

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



environmental affairs

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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 | <p>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.</p> <p>The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity.</p> <p>Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column.</p> <p>Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template is not required to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA.</p> <p>To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.</p> |
| | 2 | Site specific information | Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA |

| Part | Section | Heading | Content |
|------|---------|---|--|
| | | | <p>will comply with the pre-approved generic EMPr template contained in <u>Part B: Section 1</u>, 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 <u>Part C</u>.</p> <p>This section must be submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of <u>Part B: section 2</u> not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.</p> |
| C | | Site specific sensitivities/ attributes | <p>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 (<u>Part B: section 1</u>)</p> <p>This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if <u>Part C</u> is applicable to the site, it is required to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and must contain his/her name and expertise including a curriculum vitae. E USOnce</p> |

| Part | Section | Heading | Content |
|------|---------|------------|---|
| | | | <p>approved, Part C forms part of the EMPr for the site and is legally binding.</p> <p>This section applies only to additional impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in <u>Part B: section 1</u>.</p> |
| | | Appendix 1 | <p>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.</p> |

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 | Environmental Conservation Act No. 73 of 1989 |
| ECO | Environmental Control Officer |
| EA | Environmental Authorisation |
| EIA | Environmental Impact Assessment |
| ERAP | Emergency Response Action Plan |
| EMPr | Environmental Management Programme Report |
| EAP | Environmental Assessment Practitioner |
| FPA | Fire Protection Agency |
| HCS | Hazardous chemical Substance |
| NEMA | National Environmental Management Act, 1998 (Act No. 107 of 1998) |
| NEMBA | National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004) |
| NEMWA | National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) |
| MSDS | Material Safety Data Sheet |
| RI&AP's | Registered Interested and affected parties |

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

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

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

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

| Responsible Person(s) | Role and Responsibilities |
|-------------------------------------|--|
| Developer Site Supervisor (DSS) | <p><u>Role</u> The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report. |
| Environmental Control Officer (ECO) | <p><u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPr.</p> <p>The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested & Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the</p> |

| Responsible Person(s) | Role and Responsibilities |
|-----------------------|--|
| | <p>Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required.</p> <p><u>Responsibilities</u></p> <p>The responsibilities of the ECO will include the following:</p> <ul style="list-style-type: none"> - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; |

| Responsible Person(s) | Role and Responsibilities |
|--|---|
| | <ul style="list-style-type: none"> - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders. |
| <p>developer Environmental Officer (dEO)</p> | <p><u>Role</u></p> <p>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.</p> <p><u>Responsibilities</u></p> <ul style="list-style-type: none"> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; |

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

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

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 contractor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|--|--------------------|---------------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – All staff must receive environmental awareness training prior to commencement of the activities; | ECO/cEO/dEO | Environmental awareness training workshops must be held. | Pre-construction Construction, and construction phase (for new personnel) | ECO | Monthly and as required. | Attendance register and proof of training materials. |
| – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; | Contractor | Training sessions must be arranged to align with the construction programmes. | Pre-construction Construction, and construction phase (for new personnel) | ECO | Monthly and as required. | Attendance register. |
| – Refresher environmental awareness training is available as and when required; | cEO / dEO in consultation with the ECO | Refresher awareness training sessions must be held. | Construction phase | ECO | Monthly and as required. | Attendance register and proof of training materials. |
| – 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 | Training workshops to be held with staff to inform staff of the conditions and controls linked to the EA and EMPr, and to make staff aware of their individual roles and responsibilities in achieving compliance with | Construction phase | ECO | Monthly and as required. | Attendance register and proof of training materials. |

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------------|--|--|--------------------|---|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | the EA and EMPr. The EMPr & EA must be made available to all staff. | | | | |
| <ul style="list-style-type: none"> - The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: <ul style="list-style-type: none"> a) Safety notifications; and b) No littering. | Contractor | Produce posters and place them at appropriate, well-trafficked locations. | Pre-construction | ECO | Monthly | Photographic record within the ECO Report. |
| <ul style="list-style-type: none"> - Environmental awareness training must include as a minimum the following: <ul style="list-style-type: none"> a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; | ECO cEO / dEO | Environmental awareness training must be developed with sufficient, understandable content and presented and distributed accordingly. | Pre-construction and throughout construction. | ECO | Prior to commencement of the Environmental training. | Proof of training materials. |

