENERGY PV3 AND ASSOCIATED INFRASTRUCTURE, NORTHERN CAPE PROVINCE

## Environmental Management Programme for the on-site substation

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savannah environmental

t +27 (0)11 656 3237 f +27 (0)86 684 0547
e info@savannahsa.com w www.savannahsa.com

# 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.<br><br>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.<br><br>Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column.<br><br>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.<br><br>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 |

| Part | Section | Heading | Content |
|---|---|---|---|
| | | | also be made available on such publicly accessible website. |
| | 2 | Site specific information | Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management 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.<br><br>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)<br>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 |

| Part | Section | Heading | Content |
|---|---|---|---|
| | | | information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding.<br>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><br>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.<br><br><u>Responsibilities</u><br>- Be fully conversant with the conditions of the EA;<br>- Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s);<br>- Issuing of site instructions to the Contractor for corrective actions required;<br>- 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<br>- Ensure that periodic environmental performance audits are undertaken on the project implementation. |

| Responsible Person(s) | Role and Responsibilities |
|---|---|
| | |
| Developer Site Supervisor (DSS) | Role<br>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.<br><br>Responsibilities<br>- Ensure that all contractors identify a contractor's Environmental Officer (cEO);<br>- Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO;<br>- Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO;<br>- Issuing of site instructions to the Contractor for corrective actions required;<br>- Will issue all non-compliances to contractors; and<br>- Ratify the Monthly Environmental Report. |
| Environmental Control Officer (ECO) | Role<br>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.<br><br>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 |

| Responsible Person(s) | Role and Responsibilities |
|---|---|
| | conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.<br><br><u>Responsibilities</u><br>The responsibilities of the ECO will include the following:<br>- Be aware of the findings and conclusions of all EA related to the development;<br>- Be familiar with the recommendations and mitigation measures of this EMPr;<br>- Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them;<br>- 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;<br>- Educate the construction team about the management measures contained in the EMPr and environmental licenses;<br>- Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective;<br>- Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements;<br>- 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;<br>- Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns;<br>- Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr;<br>- Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); |

| Responsible Person(s) | Role and Responsibilities |
|---|---|
| | - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken;<br>- Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken;<br>- Assisting in the resolution of conflicts;<br>- Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor;<br>- 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;<br>- Maintenance, update and review of the EMPr;<br>- Communication of all modifications to the EMPr to the relevant stakeholders. |
| developer Environmental Officer (dEO) | <u>Role</u><br>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.<br><br><u>Responsibilities</u><br>- Be fully conversant with the EMPr;<br>- Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures;<br>- Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ;<br>- Confine the development site to the demarcated area;<br>- Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO);<br>- Assist the contractors in addressing environmental challenges on site;<br>- Assist in incident management: |

| Responsible Person(s) | Role and Responsibilities |
|---|---|
| | - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;<br>- Assist the contractor in investigating environmental incidents and compile investigation reports;<br>- Follow-up on pre-warnings, defects, non-conformance reports;<br>- Measure and communicate environmental performance to the Contractor;<br>- Conduct environmental awareness training on site together with ECO and cEO;<br>- Ensure that the necessary legal permits and / or licenses are in place and up to date;<br>- Acting as Developer's Environmental Representative on site and work together with the ECO and contractor; |
| Contractor | <u>Role</u><br>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.<br><br><u>Responsibilities</u><br>- project delivery and quality control for the development services as per appointment;<br>- 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;<br>- 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;<br>- 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) | <u>Role</u><br>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:<br><br><u>Responsibilities</u><br>- Be on site throughout the duration of the project and be dedicated to the project;<br>- Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site;<br>- Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements;<br>- Attend the Environmental Site Meeting;<br>- Undertaking corrective actions where non-compliances are registered within the stipulated timeframes;<br>- Report back formally on the completion of corrective actions;<br>- Assist the ECO in maintaining all the site documentation;<br>- Prepare the site inspection reports and corrective action reports for submission to the ECO;<br>- Assist the ECO with the preparing of the monthly report; and<br>- 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 | Prior to commencement of construction. | 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 | Prior to commencement of construction. | 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 | 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 | Prior to commencement of construction. | 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:<br>a) Safety notifications; and<br>b) No littering. | Contractor | Develop and place appropriate posters at key locations | Pre-construction Construction | ECO dEO cEO | Prior to commencement of construction. | Photographic record |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – Environmental awareness training must include as a minimum the following:<br>a) Description of significant environmental impacts, actual or potential, related to their work activities;<br>b) Mitigation measures to be implemented when carrying out specific activities;<br>c) Emergency preparedness and response procedures;<br>d) Emergency procedures;<br>e) Procedures to be followed when working near or within sensitive areas;<br>f) Wastewater management procedures;<br>g) Water usage and conservation;<br>h) Solid waste management procedures;<br>i) Sanitation procedures;<br>j) Fire prevention; and<br>k) Disease prevention. | cEO / dEO in consultation with the ECO | Develop environmental awareness training material which covers the minimum requirements | Pre-construction<br>Construction | ECO<br>dEO | Prior to the commencement of environmental training awareness. | 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<br>dEO | As and when required. | 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 | Pre-construction<br>Construction | ECO<br>dEO | Prior to the commencement of construction. | Environmental awareness training material requirements checklist |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | dangers of open 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<br>dEO | Prior to the commencement of construction. | 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.<br>Training material must by readily available to all staff | During the construction phase | ECO<br>dEO | Prior to the commencement of construction. | 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, 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<br>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 EIA process | Pre-construction<br>Construction | ECO<br>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 | Pre-construction | ECO<br>dEO | Once, prior to construction | Availability of a layout and sensitivity map indicating avoidance of sensitive areas and placement |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | identified in the EIA process | | | | within disturbed areas |
| – The camp must be fenced in accordance with *Section 5.5: Fencing and gate installation*. | DPM | Design and implementation of fencing as per the requirements of Section 5.5 of this EMPr | Pre-construction & Construction | ECO<br>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. Employees will be accommodated in the nearby towns and will commute to site on a daily basis. | | | | | |

### *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 EIA 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. | dEO / cEO in consultation with the ECO | Erect appropriate temporary barriers around | At the commencement and for the duration of the | ECO | Once, prior to construction | Access restricted areas are closed-off through |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | access restricted areas | construction phase | | | 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 monitoring and as and when required. | Photographic evidence and/or 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<br>Contractor | Develop access agreements with the affected landowners.<br>Ensure that | Pre-construction | dEO<br>ECO | Once, prior to construction | Availability of approved and signed agreement/s |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | agreements are approved and signed | | | | |
| – 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 | Monthly | 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 | Construction and Rehabilitation | ECO | Monthly | Photographic record of the closure of access roads and re-vegetation |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | and re-habilitated to the pre-disturbance state | | | | |
| – 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 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 | Monthly | 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 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 | Pre-construction | ECO | Once during the design and | Implementation of the approved layout |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | avoid vegetated areas | | | once prior to construction | |
| – 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<br>dEO | Once during the design and once 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 the existing gates to be used | Pre-construction & Construction | dEO | Once during the design and once during the construction phase. | 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. | ECO | 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 section4.9 |
| – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner. | Contractor | Ensure all relevant gates are fitted with locks and are always locked | Construction and Operation | ECO Operation and maintenance team | Monthly | 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 installed for jackal proofing | During the construction phase | cEO | Once, during the erection of the gates during the construction phase | 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** |
| – 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 landowner. | dEO/ cEO Contractor | Obtain written approval from the relevant landowner where temporary fencing is required to | During the construction phase | ECO | To be monitored as temporary fencing is required | Written approval to be provided by the dEO |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | restrict life-stock movement | | | | |
| – 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 |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | | | | | 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<br>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 boreholes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; | DPM and Contractor | Obtaining relevant registrations from DWS and installation of water meters | During Construction and operational phase | ECO | To be monitored with the installation of water meters and daily during construction and operation | Use of high quality water meters |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – The Contractor must ensure the following:<br>a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river;<br>b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and<br>c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. | Not applicable – No abstraction from a river proposed. Water tankers will bring water to site. | | | | | |
| – Ensure water conservation is being practiced by:<br>a. Minimising water use during cleaning of equipment;<br>b. Undertaking regular audits of water systems; and<br>c. Including a discussion on water usage and conservation during environmental awareness training.<br>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 | Monthly | 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 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 | 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. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | undertaken prior to discharge | | | | |
| – 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 | During the construction phase | ECO | Monthly | Implementation of the waste management |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | management plan | | | | 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 | Monthly | 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 the area must be undertaken | During the Construction Phase | ECO | As per the waste requirements for the project during construction | 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** |
| | | 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 | Monthly | 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 | Once prior to commencement of construction 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 | As per the waste requirements for the project during construction. | 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 | During the construction phase | ECO | Monthly | Disposal certificates of disposal at |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | must be undertaken as per the waste management plan | | | | 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. | Not applicable – Substation is located outside of watercourses. . | | | | | |
| – In the event of a spill, prompt action must be taken to clear the polluted or affected areas. | Not applicable – Substation is located outside of watercourses. | | | | | |
| – Where possible, no development equipment must traverse any seasonal or permanent wetland or freshwater resource feature. | Not applicable – Substation is located outside of wetland and freshwater resources. | | | | | |
| – 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. | Not applicable. Substation is located outside of watercourses and estuaries. | | | | | |
| – There must not be any impact on the long-term morphological dynamics of watercourses or estuaries. | Not applicable. Substation is located outside of watercourses. | | | | | |
| – Existing crossing points must be favoured over the creation of new crossings (including temporary access). | Not applicable. Substation is located outside of watercourses and no wetland and watercourse crossings are anticipated. | | | | | |
| – When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: | Not applicable. Substation is located outside of watercourses. | | | | | |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| a) Water levels during the period of construction.<br>No altering of the bed, banks, course or characteristics of a watercourse;<br>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;<br>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<br>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 | Construction and operation (i.e. for | ECO | As and when required | No unnecessary clearance of indigenous |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | vegetation to be avoided before clearance is undertaken | maintenance purposes) | Operation and maintenance team | | vegetation is undertaken |
| – Protected or endangered species may occur on or near the development Area. 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 | 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 | Once prior to the commencement of construction. | 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 | Permits on file |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | must be kept on file | | | protected species | |
| – The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals. | 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 | As or when required. | Rescue and replanted species reported in Audit Report |
| – 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 | ECO | As and when required. | Felled Trees reported in Audit Report |
| – Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris. | Not applicable. Substation outside of watercourses. | | | | | |
| – 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 and Contractor | 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** |
| | | | | | | 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 management facility | During the construction phase | ECO | As and when required | Disposal certificates of disposal at licensed facilities to be provided and filed as part of the filing system |

### *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. | Not applicable | | | | | |
| – 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 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 | Avoid breeding sites and ensure that special care is taken in the presence of nestlings and fledgelings | During the Construction Phase Operation Phase | ECO Operation and maintenance team | Bi-Weekly, and as and when required during the construction. Monthly, and as and when required during operation | Photographic record of intact breeding sites |
| – 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 | All mitigation measures recommended by the avifauna | During the Construction Phase Operation Phase | ECO Operation and maintenance team | Bi-Weekly during construction and monthly during operation | Photographic record of compliance and successful implementation |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | specialist must be implemented | | | | 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 | 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 Awareness Training and the consequences of not adhering to the requirement. | During the Construction Phase | ECO | Monthly | 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** |
| | | 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. | dEO / cEO in consultation with the Contractor | 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. | 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. | Not Applicable | | | | | |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 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 | As and when required during the construction phase. | 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 Plan specific to the project | Pre-construction Construction | ECO | Once, prior to the commencement of construction. | 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 be open for long-periods of time | During the Construction Phase | Contractor ECO | Weekly Monthly | 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 infrastructure and protective scaffolding. | Contractor | All staff must be easily identifiable and the climbing of infrastructure and scaffolding must be undertaken by | During the construction phase | ECO | Monthly, and as and when required | No incidents of unauthorised climbing is reported |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | authorised personnel as managed by the Contractor | | | | |
| – 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 | Monthly, 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 | Prior to commencement of construction. | 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 | No evidence of non-compliance identified |
| – Where mobile chemical toilets are required, the following must be ensured:<br>a) Toilets are located no closer than 100 m to any watercourse or water body;<br>b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause;<br>c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; | 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 | Prior to commencement of construction as and when required. | 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** |
| 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;<br>e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; and<br>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. |
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| Impact Management Actions | Implementation | | | Monitoring | | |
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| | **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. | 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 | Prior to the commencement of construction. | 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 | Prior to the commencement of construction. | Environmental awareness training material requirements checklist |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 and as and when required. | Proof of placement of free condoms by the contractor to be provided |
| – Medical support must be made available. | 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, and as and when required | 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 | | |
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| | **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 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 | Pre-construction | ECO | Prior to the commencement of the environmental awareness training | Environmental awareness training material requirements checklist |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | emergency procedures | | | | |
| – 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 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 |
| – In the event of emergency, necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section 5.17). | Contractor | Implement the required mitigation measures in the event of a spill or leak as per the requirements of Section 5.17. | Construction 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 | | |
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| | **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 as required for the Project. | 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 |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 | During the Construction Phase | ECO | Monthly, and as and when required | Record of hazardous chemicals and |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | the respective MSDS | | | | 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.<br><br>Provide appropriate training and personal protective equipment for the relevant personnel handling hazardous substances and materials | Pre-construction & Construction | ECO | Prior to the commencement of the environmental awareness training. | 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** |
| – 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 drip tray must be used to ensure small spills are contained. | Contractor | Appropriately constructed refuelling facility must be developed as per the | During the Construction Phase | ECO<br>cEO | Monthly | Soils at the refuelling facility are protected as required and drip trays are |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | requirements. Drip trays must be provided for use | | | | 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 | 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 | 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 | Prior to the commencement of construction and during the operational phase. | 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 |

| 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 | Proof of storage and disposal in terms of the National Environmental Management: Waste Act must be provided.<br><br>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 are 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 | During the Construction Phase | ECO | Monthly | A dedicated area for the maintenance of vehicles and |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | vehicles and equipment | | | | machinery is used. |
| – During servicing of vehicles or equipment, especially where emergency repairs are affected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts. | Contractor | Ensure that a drip tray is available for an 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 and as and when identified that equipment is leaking. | 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 |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 and surface water.

| 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 | During the Construction Phase. | No concrete mixing is undertaken on open ground |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 | Contractor ECO | Bi-Weekly Monthly | 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 | Contractor ECO | Bi-Weekly Monthly | 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 | Contractor ECO | Bi-Weekly Monthly | 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 | Contractor ECO | Bi-Weekly Monthly | No cement laden water is released into the environment. Only minimal water is used for washing |

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | 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 | As and when required. | 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 | Monthly | 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 | As soon as is practically possible. | Plan for implementation 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** |
| – 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 month) | 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 month) | Soil stockpiles are protected from wind erosion |
| – 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 | Contractor ECO | Bi-Weekly, until erosion is no longer a problem | Recommendations made by the ECO have been implemented by the Contractor |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas. | cEO / dEO / contractor | Inform all drivers of speed limits and place appropriate signage along the relevant roads | 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 | Bi-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. | cEO / dEO / contractor | Ensure the contractor is suitably licensed with all necessary credentials and certifications | Pre-Construction Phase | ECO/EO | Once off, before blasting activities commence | ECO/EO to check all valid credentials and certifications on hand. |
| – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site. | cEO / dEO / contractor | Ensure all responsible personnel and landowners have been notified of blasting activities 24 hours in advance and keep records of notifications. | Pre-Construction Phase | ECO/EO | Once off, before blasting activities commence | ECO/EO to confirm all necessary personnel and landowners have been notified. Notification records to be provided. |

### *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 levels 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 | cEO and Contractor in consultation with the ECO | Compile a Code of Conduct for staff. Appropriate operating hours must be | Pre-construction and Construction | ECO | Once, prior to the commencement of construction | 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** |
| management outcome related to noise management. | | identified for the project. | | | | |

### *5.23 Fire prevention*

**Impact management outcome:** Prevention of uncontrollable fires.

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – Designate smoking areas where the fire hazard could be regarded as insignificant. | cEO / Contractor | Identify and demarcate through signage for designated smoking areas | Pre-construction & Construction | ECO | Prior to commencement of construction. | 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 | Prior to commencement of construction. | 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 | Pre-construction | ECO | Once, during the commencement of the Construction Phase | Proof of consultation with the FPA |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | associated construction activities | | | | |
| – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site. | dEO / cEO / Contractor in consultation with the ECO | Develop environmental awareness training material which covers the contact numbers for the FPA and emergency services.<br><br>Place the contact numbers for the FPA and emergency services at a visible and central location | 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 |
| – 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 | As and when required. | Contractor to provide proof of availability of appropriate material to cover stockpiles when required |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 | As and when required. | 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 | As and when required. | Photographic record of rehabilitation of terrace embankments and areas outside the high voltage yards |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 | As and when required. | 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 | As and when required. | 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 | As and when required. | 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. | Contractor | Use a licensed waste disposal facility for the disposal of excess spoil | During the Construction Phase | ECO | As and when required. | 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 | As and when required. | 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 | As and when required. | 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 | As and when required. | 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. | 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 | During the Construction Phase | ECO | As and when required. | Management of hazardous substances spills from equipment |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | from equipment as per the requirements of section 5.17 | | | | is undertaken in 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. | 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 | Contractor<br>ECO | Weekly<br>Monthly | 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. | 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 | During the Construction Phase | ECO | Monthly | The recycling or disposal of residual solid waste is undertaken in |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | requirements of section 5.8 | | | | 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 | Monthly | 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 | As and when required. | 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 |

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – Create work and training opportunities for local stakeholders. | Contractor | Develop and implement a "locals first" policy for the provision of employment opportunities as far as reasonably possible | 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 on-site housing is envisaged with daily commute to and from site expected of construction staff. | | | | | |

### *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 | 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 |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | requirements listed in 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 are kept up to date and filed | During the Construction Phase | ECO | Prior to site closure for more than 05 days | Signage placed indicating location of fire extinguishers and service records |
| – 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 in consultation with the ECO | Hold a workshop with all security personnel to | Pre-construction & construction | ECO | Prior to site closure for more than 05 days | Proof of the workshop held must be kept on |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | provide a brief of the project and security requirements. Provide facilities in order to contact management and emergency personnel | | | | 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 | During the Construction Phase | ECO | Prior to site closure for more than 05 days | Wind and dust mitigation is implemented |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | mitigation prior to site closure | | | | 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 |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment. | Contractor | Develop and implement a procedure for the dismantling and transportation of equipment containing pollution causing substances which prevents spillage and pollution of the environment | Decommissioning | ECO | Monthly | Proof from contractor that dismantling and 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. | 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.<br><br>Dispose of all spoil and waste at a licensed waste disposal facility | Pre-construction & Rehabilitation | ECO | Monthly | 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 | Monthly | 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 | Monthly | All slopes are assessed and terraced as required |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| – 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 | Monthly | 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 | As and when required. | 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 | As and when required. | 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 | As and when required. | 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 | Rehabilitation | ECO | As and when required. | No weeds are visible in the |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | area and topsoil before spreading the topsoil | | | | 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 | As and when required. | 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 the 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 | As and when required. | 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 | As and when required. | 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 | Rehabilitation | ECO | As and when required. | Photographic record of spoil used for |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|---|---|---|---|
| | **Responsible person** | **Method of implementation** | **Timeframe for implementation** | **Responsible person** | **Frequency** | **Evidence of compliance** |
| | | as per the listed requirements | | | | 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:<br>a) Annual and perennial plants are chosen;<br>b) Pioneer species are included;<br>c) Species chosen must be indigenous to the area with the seeds used coming from the area;<br>d) Root systems must have a binding effect on the soil; and<br>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** | **Kotulo Tsatsi Energy (Pty) Ltd** |
| **Contact Person** | Adriaan Botha |
| **Physical Address** | 2 Michelin Street, Vanderbijlpark, 1900 |
| **Postal Address** | P.O. Box 432 |
| **Telephone**[1] | 082 824 1684 |

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

| | |
|---|---|
| **EAP Name** | **Nkhensani Masondo** |
| **EAP Qualifications** | BSocSci environmental Analysis and Management |
| **Professional Affiliation/Registration** | Environmental Assessment Practitioners Association South Africa – 2020/1385 |
| **Physical Address** | First Floor, Block 2<br>5 Woodlands Drive Office Park<br>Cnr Woodlands Drive & Western Service Road<br>Woodmead<br>2191 |
| **Telephone** | (011) 656 3237 |
| **Fax** | 086 684 0547 |
| **Cell** | 066 334 7166 |
| **Email Address** | nkhensani@savannahsa.com |

#### 7.1.3. Project Details

**Project Name**: Kotulo Tsatsi Energy PV3, Northern Cape Province

#### 7.1.4. Project Description

The Applicant, Kotulo Tsatsi Energy (Pty) Ltd, is proposing the construction of a photovoltaic (PV) solar energy facility (known as the Kotulo Tsatsi Energy PV3) located on a site located approximately 70km south-west of the town of Kenhardt and 60km north east of Brandvlei in the Northern Cape Province. The solar energy facility will comprise several arrays of PV panels and associated infrastructure and will have a contracted capacity of up to 480MW. The facility will be located within the farm Portion 2 of Farm Styns Vley 280. The PV facility is planned to be located within an area previously authorised for CSP project infrastructure, which is adjacent to the authorised Kotulo Tsatsi Energy PV1 and PV2 Facilities as well as the authorised CSP3 facility and associated infrastructure. The project site falls under the Hantam Local Municipality which is part of Namakwa District Municipality. The site is accessible via an existing

[1] Contact details not disclosed in accordance with the requirements of POPIA

gravel farm road (known as Soafskolk Road) which provides access to the farm off of the R27 which is located east of the project site.