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|------------------------|---|--------------------------------------|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention. | | | | | | |
| <ul style="list-style-type: none"> - A record of all environmental awareness training courses undertaken as part of the EMPr must be available; | cEO / dEO / cEO | All training materials used and proof of training (attendance registers) must be filed and kept on site. | Construction phase | ECO | Monthly | Filing system with all materials and proof of training. |
| <ul style="list-style-type: none"> - Educate workers on the dangers of open and/or unattended fires; | cEO / dEO / ECO | This must form part of the content of the Environmental Awareness training. | Pre-construction Construction | ECO | Monthly | Attendance register must be signed at the training. |
| <ul style="list-style-type: none"> - A staff attendance register of all staff to have received environmental | cEO / dEO / ECO | Attendance registers must be filed. | Construction phase | ECO | Monthly | Filing system of all attendees registers. |

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|------------------------|--|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| awareness training must be available. | | | | | | |
| – Course material must be available and presented in appropriate languages that all staff can understand. | cEO / dEO / ECO | Training material must be made available on site and all material must be in an appropriate language for all staff. | Construction phase | ECO | Monthly | Awareness training materials must be available on site. The attendance register must indicate the language used during the training. |

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|-----------------------------|--|--|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> 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 | Compile an appropriate method statement. | Pre-construction & Construction | ECO | Monthly | Copy of method statement available on site, and submitted to ECO. |
| <ul style="list-style-type: none"> Location of camps must be within approved area to ensure that the site does not impact on sensitive areas | DPM & Contractor | Placement of the camps must be outside of sensitive areas identified during the | Pre-construction & Construction | ECO | Monthly | Site layout indicating location of camps outside |

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---|---|--|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| identified in the environmental assessment or site walk through; | | Environmental Authorisation process. | | | | of sensitive areas. |
| – Sites must be located where possible on previously disturbed areas; | DPM | Sites must be placed on previously disturbed areas as far as possible. | Pre-construction & Construction | ECO | Monthly | Site layout plan, and environmental sensitivity map. |
| – The camp must be fenced in accordance with Section 5.5: Fencing and gate installation ; and | DPM & Contractor | Fencing aspects must be as per Section 5.5: Fencing and gate installation. | Pre-construction & Construction | ECO | Monthly | Camp fenced in line with Section 5.5: Fencing and gate installation. Photographic record. |
| – The use of existing accommodation for contractor staff, where possible, is encouraged. | Not Applicable. No existing accommodation is located on the site and no new accommodation facilities would be required. Staff would stay within the town of De Aar or Philipstown town, situated close to the proposed site. | | | | | |

5.3 Access restricted areas

| Impact management outcome: Access to restricted areas prevented. | | | | | | |
|--|--|--|--|-------------------------|--|--|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> – 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 ECO | Identify and document access restricted areas or specific requirements of affected landowners, if any. | Pre-construction | cEO ECO | Once-off, prior to construction Monthly, or when required | Restricted areas are identified using the Environmental Application and Report to identify these areas. |
| <ul style="list-style-type: none"> – Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and | DSS/ Contractor/ cEO | Demarcate restricted access areas with a temporary barrier and maintain the demarcation and signage for the construction phase. | Pre-construction & construction | ECO | Monthly, or as required. | Clear demarcation and signage around areas of restricted access. Photographic evidence. |
| <ul style="list-style-type: none"> – Unauthorised access and development related activity inside access restricted areas is prohibited. | Contrator/ dEO/ cEO | Demarcate restricted access areas with a temporary barrier and | Construction phase | ECO | Monthly or as required. | Compliance with the restricted |

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 |
| | | maintain the demarcation and signage for the construction phase. | | | | access areas must be reported on in the Environmental Compliance Reporting. |