The PV infrastructure assessed in this application is in response to the Applicant's need to change the authorised generation technology for the facility located on the farm Portion 2 of Farm Styns Vely 280. That is, a technology change from the previously authorised CSP project infrastructure to PV project infrastructure. In this regard, the solar PV facility will be connected to the grid via a 132kV grid connection solution to the authorised 400kV collector substation located on Portion 2 of Farm Styns Vley 280, and will comprise on-site switching substations, facility substations and a 132kV power line within a 300m wide corridor.

A development area[2] of ~ 1888ha was defined through the Scoping evaluation of the site and has now been assessed for the facility footprint. The development footprint[3] has an extent of ~1350ha.

Infrastructure associated with the solar PV facility contracted capacity of up to 480MW will include:

- » Solar PV array comprising PV modules and mounting structures.
- » Inverters and transformers.
- » Cabling between the project components.
- » Access roads, internal distribution roads and fencing around the development area.
- » Substation and BESS hubs, including:
  - Battery Energy Storage System (BESS)
  - On-site facility substations, switching substations
- » O&M and laydown area hub, including:
  - Site offices and maintenance buildings, including workshop areas for maintenance and storage.
  - Laydown areas and temporary construction camp area.

7.1.5. Project Location

» The project site proposed for the Kotulo Tsatsi Energy PV3 is located approximately 70km south-west of the town of Kenhardt and 60km north-east of Brandvlei in the Northern Cape Province, on Portion 2 of the Farm Styns Vley No. 280.

### *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.

[2] The development area is that identified area (located within the project site) where the Kotulo Tsatsi Energy PV3 facility is planned to be located. This area has been selected as a practicable option for the facility, considering technical preference and constraints. The development area is ~1888ha in extent.

[3] The development footprint is the defined area (located within the development area) where the PV panel array and other associated infrastructure for Kotulo Tsatsi Energy PV3 is planned to be constructed. This is the actual footprint of the facility, and the area which would be disturbed.

Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

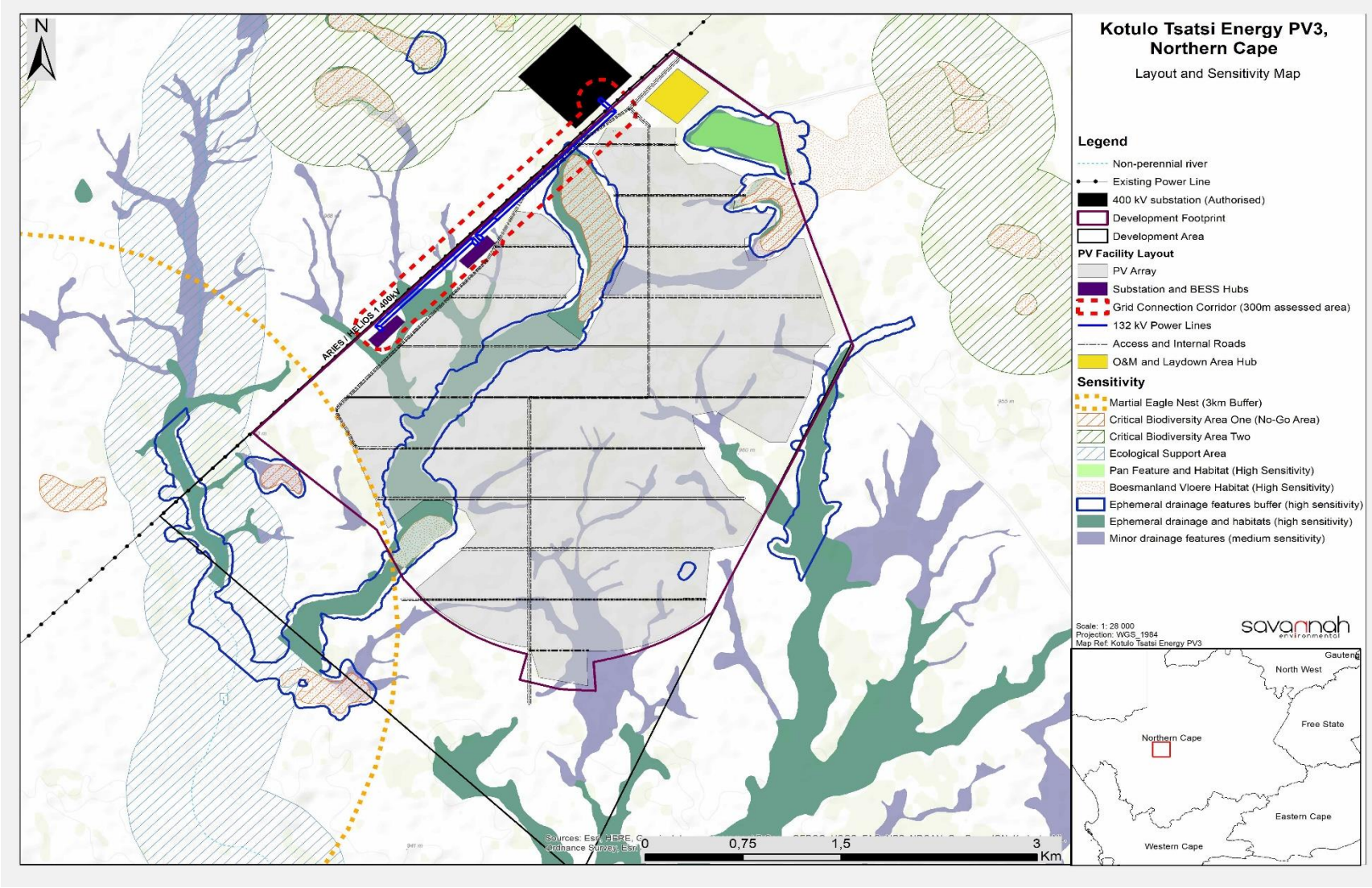


**Figure 1:** Environmental sensitivity map for the Kotulo Tsatsi Energy PV3 of which the substations is part

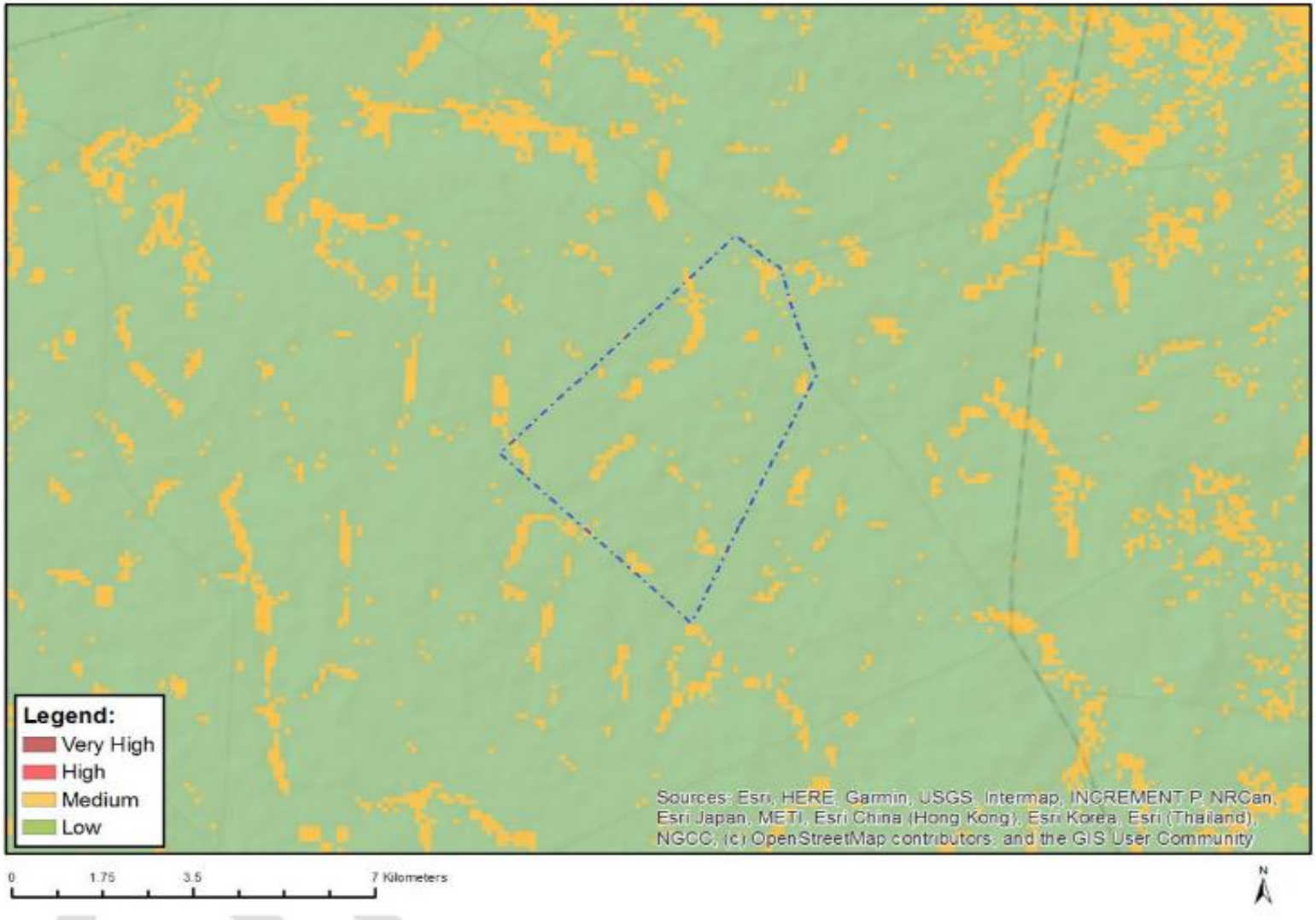


**Figure 2:** Map of relative agriculture theme sensitivity

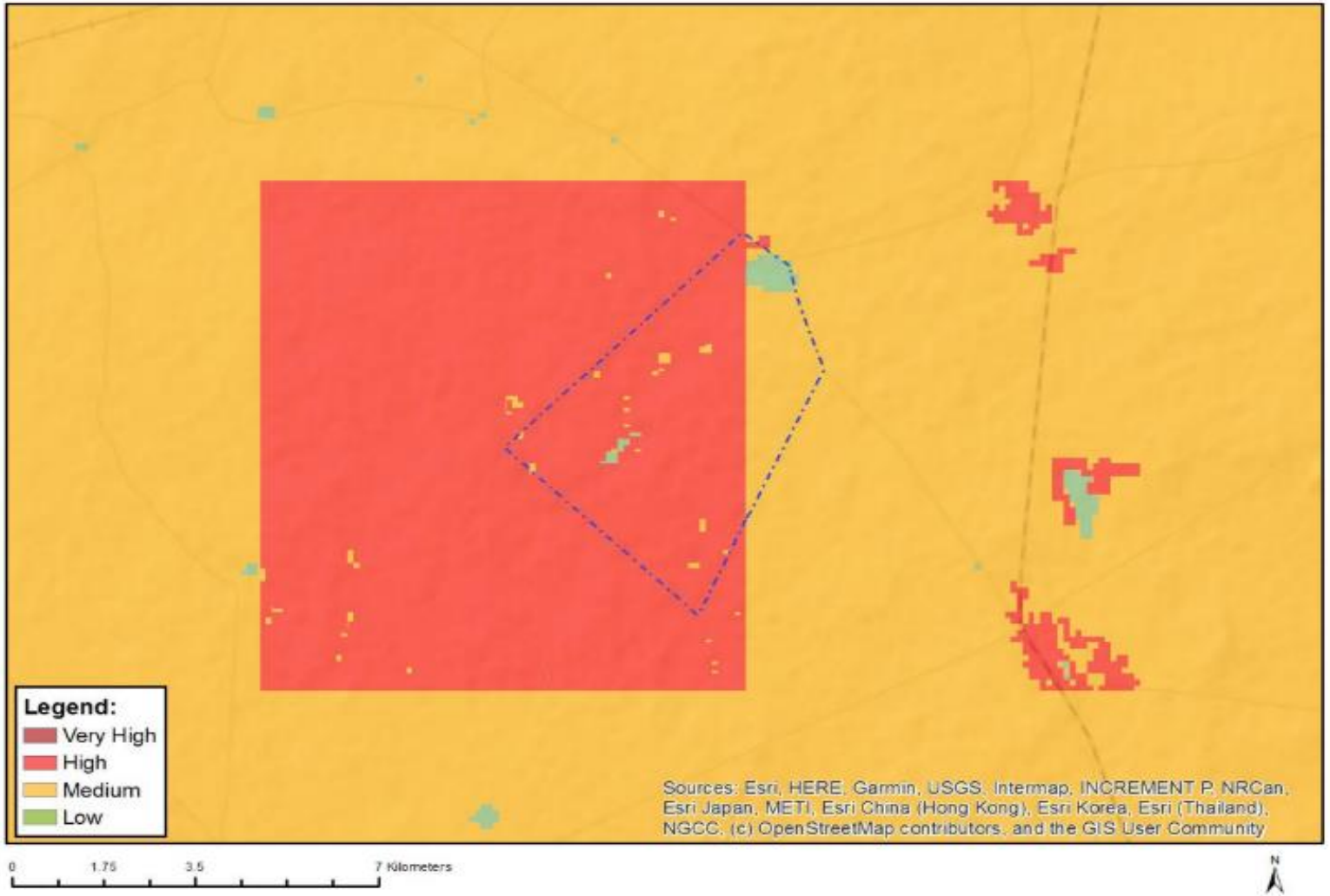


**Figure 3:** Map of relative animal species theme sensitivity

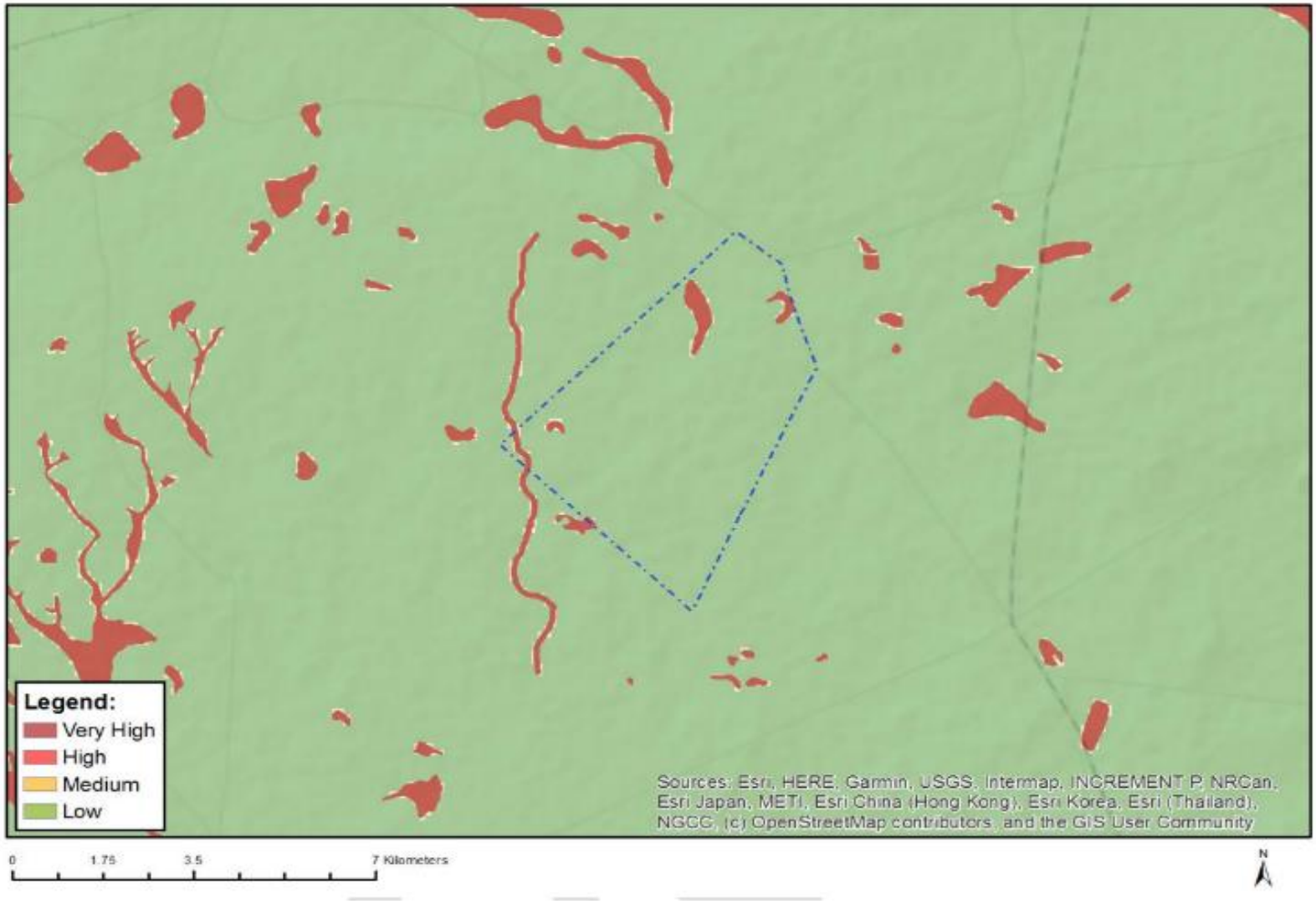


**Figure 4:** Map of relative aquatic biodiversity theme sensitivity

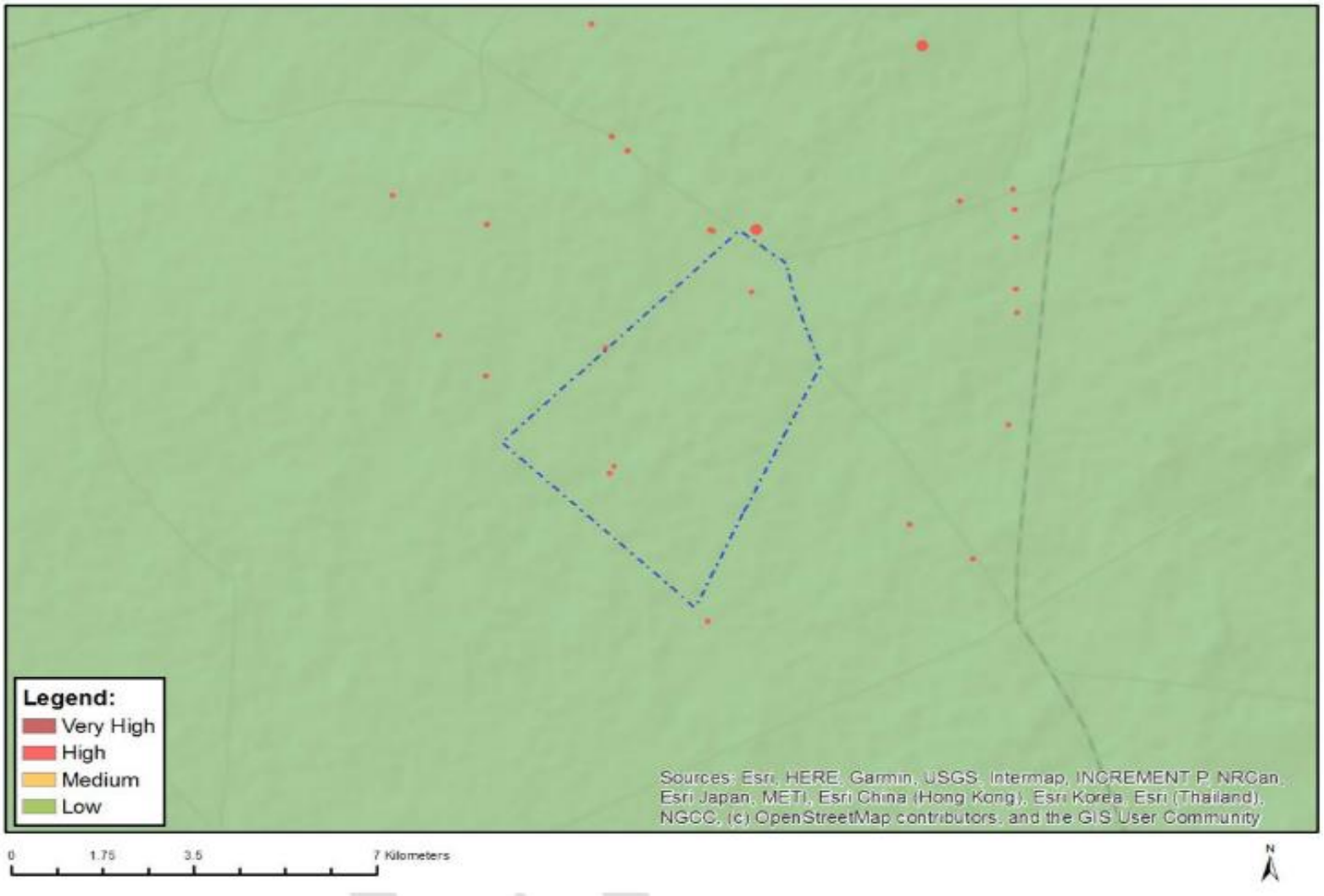


**Figure 5:** Map of relative archaeological and cultural heritage theme sensitivity

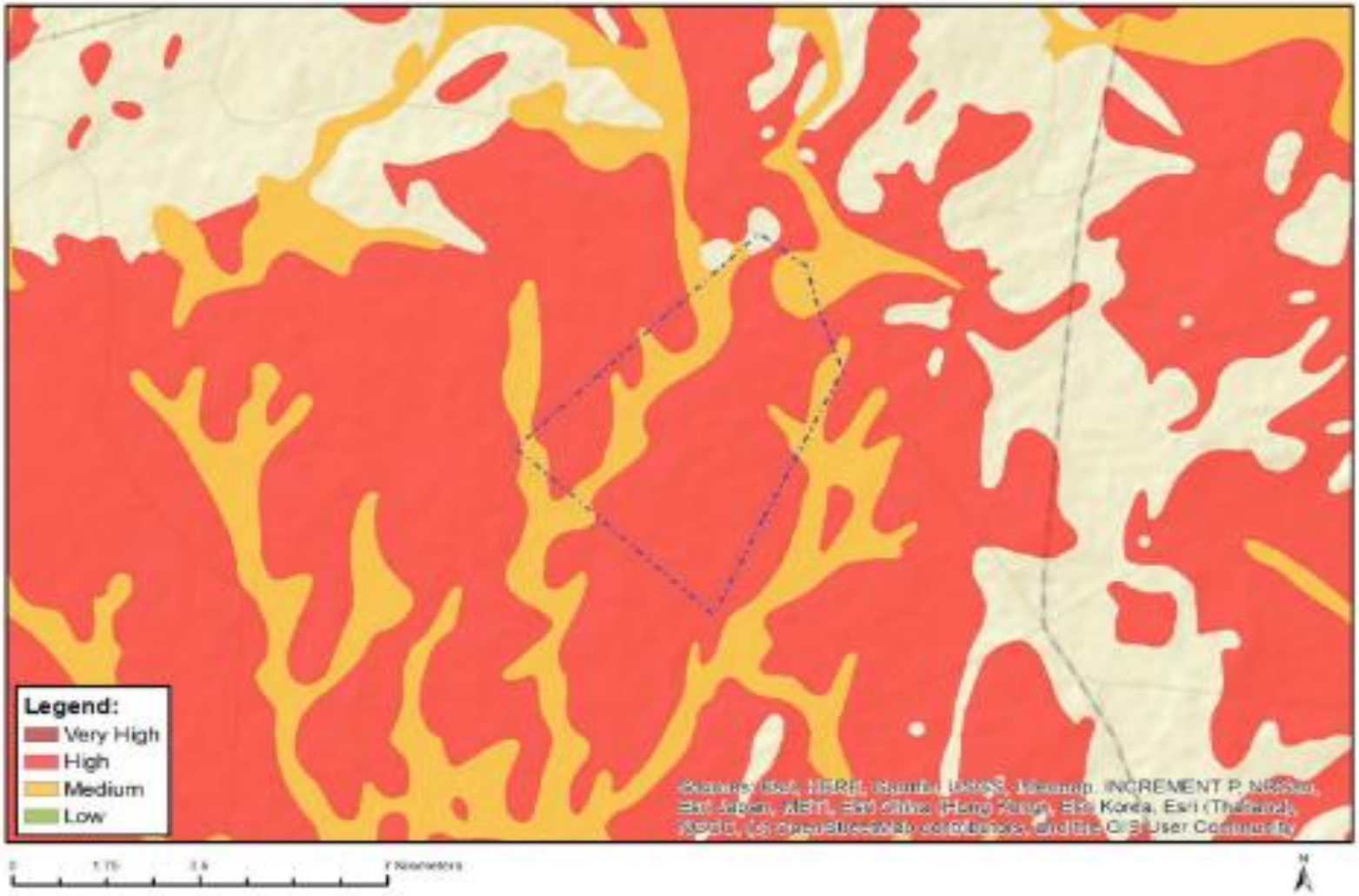


**Figure 6:** Map of relative palaeontology theme sensitivity


**Figure 7:** Map of relative civil aviation theme sensitivity


**Figure 8:** Map of relative plant species theme sensitivity


**Figure 9:** Map of relative defence theme sensitivity


**Figure 10:** Map of avian theme sensitivity

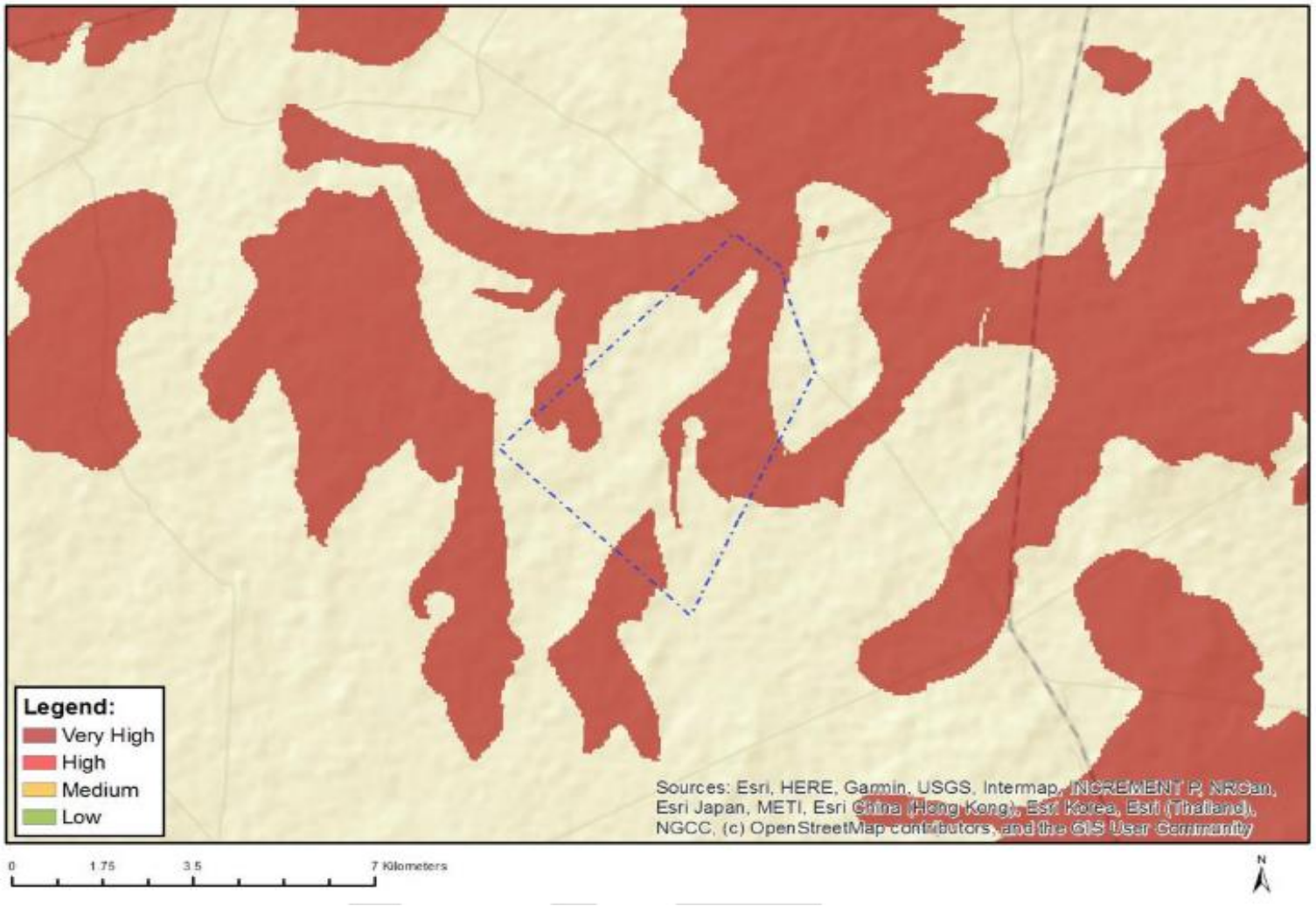


**Figure 11:** Map of relative landscape theme sensitivity

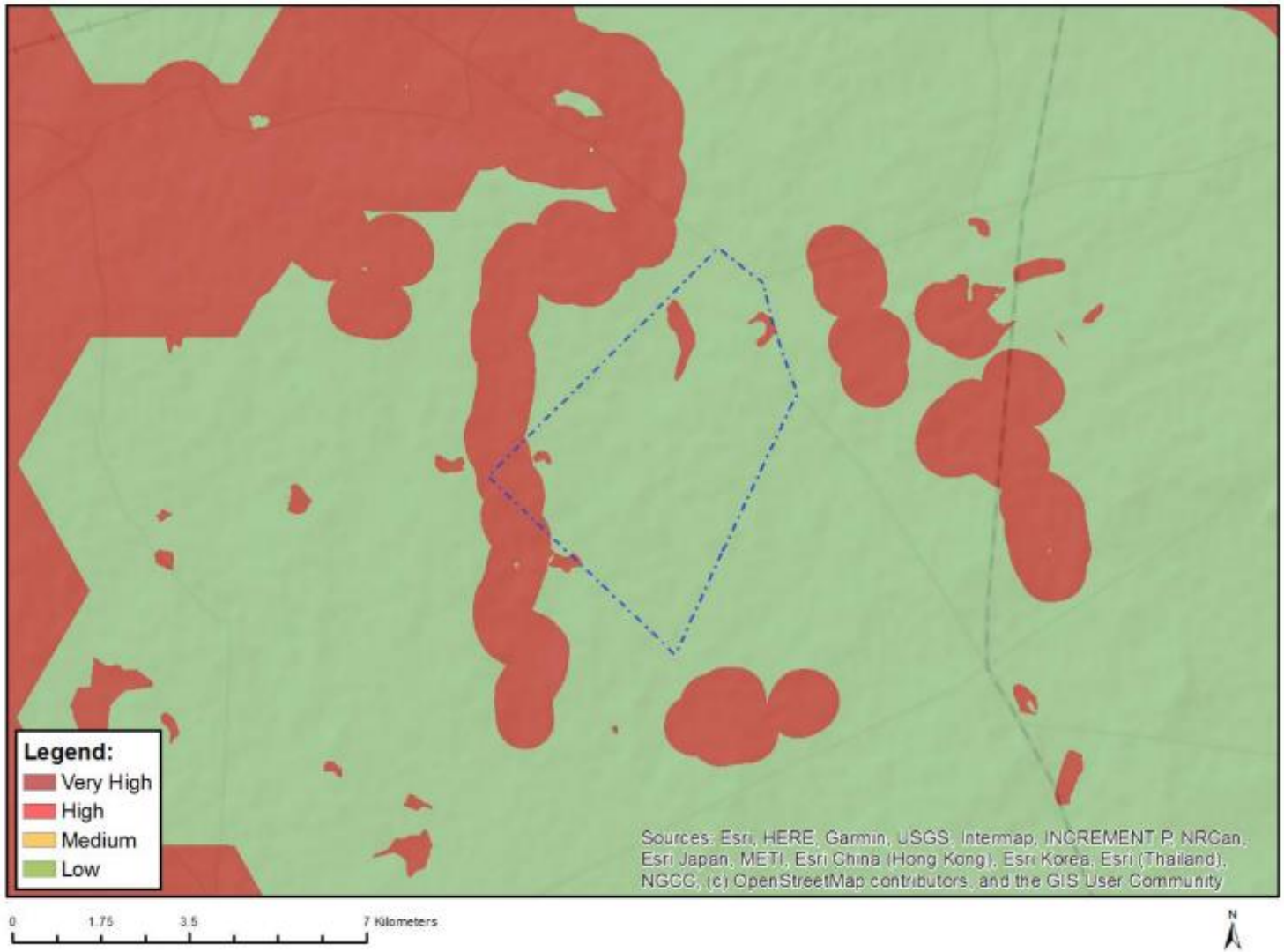


**Figure 12:** Map of relative terrestrial biodiversity theme sensitivity

### 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 days prior to the date on which the activity will commence or commencement of construction to facilitate compliance inspections.

Signature Proponent/applicant/ holder of EA Date:

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### 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.

# CONSTRUCTION PHASE OUTCOMES AND ACTIONS

**OBJECTIVE 1: Ensure the substation design responds to identified environmental constraints and opportunities**

| | |
|---|---|
| **Project Component/s** | » Substation |
| **Potential Impact** | » Impact on identified sensitive areas.<br>» Design fails to respond optimally to the environmental considerations. |
| **Activities/Risk Sources** | » Positioning of all project components.<br>» Pre-construction activities, e.g. geotechnical investigations, site surveys of substation footprint, and environmental walk-through surveys.<br>» Positioning of temporary laydown areas. |
| **Mitigation: Target/Objective** | » To ensure that the design of the substation responds to the identified environmental constraints and opportunities.<br>» To ensure that pre-construction activities are undertaken in an environmentally friendly manner. |

| Mitigation: Action/Control | Responsibility | Timeframe |
|---|---|---|
| Plan and conduct pre-construction activities in an environmentally acceptable manner. | Project developer<br>Contractor | Pre-construction |
| Undertake a detailed geotechnical pre-construction survey. | Project developer<br>Geotechnical specialist | Pre-construction |
| The EMPr must form part of the contract with the Contractors appointed to construct the Solar PV Facility and must be used to ensure compliance with environmental specifications and management measures. The implementation of this EMPr for all phases of the proposed project is considered to be key in achieving the appropriate environmental management standards as detailed for this project. | Project developer<br>Contractor | Pre-construction |