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 formalised and signed by the DPM, Contractor and landowner before commencing with the activities; | DPM Contractor | Access agreements to be compiled. Access agreements to be signed by affected landowners before commencement of construction. | Pre-construction | cEO & ECO | Once-off, prior to construction | Signed agreements with affected landowners. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|--|--------------------------|---|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> 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 | Maintain road conditions, when and where required. | Continuously throughout all phases. | cEO ECO | On-going Monthly | Photographic evidence of road conditions throughout all phases. |
| <ul style="list-style-type: none"> All contractors must be made aware of all these access routes. | dEO / cEO | Contractors must be provided with a map of all access roads. | Pre-construction Construction Operation | ECO | As required i.e. when new contactors come to site. | Access roads map must be readily available. |
| <ul style="list-style-type: none"> Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; | Contractor | Deviations from the access routes must be closed and re-vegetated immediately. | Construction Operation (when required) | cEO & ECO | Ongoing Monthly (or as required) | Photographic evidence of before and after rehabilitation must be obtained and filed. |
| <ul style="list-style-type: none"> Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads; | Contractor | Deviating from the access roads must be limited as far as possible. | Construction Operation | cEO ECO | Ongoing Monthly | Any deviations recorded with photographs. Rectification photographs must also be taken. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--|---|--|--------------------------|--|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> - 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; | DPM/ Contractor dEO / cEO | Photographic record (in accordance with section 4.9: photographic record) of private roads, before and after use. Condition of private road agreed by landowner, the DPM and Contractor, prior to use. | Pre-Construction & Construction phase | cEO ECO | Ongoing Prior to road use and after road use. | Photographic record of the roads before and after use. Proof of agreement by the landowner, DMP & Contractor on road condition. |
| <ul style="list-style-type: none"> - Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands | DPM & Contractor | Design access road routes to follow fence lines and tree belts, where possible. | Pre-construction | cEO ECO | Ongoing Once-off (prior to construction) | Map of access roads following fence lines and tree belts where possible. |
| <ul style="list-style-type: none"> - Access roads must only be developed on a pre-planned and approved roads. | DPM & Contractor | Construction of access roads on pre-planned and approved routes only. | Pre-construction & Construction | cEO ECO | Ongoing Monthly | 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 notify staff of the gates to be used to access the site. | Pre-construction Construction | cEO ECO | Ongoing Monthly | Existing gates used where possible. |
| – Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record; | dEO & Contractor | Existing and new gates must be recorded and documented as per the requirements of section 4.9. | Construction Phase | cEO ECO | Ongoing Monthly. | Photographic record (as per section 4.9.) to be kept of the existing and new gates. |
| – 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 | All gates to be fitted with locks and kept locked at all times. | Construction phase | cEO ECO | Ongoing Monthly | All gates to be locked and no complaints from landowners received regarding locking of gates. |
| – At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; | DPM/ dEO | Obtain approval for new gate(s) required, from affected landowners. New gate to be installed as per approval of the affected landowner. | Pre-construction Construction phase | cEO ECO | Once-off before construction and as required | Gate installed at a position agreed to by the landowner. |

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 |
| | | | | | during construction Monthly | |
| <ul style="list-style-type: none"> 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 | The bottom of the installed gate must be no more than 100 mm from the ground. | Construction Phase | cEO ECO | Ongoing Monthly | Bottom of gate must be no more than 100 mm from the ground. Photographic evidence |
| <ul style="list-style-type: none"> Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; | Contractor | Where required, a reinforced concrete sill must be installed beneath the gate. | Construction Phase | ECO | Monthly | Reinforced concrete sill installed beneath the gate when necessary. Photographic evidence |
| <ul style="list-style-type: none"> Original tension must be maintained in the fence wires; | Contractor | Original tension must be maintained in the fence wire. | Construction Phase | ECO | Monthly | The tension of the fence wires must be maintained at the same tension. |

| 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 |
| - All gates installed in electrified fencing must be re-electrified; | Contractor | Gates installed within electric fencing must be re-electrified. | Construction Phase | ECO | Monthly | Gates installed in electrified fencing re-electrified. |
| - All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities; | Contractor | Demarcation fencing and barriers must be assessed and maintained accordingly. | Construction phase | ECO | Monthly | A photographic record of the fencing and barriers in good condition must be obtained. |
| - Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where appropriate and would not cause harm to the sensitive flora; | Contractor cEO | Fencing must be installed around the site camp, including batching plants, hazardous storage areas and all 'No-Go' areas. | Early in the construction phase. | ECO | Monthly | Photographic record of appropriate fencing must be kept. |
| - Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner. | Contractor dEO / cEO | Obtain permission from the landowner before restricting movement of livestock. | Construction phase | ECO | Monthly | Proof of the landowner agreement must be kept of record, if applicable. |