| Plan the placement of laydown areas and temporary construction equipment camps outside of identified sensitive areas (as detailed in Figure 1 of Part B of this EMPr) and in such a way as to minimise vegetation clearing wherever possible and to avoid habitat loss and disturbance to adjoining areas. | Project developer | Pre-construction |
| Access roads and entrances to the site must be carefully planned to limit any intrusion on the neighbouring property owners and road users. | Project developer | Planning and design |

| Mitigation: Action/Control | Responsibility | Timeframe |
|---|---|---|
| Plan to make use of existing roads and tracks where feasible, rather than creating new routes. Ensure that adequate vehicle turning areas are allowed for | Project developer | Planning and design |
| Final project design must include measures for adequate surface water runoff, spill control and leakage control system. | Project developer<br>Design engineer | Design and planning |
| Reduce the construction period as far as possible through careful planning and productive implementation of resources. | Project developer<br>Contractor | Pre-construction |

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| **Performance Indicator** | » The design meets the objectives and does not degrade the environment.<br>» Demarcated sensitive areas as detailed in Part B of this EMPr are avoided at all times.<br>» Design and layouts respond to the mitigation measures and recommendations in the EIA Report. |
| **Monitoring** | » Review of the design by the Project Manager and the ECO prior to the commencement of construction.<br>» Monitor ongoing compliance with the EMPr. |

**OBJECTIVE 2: Protection of sensitive areas, flora and fauna**

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| **Project Component/s** | » Substation. |
| **Potential Impact** | » Impacts on natural vegetation, habitats and fauna.<br>» Loss of indigenous natural vegetation due to construction activities.<br>» Impacts on sensitive areas |
| **Activity/Risk Source** | » Vegetation clearing.<br>» Site preparation and earthworks.<br>» Excavation of foundations.<br>» Construction of infrastructure.<br>» Site preparation (e.g. compaction).<br>» Excavation of foundations. |
| **Mitigation: Target/Objective** | » To minimise the development area as far as possible.<br>» To minimise impacts on surrounding sensitive areas. |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| No fires are allowed within the Project Site boundary as there is a risk of runaway veld fires. | EPC Contractor | Construction |
| No firewood collection is allowed on-site. | EPC Contractor | Construction |
| ECO and/or Contractor's EO to provide supervision and oversight of vegetation clearing activities and other activities which may cause damage to the environment, especially at the initiation of the Project, when the majority of vegetation clearing is taking place. | Contractor EO<br>ECO | Construction |
| Unnecessary impacts on surrounding natural vegetation must be avoided. The construction impacts must be contained to the Development Footprint of the Project. | EPC Contractor | Construction |
| Where new roads need to be constructed, the existing road infrastructure should be rationalised and any unnecessary roads decommissioned and rehabilitated to reduce the disturbance of the area. | EPC Contractor | Construction |
| All vehicles to remain on demarcated roads and no unnecessary driving in the veld outside these areas should be allowed. | EPC Contractor | Construction |
| All cleared areas should be revegetated with indigenous perennial species from the local area. | EPC Contractor<br>ECO<br>EO | Construction |
| The extent of clearing and disturbance to the vegetation must be kept to a minimum so that impact on fauna and their habitats is restricted. | EPC Contractor | Construction |
| During construction any fauna directly threatened by the construction activities should be removed to a safe location by a suitably qualified person. | EPC Contractor<br>Specialist – ecologist/ trained person | Construction |
| The illegal collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. | EPC Contractor | Construction |
| Employees should be trained (e.g. during toolbox talks) that poisonous animals should not be killed and if encountered the ECO/ EO should be informed. | Project Developer<br>EPC Contractor<br>ECO<br>EO | Duration of contract |
| All construction vehicles on site should adhere to a low speed limit (40km/h) to avoid collisions with susceptible species such as snakes and tortoises. | EPC Contractor | Construction |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Construction vehicles limited to the Development Footprint on the Project Site (no movement outside of the demarcated footprint). | EPC Contractor | Construction |

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| **Performance Indicator** | » No disturbance outside of designated work areas.<br>» Minimised clearing of existing vegetation.<br>» Topsoil appropriately stored, managed and rehabilitated.<br>» Limited soil erosion around site.<br>» No activity in restricted areas.<br>» Minimal level of soil degradation. |
| **Monitoring** | » Observation of vegetation clearing activities by EO throughout construction phase.<br>» Supervision of all clearing and earthworks.<br>» Ongoing monitoring of erosion management measures within the site.<br>» Monthly inspections of sediment control devices by the EO.<br>» An incident reporting system will be used to record non-conformances to the EMPr. |

**OBJECTIVE 3: Minimise the establishment and spread of alien invasive plants**

Major factors contributing to invasion by alien invasive species include high disturbance activities and negative grazing practices. Consequences of this may include:

» Loss of indigenous vegetation;
» Change in vegetation structure leading to change in various habitat characteristics;
» Change in plant species composition;
» Change in soil chemical properties;
» Loss of sensitive habitats;
» Loss or disturbance to individuals of rare, endangered, endemic, and/or protected species;
» Fragmentation of sensitive habitats;
» Change in flammability of vegetation, depending on alien species; and
» Hydrological impacts due to increased transpiration and runoff.