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 |
| <ul style="list-style-type: none"> All fencing must be developed of high quality material bearing the SABS mark; | Contractor | Fencing must be developed using high quality material, approved by SABS. | Construction phase | ECO | Monthly | Fencing materials used must bear the SABS mark and/or documentary proof. |
| <ul style="list-style-type: none"> The use of razor wire as fencing must be avoided; | Contractor | No razor wire must be used for fencing. | Construction phase | ECO | Monthly | No razor wire must be used for fencing. |
| <ul style="list-style-type: none"> 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; | Contractor | Fenced areas with gate access must be locked after hours, on weekends and during public holidays. Security company to provide site security services appointed and providing services at required times. | Construction phase | ECO | Monthly | Fenced areas with gate access locked after hours, on weekends and during public holidays. Security company appointed and servicing site, as required. |
| <ul style="list-style-type: none"> On completion of the development phase all temporary fences are to be removed; | Contractor | All temporary fencing removed. | Construction phase | ECO | At end of construction phase. | No temporary fences remain after construction |

| 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 |
| | | | | | | has been completed. Photographic evidence. |
| <ul style="list-style-type: none"> 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 | All fence uprights must be removed in their entirety. | Construction phase | ECO | At the end of the construction period. | No fence uprights left on site. |

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 |
| <ul style="list-style-type: none"> All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; | DPM / Contractor / dEO / cEO and ECO. | | | | | |
| <ul style="list-style-type: none"> The Contractor must ensure the following: <ol style="list-style-type: none"> The vehicle abstracting water from a river does not enter or cross it | Not applicable. No water will be abstracted from rivers or streams as part of the proposed development. | | | | | |

| 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 |
| <p>and does not operate from within the river;</p> <p>b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and</p> <p>c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.</p> | | | | | | |
| <p>– Ensure water conservation is being practiced by:</p> <p>a. Minimising water use during cleaning of equipment;</p> <p>b. Undertaking regular audits of water systems; and</p> <p>c. Including a discussion on water usage and conservation during environmental awareness training.</p> <p>d. The use of grey water is encouraged.</p> | <p>Contractor / cEO dEO</p> | <p>Ensure that the specified water conservation practices are being undertaken on site.</p> | <p>Construction</p> | <p>ECO</p> | <p>Monthly</p> | <p>Verification on site; Proof of audits of water systems and/or water usage; Proof of environmental awareness materials</p> |

5.7 Storm and waste water management

| Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided. | | | | | | |
|--|---------------------------|---|------------------------------|--------------------|----------------------------|---|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> 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 strict control mechanisms for runoff of contaminated water and an appropriate system to dispose of contaminated water (as per an approved Method Statement). | Construction phase | cEO ECO | Ongoing Monthly | <p>No evidence of contaminated water mismanagement.</p> <p>Hazardous waste removal slips, where required. Photographic evidence</p> |
| <ul style="list-style-type: none"> 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 | Appropriate absorbent material must be used to soak up oil spills on concrete surfaces and the material must be disposed of appropriately (at a licensed waste disposal facility). | Construction phase | cEO ECO | Ongoing Monthly | <p>Absorbent material available on site. No evidence of oil spills that have not been managed appropriately</p> <p>Proof of disposal at licensed waste disposal site</p> |

| 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 |
| | | | | | | (e.g. disposal slips) |
| – Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO; | DPM & Contractor in consultation with ECO | The DPM and ECO must determine whether clean water can be discharged directly into watercourses. | Construction phase | ECO | Monthly (or as required) | Proof of discussions between the DPM & ECO. |
| – Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO. | DPM, in consultation with ECO | The DPM and ECO must determine whether settled water can be released into the waterbody. If so, water must be freed of all sedimentation through a settlement pond, before release into the watercourse. | Construction phase | ECO | As required | Proof of discussions between the DPM & ECO, and photographic evidence of the settlement ponds. |