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| **Project Component/s** | » Substation. |
| **Potential Impact** | » Invasion of natural vegetation surrounding the site by declared weeds or invasive alien species.<br>» Impacts on soil.<br>» Impact on faunal habitats.<br>» Degradation and loss of agricultural potential. |
| **Activities/Risk Sources** | » Transport of construction materials to site.<br>» Movement of construction machinery and personnel.<br>» Site preparation and earthworks causing disturbance to indigenous vegetation.<br>» Construction of site access roads.<br>» Stockpiling of topsoil, subsoil and spoil material.<br>» Routine maintenance work – especially vehicle movement. |
| **Mitigation: Target/Objective** | » To significantly reduce the presence of weeds and eradicate alien invasive species.<br>» To avoid the introduction of additional alien invasive plants to the site.<br>» To avoid distribution and thickening of existing alien plants in the site.<br>» To complement existing alien plant eradication programs in gradually causing a significant reduction of alien plant species throughout the site. |

| **Mitigation: Action/control** | **Responsibility** | **Timeframe** |
|---|---|---|
| Regular monitoring for alien plants within the Development Footprint as well as adjacent areas which receive runoff from the facility must be undertaken as these are also likely to be prone to invasion problems. | EPC Contractor | Construction |
| Regular alien plant clearing should be conducted using the best-practice methods for the species concerned. The use of herbicides should be avoided as far as possible. | EPC Contractor | Construction |
| Unnecessary impacts on surrounding natural vegetation must be avoided. The construction impacts must be contained to the Development Footprint of the Project. | EPC Contractor | Construction |
| Avoid creating conditions in which alien plants may become established:<br>» Keep disturbance of indigenous vegetation to a minimum.<br>» Rehabilitate disturbed areas as quickly as possible once construction is complete in an area.<br>» Do not import soil from areas with alien plants. | EPC Contractor<br>ECO<br>EO | Construction |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Establish an on-going monitoring programme to detect, quantify and remove any alien species that may become established and identify the problem species (as per Conservation of Agricultural Resources Act and Act 43 of 1983 and NEM: Biodiversity Act). | EPC Contractor<br>ECO<br>EO | Construction |
| Immediately control any alien plants that become established using registered control methods appropriate for the particular species in question. Where necessary, obtain an opinion from a registered Pest Control Officer. | EPC Contractor<br>ECO<br>EO | Construction |
| All alien plant re-growth must be monitored and should these alien plants reoccur these plants should be re-eradicated. The scale of the development does however not warrant the use of a Landscape Architect and / or Landscape Contractor. | EPC Contractor<br>ECO<br>EO | Construction |
| The use of herbicides and pesticides and other related horticultural chemicals should be carefully controlled and only applied by personnel adequately certified to apply pesticides and herbicides (a registered Pest Control Officer). It must be ensured that WHO Recommended Classification of Pesticides by Hazard Class 1a (extremely hazardous) or 1b (highly hazardous) are not purchased, stored or used on site along with any other nationally or internationally similarly restricted/banned products. | EPC Contractor<br>ECO<br>EO | Construction |
| A registered Pest Control Officer must be appointed to implement the invasive alien plants and weeds management plan. The Pest Control Officer must supervise the clearing team to ensure compliance with the invasive alien plants and weeds management plan. | EPC Contractor<br>ECO<br>EO | Construction |
| All cleared areas should be revegetated with indigenous perennial species from the local area. | EPC Contractor<br>ECO<br>EO | Construction |

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| **Performance Indicator** | » For each alien species: number of plants and aerial cover of plants within the site and immediate surroundings. |
| **Monitoring** | » On-going monitoring of area by EO during construction.<br>» Annual audit of development footprint and immediate surroundings by qualified botanist.<br>» If any alien invasive species are detected then the distribution of these must be mapped (GPS co-ordinates of plants or concentrations of plants), number of individuals (whole site or per unit area), age and/or size classes of plants and aerial cover of plants.<br>» The results must be interpreted in terms of the risk posed to sensitive habitats within and surrounding the site.<br>» The environmental manager/site agent must be responsible for driving this process. |

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| | » Reporting frequency depends on legal compliance framework. |

**OBJECTIVE 4: Minimise impacts on soils**

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| **Project Component/s** | » Substation. |
| **Potential Impact** | » Impacts on soil.<br>» Loss of topsoil.<br>» Erosion. |
| **Activity/Risk Source** | » Vegetation clearing.<br>» Site preparation and earthworks.<br>» Excavation of foundations.<br>» Construction of infrastructure.<br>» Site preparation (e.g. compaction).<br>» Excavation of foundations.<br>» Stockpiling of topsoil, subsoil and spoil material. |
| **Mitigation: Target/Objective** | » To minimise the development area as far as possible.<br>» To minimise impacts on soils.<br>» Minimise spoil material.<br>» Minimise erosion potential. |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Any erosion problems observed along access roads or any hardened/engineered surface should be rectified immediately and monitored thereafter to ensure that they do not re-occur. | EPC Contractor | Construction |
| All denuded areas, affected by the development, should be re-vegetated with locally occurring species, to bind the soil and limit erosion potential where applicable. | EPC Contractor<br>EO<br>ECO | Construction |
| Practical phased development and vegetation clearing must be practiced so that cleared areas are not left un-vegetated and vulnerable to erosion for extended periods of time. | EPC Contractor<br>EO | Construction |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Roads and other disturbed areas should be regularly monitored for signs of erosion. These areas should be monitored by the EO to assess the success of the remediation. | EPC Contractor<br>EO | Construction |
| Topsoil must be removed and stored separately from subsoil. Topsoil must be reapplied where appropriate as soon as possible in order to encourage and facilitate rapid regeneration of the natural vegetation on cleared areas. | EPC Contractor<br>ECO<br>EO | Construction |
| Stockpile topsoil for re-use in rehabilitation phase. Maintain stockpile shape and protect from erosion. | EPC Contractor | Construction |
| Salvaging topsoil:<br>» Topsoil must always be salvaged and stored separately from subsoil and lower-lying parent rock or other spoil material.<br>∗ Topsoil stripping removes up to 30 cm or less of the upper soils.<br>∗ In cultivated areas, depth of topsoil may increase and needs to be confirmed with the landowner.<br>» Prior to salvaging topsoil the depth, quality and characteristics of topsoil should be known for every management area.<br>∗ This will give an indication of total volumes of topsoil that need to be stored to enable the proper planning and placement of topsoil storage.<br>∗ Different types of topsoil – rocky soils and sands or loams must be stored separately.<br>Topsoil should be removed (and stored) under dry conditions to avoid excessive compaction whenever topsoil will have to be stored for longer than one year. | EPC Contractor | Construction |
| Excavated soils should be stockpiled on the upslope side of the excavated trench so that eroded sediments off the stockpile are washed back into the trench. | EPC Contractor | Construction |
| Storing topsoil:<br>» Viability of stored topsoil depends on moisture, temperature, oxygen, nutrients and time stored.<br>» Rapid decomposition of organic material in warm, moist topsoil rapidly decreases microbial activity necessary for nutrient cycling, and reduces the amount of beneficial micro-organisms in the soil.<br>» Stockpile location should ideally be in a disturbed but weed-free area. | EPC Contractor | Construction |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| » Storage of all topsoil that is disturbed should be of a maximum height of 2 m and the maximum length of time before re-use is 18 months.<br>» Topsoil handling should be reduced to stripping, piling (once), and re-application. Between the stockpiling and reapplication, stored topsoil should not undergo any further handling except control of erosion and (alien) invasive vegetation.<br>» Where topsoil can be reapplied within six months to one year after excavation, it will be useful to store the topsoil as close as possible to the area of excavation and re-application, e.g. next to cabling trenches.<br>» Do not mix overburden with topsoil stockpiles, as this will dilute the proportion of fertile soil (with less fertile subsoil or rock material).<br>» Employ wind nets made from Hessian or similarly fibrous and biodegradable material, where required, to stabilise newly placed topsoil stockpiles and to reduce wind erosion.<br>» In cases where topsoil has to be stored longer than 6 months or during the rainy season, soils should be kept as dry as possible and protected from erosion and degradation by:<br>* Preventing ponding on or between heaps of topsoil<br>* Covering topsoil berms<br>* Preventing all forms of contamination or pollution<br>* Preventing any form of compaction<br>* Monitoring the establishment of all invasive vegetation and removing such if it appears<br>* Keeping slopes of topsoil at a maximal 2:1 ratio<br>* Monitoring and mitigating erosion where it appears<br>Where topsoil needs to be stored in excess of one year, it is recommended to either cover the topsoil or allow an indigenous grass cover to grow on it – if this does not happen spontaneously, seeding should be considered. | | |
| Excavated soils will need to be replaced in the same order as excavated from the trench, i.e. sub-soil must be replaced first and topsoil must be replaced last (this will maximise opportunity for re-vegetation of disturbed areas). | EPC Contractor | Construction |
| Re-applied topsoil needs to be re-vegetated as soon as possible. | EPC Contractor | Construction |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Only the proposed access roads as per the Development Footprint are to be used to reduce any unnecessary compaction. | EPC Contractor | Construction |
| Silt traps should be used where there is a danger of topsoil eroding and entering streams and other sensitive areas. These silt traps must be regularly monitored and maintained and replaced / repaired immediately as and when required. These measures should be regularly checked, maintained and repaired when required to ensure that they are effective. | EPC Contractor | Construction |
| Spillages of cement to be cleaned up immediately and disposed or re-used in the construction process. | EPC Contractor | Construction |
| Spill kits to be kept on active parts of the construction site and at site offices. | EPC Contractor | Construction |
| In instances where mobile cement batching is not available on site, cement batching to take place in designated areas only, as approved on site layout plan (if applicable). | EPC Contractor | Construction |

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| **Performance Indicator** | » Limited soil erosion around site.<br>» Minimal level of soil degradation. |
| **Monitoring** | » Ongoing monitoring of erosion management measures within the site.<br>» Monthly inspections of sediment control devices by the EO.<br>» An incident reporting system will be used to record non-conformances to the EMPr. |

**OBJECTIVE 5: Appropriate Stormwater Management**

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| **Project Component/s** | » Alteration of natural areas into hard surfaces impacting on the local hydrological regime of the area. |
| **Potential Impact** | » Poor stormwater management and alteration of the hydrological regime. |
| **Activities/Risk Sources** | » Placement of hard engineered surfaces. |
| **Mitigation: Target/Objective** | » Reduce the potential increase in surface flow velocities and the impact on localised drainage systems. |

| Mitigation: Action/Control | Responsibility | Timeframe |
|---|---|---|
| A stormwater management plan must be developed in the pre-construction 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. The stormwater control systems must be inspected on an annual basis to ensure these are functional. | EPC Contractor(s) | Design |
| The necessary biodiversity permits must be obtained prior to removal of any species of concern. Search and rescue of species of conservation concern should be conducted prior to clearing activities. | Project Developer<br>Specialist - Ecologist | Pre-construction |
| Precautions must be in place to limit the possibility of oil and other toxic liquids from entering the soil or clean stormwater system. | ECO<br>EO<br>EPC Contractor<br>Engineer | Construction |

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| **Performance Indicator** | » No impacts due to runoff.<br>» Minimise erosion as far as possible.<br>» Appropriate stormwater management system in place. |
| **Monitoring** | » Ongoing monitoring of erosion management measures within the site.<br>» Monthly inspections of sediment control devices by the EO.<br>» An incident reporting system will be used to record non-conformances to the EMPr. |

**OBJECTIVE 6: Minimise impacts related to traffic management and transportation of equipment and materials to site**

During the construction phase the road network surrounding the substation site will be affected. There will be an increase in traffic impacting on traffic volumes, congestion and road safety (light vehicles, buses, mini-vans (taxis) and as well as heavy construction vehicles), however the extent of the impact will be small and of a local nature.

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| **Project Component/s** | » Delivery of any component required for the construction phase of the substation. |
| **Potential Impact** | » Impact of heavy construction vehicles on road surfaces, and possible increased risk in accidents involving people and animals.<br>» Deterioration of road pavement conditions (both surfaced and gravel road) due to abnormal loads. |

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| | » Dust and noise pollution due to construction traffic. |
| **Activities/Risk Sources** | » Construction vehicle movement.<br>» Speeding on local roads.<br>» Degradation of local road conditions.<br>» Site preparation and earthworks.<br>» Foundations or plant equipment installation.<br>» Transportation of project components, equipment and materials to the site.<br>» Mobile construction equipment movement on-site. |
| **Mitigation: Target/Objective** | » Minimise impacts on road network and surrounding area<br>» Minimise impact of traffic associated with the construction of the facility on local traffic volumes, existing infrastructure, property owners, animals, and road users.<br>» To minimise potential for negative interaction between pedestrians or sensitive users and traffic associated with the facility construction.<br>» To ensure all vehicles are roadworthy and all materials/equipment are transported appropriately and within any imposed permit/licence conditions. |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Heavy vehicles travelling on secondary roads should adhere to low-speed limits to minimise noise and dust pollution. | Contractor(s), (Transportation sub-contractor) | Construction |
| Where possible provide public transportation service for workers in order to reduce congestion on roads. | Contractor | Construction |
| Transportation contractors must adhere to the road rules and regulations. | Contractor | Construction |
| A designated access (or accesses) to the proposed Project Site must be created to ensure safe entry and exit. | Contractor | Construction |
| Utilise only designated access routes & entrance/exits from the site. | Contractor | Construction |
| Implement appropriate signage & road safety measures at entrance/exit to the site and on site. | Contractor | Construction |
| The delivery of project components to the site must be staggered and trips must be scheduled to occur outside of peak traffic periods, where possible. | Contractor | Construction |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| The use of mobile batching plants and quarries in close proximity to the site must be considered as this would decrease the impact on the surrounding road network. | Contractor | Construction |
| Regular maintenance of gravel roads by the EPC Contractor during the construction and decommissioning phases. | Contractor | Construction |
| Dust suppression of gravel roads during the construction and decommissioning phases, as required. | Contractor | Construction |
| Any low hanging overhead lines (lower than 5.1 m) e.g., Eskom and Telkom lines, along the proposed routes will have to be moved to accommodate the abnormal load vehicles. | Contractor | Construction |

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| **Performance Indicator** | » Vehicles are in good working order and safety standards are implemented.<br>» Local road conditions and road surfaces are up to standard. |
| **Monitoring** | » Regular monitoring of road surface quality.<br>» A complaints register will be maintained, in which any complaints from the community will be logged. Complaints will be investigated and, if appropriate, acted upon. |

**OBJECTIVE 9: Rehabilitation**

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| **Project component/s** | » Grid Connection Infrastructure |
| **Potential Impact** | » Undermining of the Environmental integrity of the Project Site resulting in reduced visual aesthetics, erosion, compromised land capability and the requirement for on-going management intervention. |
| **Activity/risk source** | » Site preparation and earthworks.<br>» Excavation of foundations and trenches.<br>» Construction of laydown areas.<br>» Construction of access roads/tracks.<br>» Other disturbed areas/footprints. |
| **Mitigation: Target/Objective** | » To ensure and encourage site rehabilitation of disturbed areas.<br>» To ensure that the Project Site is appropriately rehabilitated following the execution of the works, such that residual environmental impacts (including erosion) are remediated or curtailed. |

| Mitigation: Action/control | Responsibility | Timeframe |
|---|---|---|
| Following construction, rehabilitation of all disturbed areas that will not be utilised during the operations of the Facility will be undertaken. | Contractor<br>EO | Rehabilitation |
| Rehabilitate of disturbed areas should be undertaken as soon as reasonably practicable after construction works have been closed out. | Contractor<br>EO | Rehabilitation |
| Where required, artificial rehabilitation (e.g. re-seeding with collected or commercial indigenous seed mixes) may be applied in order to speed up the rehabilitation process if deemed necessary by the ECO. | Contractor<br>EO | |
| If natural re-vegetation is unsuccessful, seeding and planting of the area will need to be implemented | Contractor<br>EO | Rehabilitation |
| All temporary facilities, equipment and waste materials must be removed from the Project Site and appropriately disposed of. | Contractor | Rehabilitation |
| On-going alien plant monitoring and removal should be undertaken on all areas of natural vegetation on an annual basis. | Contractor | Life of Project |

# OPERATIONAL PHASE OUTCOMES AND ACTIONS

**OBJECTIVE 1: Protection of sensitive area, flora, fauna and soils**

Indirect impacts on vegetation and terrestrial fauna during operation could result from maintenance activities and the movement of people and vehicles on site. In order to ensure the long-term environmental integrity of the site following construction, maintenance of the areas rehabilitated post-construction must be undertaken until these areas have successfully re-established.

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| **Project Component/s** | » Rehabilitated areas. |
| **Potential Impact** | » Disturbance to or loss of vegetation and/or habitat in surrounding areas. |

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| | » Environmental integrity of the site undermined resulting in reduced visual aesthetics, erosion, compromised land capability and the requirement for on-going management intervention. |
| **Activities/Risk Sources** | » Movement of employee vehicles within and around the site. |
| **Mitigation: Target/Objective** | » Maintain minimised footprints of disturbance of vegetation/habitats on-site.<br>» Ensure and encourage plant regrowth in non-operational areas of post-construction rehabilitation. |

| Mitigation: Action/Control | Responsibility | Timeframe |
|---|---|---|
| Any potentially dangerous fauna such as snakes or fauna threatened by the maintenance and operational activities should be removed to a safe location. | O&M Operator | Operation phase |
| The collection, hunting or harvesting of any plants or animals at the Project Site should be strictly forbidden by anyone without the appropriate permits and permissions. | O&M Operator | Operation phase |
| Implement an animal removal plan to ensure safety of workers and fauna. | O&M Operator | Operation phase |
| Make use of Low-Pressure Sodium lighting or other types of low impact lighting. | O&M Operator | Operation phase |
| All vehicles accessing the site should adhere to a low-speed limit (40km/h max) to avoid collisions with susceptible species such as snakes and tortoises. | O&M Operator | Operation phase |
| All roads and other hardened surfaces should have runoff control features which redirect water flow and dissipate any energy in the water which may pose an erosion risk. | O&M Operator | Operation phase |
| Existing roads must be maintained to ensure limited erosion and impact on areas adjacent to roadways. | O&M Operator | Operation phase |
| Vehicle movements must be restricted to designated roadways. | O&M Operator | Operation phase |

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| **Performance Indicator** | » Limited soil erosion around site.<br>» No further disturbance to vegetation or terrestrial faunal habitats.<br>» Continued improvement of rehabilitation efforts. |
| **Monitoring** | » Observation of vegetation on-site by environmental manager.<br>» Regular inspections to monitor plant regrowth/performance of rehabilitation efforts and weed infestation compared to natural/undisturbed areas. |

**OBJECTIVE 2: Minimise the establishment and spread of alien invasive plants**

Major factors contributing to invasion by alien invasive species include high disturbance activities and negative grazing practices. Consequences of this may include:

- Loss of indigenous vegetation;
- Change in vegetation structure leading to change in various habitat characteristics;
- Change in plant species composition;
- Change in soil chemical properties;
- Loss of sensitive habitats;
- Loss or disturbance to individuals of rare, endangered, endemic, and/or protected species;
- Fragmentation of sensitive habitats;
- Change in flammability of vegetation, depending on alien species; and
- Hydrological impacts due to increased transpiration and runoff.

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|---|---|
| **Project Component/s** | » Substation. |
| **Potential Impact** | » Invasion of natural vegetation surrounding the site by declared weeds or invasive alien species.<br>» Impacts on soil.<br>» Impact on faunal habitats.<br>» Degradation and loss of agricultural potential. |
| **Activities/Risk Sources** | » Movement of operation and maintenance machinery and personnel. |
| **Mitigation: Target/Objective** | » To significantly reduce the presence of weeds and eradicate alien invasive species.<br>» To avoid the introduction of additional alien invasive plants to the site.<br>» To avoid distribution and thickening of existing alien plants in the site.<br>» To complement existing alien plant eradication programs in gradually causing a significant reduction of alien plant species throughout the site. |

| Mitigation: Action/Control | Responsibility | Timeframe |
|---|---|---|
| Due to the disturbance at the site as well as the increased runoff generated by the hard infrastructure, alien plant species are likely to be a long-term problem at the site and a long-term control plan will need to be implemented. | O&M Operator | Operation phase |
| Regular monitoring for alien plants within the Development Footprint. | O&M Operator | Operation phase |

| Mitigation: Action/Control | Responsibility | Timeframe |
|---|---|---|
| When alien plants are detected, these must be controlled and cleared using the recommended control measures for each species to ensure that the problem is not exacerbated or does not re-occur and increase to problematic levels. Clearing methods must aim to keep disturbance to a minimum. The use of herbicides should be avoided as far as possible. | O&M Operator | Operation phase |
| Annual site inspection for erosion with follow up remedial action where problems are identified. | Specialist | Annual monitoring until successful re-establishment of vegetation in an area |
| No planting or importing any listed invasive alien plant species (all Category 1a, 1b and 2 invasive species) to the site for landscaping, rehabilitation or any other purpose must be undertaken. | O&M Operator | Operation phase |
| All alien plant re-growth must be monitored, and should these alien plants reoccur these plants should be re-eradicated. The scale of the development does however not warrant the use of a Landscape Architect and / or Landscape Contractor. | O&M Operator | Operation phase |
| Vegetation control within the Development Footprint should be by manual clearing and herbicides should not be used except to control alien plants in the prescribed manner if necessary. | O&M Operator Specialist | Operation phase |
| The use of herbicides and other related horticultural chemicals should be carefully controlled and only applied by personnel adequately certified to apply pesticides and herbicides. It must be ensured that WHO Recommended Classification of Pesticides by Hazard Class 1a (extremely hazardous) or 1b (highly hazardous) are not purchased, stored, or used on site along with any other nationally or internationally similarly restricted/banned products. | O&M Operator | Operation phase |

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| **Performance Indicator** | » For each alien species: number of plants and aerial cover of plants within the site and immediate surroundings. |
| **Monitoring** | » On-going monitoring of area by the Environmental Officer.<br>» Annual audit of development footprint and immediate surroundings by qualified botanist.<br>» If any alien invasive species are detected then the distribution of these must be mapped (GPS co-ordinates of plants or concentrations of plants), number of individuals (whole site or per unit area), age and/or size classes of plants and aerial cover of plants.<br>» The results must be interpreted in terms of the risk posed to sensitive habitats within and surrounding the site. |

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| | » The environmental manager/site agent must be responsible for driving this process.<br>» Reporting frequency depends on legal compliance framework. |

**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: CV OF THE EAP