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 | Waste management must be undertaken with an integrated waste management approach (as per an approved Method Statement). | Construction phase | cEO ECO | Ongoing Monthly | Implementation of waste management plan and disposal receipts of responsible disposable. |
| – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; | Contractor | Covered waste collection bins (scavenger and weatherproof) must be provided on site. | Construction phase | cEO ECO | Ongoing Monthly | Covered waste collection bins (scavenger and weatherproof) evident on site. |
| – A suitably positioned and clearly demarcated waste collection site must be identified and provided; | DPM & Contractor | A site suitable for a waste collection site e.g. away from environmental sensitivities must be identified and clearly demarcated. Signage must also be installed at the identified site. | Construction phase | ECO | Once-off (prior to the commencement of construction) | A well-positioned waste collection point clearly demarcated. Photographic evidence. |
| – The waste collection site must be maintained in a clean and orderly manner; | Contractor | Waste collection site must be maintained and kept clean and orderly. | Construction phase | cEO ECO | Ongoing Monthly | A tidy, orderly waste collection site. No evidence of litter or waste on site. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---------------------------|---|--|--------------------|---------------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; | Contractor / cEO | Each waste type must be disposed of separately. To assist with this, bins must be clearly labelled (including images) to assist with this. | Construction phase | cEO ECO | Ongoing Monthly | Separate waste bins on site and no evidence of mixing waste types in bins. |
| – Staff must be trained in waste segregation; | cEO / dEO | Waste segregation must be included in the environmental awareness training. | Pre-construction Construction | ECO | Monthly and as required. | Documentary evidence that training materials include waste segregation. |
| – Bins must be emptied regularly; | Contractor cEO | Waste bins must be emptied on a regular basis, and not be allowed to overflow. | Construction | cEO ECO | Ongoing Monthly | Bins must not be overflowing with waste. |
| – General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; | Contractor cEO | General waste must be disposed of at a registered waste disposal site / recycling company. | Construction | cEO ECO | Ongoing Monthly | Disposal receipts from registered waste disposal sites must be kept on record. |
| – Hazardous waste must be disposed of at a registered waste disposal site; | Contractor cEO | Hazardous waste must be disposed of at a registered waste disposal site. | Construction | cEO ECO | Ongoing Monthly | Disposal receipts from registered waste disposal sites must be obtained and kept on record. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---------------------------|---|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Certificates of safe disposal for general, hazardous and recycled waste must be maintained. | Contractor cEO | Certificates / receipts of safe disposal of general, hazardous and recycled waste must be obtained and kept on record. | Construction | cEO ECO | Ongoing Monthly | Certificates / receipts of safe disposal of various wastes. |

5.9 Protection of watercourses and estuaries

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---------------------------|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; | Contractor cEO | No construction activities (and therefore no risk of direct and indirect spills of pollutants) are to be undertaken close to water bodies. The freshwater specialist's buffers around the freshwater features must be adhered to. | Construction phase | cEO ECO | Ongoing Monthly | No spillage of pollutants into watercourses reported on site, and no evidence of any spills. |
| – In the event of a spill, prompt action must be taken to clear the polluted or affected areas; | Contractor cEO | If a spill occurs, the polluted or affected area must be cleared up immediately. | Construction phase | cEO ECO | Ongoing Monthly | Information and feedback with respect to how the spill was cleaned |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | up must be documented and kept on file. Photographic evidence. |
| - Where possible, no development equipment must traverse any seasonal or permanent wetland | Contractor cEO | No equipment may be permitted to traverse any seasonal or permanent wetlands. | Construction phase | cEO ECO | Ongoing Monthly | No evidence of equipment traversing any seasonal or permanent wetland on site. |
| - No return flow into the estuaries must be allowed and no disturbance of the Estuarine Functional Zone should occur; | Not applicable – no estuaries occur in the project area. | | | | | |
| - Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available; | Contractor and cEO | Only authorized access roads must be used and/or developed. | Construction phase | cEO ECO | Ongoing Monthly | Only authorized access road routes used and/or developed. |
| - Existing crossing points must be favored over the creation of new crossings (including temporary access) | Contractor / cEO | Existing crossing points over watercourses must be used as far as possible. | Construction phase | cEO ECO | Ongoing Monthly | No evidence of unnecessary new tracks, when an |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|--|------------------------------|--------------------------|----------------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | existing track is nearby. |
| <ul style="list-style-type: none"> There must not be any impact on the long term morphological dynamics of watercourses or estuaries; | DPM Contractor cEO | The powerline must not have any impacts which change the long-term morphological dynamics of watercourses or estuaries. | Construction phase | cEO ECO | Ongoing Monthly | No impact incidents on the watercourses reported. |
| <ul style="list-style-type: none"> When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: <ul style="list-style-type: none"> a) Water levels during the period of construction; No altering of the bed, banks, course or characteristics of a watercourse b) During the execution of the works, appropriate measures to prevent pollution and contamination of the riparian environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, | Contractor cEO | When working in or near any watercourse or estuary, the specified environmental controls and considerations must be accommodated. | Construction phase | cEO ECO | Ongoing Monthly | No evidence of degradation to the waterbody and no incidents of damage to the waterbodies. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--------------------------|------------------------------|--------------------|-----------|------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the watercourse banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows. | | | | | | |

5.10 Vegetation clearing

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---------------------------|--|--|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| General: – Indigenous vegetation which does not interfere with the development must be left undisturbed; | Contractor and cEO | Areas of indigenous vegetation to be avoided must be demarcated before clearance is undertaken. | Pre-construction Construction Operation | cEO ECO | Ongoing Monthly | Areas of indigenous vegetation are demarcated |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|--------------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | and undisturbed. |
| <ul style="list-style-type: none"> Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; | Contractor, cEO | Areas containing protected or endangered species to be demarcated, to be avoided by construction activities, prior to vegetation clearance | Pre-construction Construction | cEO ECO | Ongoing Monthly | A No protected or endangered species have been damaged and/or removed, unless absolutely necessary (and only if the necessary permits have been obtained). |
| <ul style="list-style-type: none"> 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; | DPM and contractor in consultation with the relevant specialist. | Search and rescue must be undertaken by a suitably qualified relevant specialist, and replanting of the removed species must take place. A Plant Search and Rescue Plan/ Method Statement must be compiled to detail this process. | Pre- construction | ECO | Monthly | Implementation of Plant Search and Rescue Plan/ Method Statement. Photographic evidence and/or notes of the search and rescue must be |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---------------------------|---|---|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | taken and kept on record. |
| – Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed; | DPM dEO | If required, the relevant permits must be applied for and obtained from the relevant authority and kept on file. | Pre-construction (Prior to Search and Rescue). | cEO ECO | Ongoing Monthly | Permits must be kept on filed. |
| – The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; | ECO | Include details pertaining to the rescue and replanting of identified species in the Environmental Audit Report. | During the construction phase and at the completion of the construction phase. | ECO | As required. | The Environmental Audit Report contains details pertaining to the rescue and replanting of identified species. |
| – Trees felled due to construction must be documented and form part of the Environmental Audit Report; | ECO | The Audit Report must contain details of trees felled. | Construction Phase | ECO | As required. | The Audit Report must contain details of trees felled. |
| – Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; | Contractor cEO | Felled trees,, vegetation cuttings and debris must be disposed of appropriately and must not be placed | Construction Phase | cEO ECO | Ongoing Monthly | Rivers and watercourses must not have felled trees, vegetation |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|--|---|--------------------|---|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | within watercourses and rivers. | | | | cuttings or debris. |
| – Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; | DPM, dEO Contractor Maintenance Staff | Only a qualified pest control operator must be appointed. | Construction Phase Operation Phase | ECO dEO | Monthly/ as when use of herbicides is required | Proof of details of appointed registered pest control operator to be kept on file for audit purposes. |
| – A daily register must be kept of all relevant details of herbicide usage; | Contractor cEO | A daily register of all herbicide usage must be kept on site. | Construction Phase Operation Phase | ECO | Monthly | The register must be available for viewing on site. |
| – No herbicides must be used in estuaries; | Not applicable – there are no estuaries in the project 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 . Alien invasive vegetation must be removed and disposed of at a licensed waste management facility. | Contractor cEO | Protected species and sensitive vegetation must be clearly demarcated in accordance with Section 5.3. | Pre-construction | ECO | Monthly | Protected species and sensitive vegetation clearly demarcated in accordance with Section 5.3 Photographic evidence |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|-------------------------------|--|---------------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Servitude: <ul style="list-style-type: none"> Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager; | DPM, Contractor, cEO Operations & Maintenance team | Identify vegetation that needs to be trimmed. | Construction Operation | ECO Operations & Maintenance Team | Monthly | No evidence of unnecessary cutting or trimming of vegetation. Photographic evidence |
| <ul style="list-style-type: none"> Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the land owner and the EA holder | DPM Contractor, Operations & Maintenance Team | Width to be cleared must be in accordance with an agreement between the landowner and EA holder. | Construction Operation | ECO | As required. | Proof of agreement of width to be cleared must be kept on file. Proof must be provided that only agreed upon areas have been cleared. |
| <ul style="list-style-type: none"> Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and | Contractor cEO | Alien invasive vegetation must be removed in accordance with an Alien Invasive Management Plan. The vegetation must be | Construction Operation | ECO Operations & Maintenance Team | Monthly and as required. | Proof of removal of invasive alien vegetation as per alien invasive |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---|---|-------------------------------|--|-------------------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| disposed of at a recognised waste disposal facility; | | disposed of at a recognized waste disposal facility. | | | | management plan. Receipts of disposal from a registered waste disposal facility must be obtained and kept on record. |
| – Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280; | Contractor Operations & Maintenance Team | Where vegetation is likely to intrude on the MVCD before the next scheduled clearance, the vegetation must be trimmed. | Construction Operation | ECO Operations & Maintenance Team | Monthly, and/or as required. | Photographic/ documentary evidence |
| – Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation; | Contractor cEO Operations & Maintenance Team | Consult with the landowner whether they would like to retain the cut vegetation. If not, it must be disposed of at a recognised waste disposal facility. | Construction Operation | ECO Operations & Maintenance Team | As required. | Proof (receipts) must be obtained that the debris was disposed of at a recognized waste disposal facility or was kept by the landowner. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|--|--------------------|--|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered. | Contractor cEO Operations & Maintenance Team | Develop a procedure for the clearing of vegetation and the stringing process which limits the impact to the environment. | Pre-construction Construction | ECO | Once, prior to the commencement of construction | Proof of the procedure used for clearing vegetation and stringing must be obtained. |

5.11 Protection of fauna

Impact management outcome: Disturbance to fauna is minimised.

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|-------------------------------|--|--------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| - No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; | dEO/cEO Contractor | Avoid interfering with or disturbing livestock, where possible. The landowner, or representative of the landowner must give written consent to interfere with livestock, if such interference is unavoidable. | Construction Phase0 | ECO | Monthly | Written consent by the landowner or a representative of the landowner. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--|---|--|---|---|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; | DPM dEO/cEO Contractor | Breeding sites identified by the avifaunal specialist must be taken into consideration when compiling the development programme. | Pre-construction | ECO | Once-off, (at commence ment of construction). | The develop- ment programme takes cognizance of bird breeding sites. |
| – 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 Contractor Operations & Maintenanc e Team | Breeding sites must be clearly indicated on a map of the site and all staff must be made aware of these areas. | Construction Operation | cEO ECO Operations & Maintenanc e Team | Ongoing Monthly Monthly during operation | Photographic evidence 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 Contractor Operations & Maintenanc e Team | The Basic Assessment Report and any other relevant information must be reviewed for any recommendations from the avian specialist to limit unnecessary disturbance of birds. | Pre-construction Construction Operation | cEO ECO Operations & Maintenanc e Team | Ongoing Monthly | Photographic/ documentary evidence of complying with the specialist's recommendati ons must be provided. |
| – 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; | Contractor dEO / cEO | Any animal dens that could be impacted by the development must be marked as “No-Go” areas. Poaching must not be tolerated at a; | Construction phase Operation | cEO ECO Operations & Maintenanc e Team | Ongoing Monthly | No incidence of poaching evident or reported. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|-----------------------------|---|--|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – No deliberate or intentional killing of fauna is allowed; | dEO/cEO Contractor | This must be included in the environmental awareness training and it must be ensured that all staff fully understand this. | Construction Operation | ECO | Monthly | No incidents of deliberate or intentional killing of fauna evident and/or reported. |
| – In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and | dEO / cEO Contractor | Where necessary, snake deterrents must be applied to the pylons of the powerline to prevent snakes moving up the pylons. | Pre-construction/ design Construction | ECO | Monthly | Photographic/ documentary evidence of snake deterrents on pylons. |
| – 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 & dEO | Permits must be obtained from relevant authorities for the removal and/or relocation of any Threatened or Protected species and/or protected fauna as listed according to NEMBA (Act No. 10 of 2004) and relevant provincial ordinances. | Pre-construction and construction phase | ECO | Monthly | Permits from the relevant authority/ie readily available, on file. |

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 |
| <ul style="list-style-type: none"> Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in Section 5.3: Access restricted areas; | DPM dEO/ cEO Contractor | Identify, demarcate and prevent impact to known sensitive heritage features in accordance with Section 5.3. | Pre-construction | ECO | Monthly | Avoidance of sensitive heritage features and photographic evidence of such. |
| <ul style="list-style-type: none"> Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; | cEO/ dEO/ Contractor | Construction staff to be educated (as part of the environmental awareness training) of the potential for archaeological and palaeontological finds in excavations, and what to do in the event of heritage resources being encountered/ uncovered. | Construction Phase | ECO | Monthly | Documentary/ photographic evidence. |
| <ul style="list-style-type: none"> 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. | cEO / dEO Contractor | All works must stop immediately if any human remains and/or other archaeological, palaeontological and historical material are uncovered. | Construction Phase | cEO ECO | Ongoing Monthly | Proof of work ceasing and appropriate procedure being followed. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--------------------------|------------------------------|--------------------|-----------|------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Sufficient time must be allowed to remove/collect such material before development recommences. | | | | | | |

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.; | Contractor | Assess the site for any potential dangers to the public. Demarcate and restrict access to these areas and where necessary, contact the local authority. | Construction | ECO | Monthly, and as required. | Dangerous areas clearly demarcated, with restricted access. |
| – All unattended open excavations must be adequately fenced or demarcated; | Contractor | Fence or demarcate open, unattended excavations. | Construction Phase | cEO ECO | Ongoing Monthly | Photographic evidence |
| – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; | Contractor | The areas with partly constructed towers and / or scaffolding must have restricted access. | Construction Phase | ECO | Monthly | On site verification Photographic evidence. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|-----------------------|--|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Ensure structures vulnerable to high winds are secured; | Contractor | Structures vulnerable to high winds must be secured appropriately. | Construction Phase | ECO | Monthly | No incidence of unstable structures due to high winds evident or reported. |
| – Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged. | Contractor DPM | Compile and maintain a public incidents and complaints register, and update, as required. | Construction Phase | ECO | Monthly | The incidents and complaints register must be up to date, and available on site. |

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 | If no ablution facilities are available on site, mobile chemical toilets must be | Construction Phase | ECO | Monthly | Photographic evidence |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|-------------------------|---|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | utilized and placed outside of environmentally sensitive areas. | | | | Record of chemical toilet service provider. |
| <ul style="list-style-type: none"> - 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 / cEO | This must be included in the environmental awareness training. | Construction | ECO | Monthly | Content of environmental awareness training materials. No evidence of non-compliance. |
| <ul style="list-style-type: none"> - Where mobile chemical toilets are required, the following must be ensured: <ul style="list-style-type: none"> a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMP; and d) Toilets have an external closing mechanism and are closed and | Contractor / cEO | All specified requirements, as per the Impact Management Actions, must be met. | Construction Phase | cEO ECO | Ongoing Monthly | Inspections of the toilets must be made to ensure all requirements are being met. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--|------------------------------|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <p>secured from the outside when not in use to prevent toilet paper from being blown out;</p> <p>e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;</p> <p>f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;</p> | | | | | | |
| <p>– A copy of the waste disposal certificates must be maintained.</p> | Contractor | Obtain a certificate / receipt from the waste disposal service provide when waste has been collected and disposed of. | Construction Phase | ECO | Monthly | Copies of waste certificates / receipts must be kept on file at site. |

5.15 Prevention of disease

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Undertake environmentally-friendly pest control in the camp area; | Contractor | If necessary, pest control must be undertaken in an environmentally-friendly manner. | Construction Phase | ECO | Monthly | Proof of pest control methods to be documented and kept on site by Contactor. Photographic evidence. |
| – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; | Contractor | This must be included in the environmental awareness training/ Contractors “Tool Box” talks. | Construction | ECO | Monthly | Environmental Awareness training materials/ evidence of content of Tool Box talk |
| – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; | Contractor | Placement of information posters on AIDS must be displayed in the Contractor Camp area. | Construction | ECO | Monthly | Photographic evidence |
| – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; | Contractor | The relevant information must be included in the environmental awareness training/ Contractors “Tool Box” talks, and must be made available at the site camp | Construction Phase | ECO | Monthly | Information and education relating to sexually transmitted diseases must be contained within the |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | training material. |
| – Free condoms must be made available to all staff on site at central points; | Contractor | Free condoms must be made available to all staff at appropriate places on the site, e.g. toilets, site camp. | Construction Phase | ECO | Monthly | Free condoms must be available at suitable locations on the site, e.g. toilets, or site camp. |
| – Medical support must be made available; | Contractor | Personnel trained in First Aid must always be on site and First Aid Kits must be located in strategic areas. | Construction Phase | ECO | Monthly | First Aid personnel must always be present on an active site. Up-to-date, full, First Aid kits must be available at various locations on site. |
| – Provide access to Voluntary HIV Testing and Counselling Services. | Contractor | HIV testing scheduling must be made available to all staff. Counselling must also be made available as an option. | Construction Phase | ECO | Monthly | Check there is an HIV testing schedule on site and that counselling is made |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---------------------------|--------------------|--------------------------|------------------------------|--------------------|-----------|-------------------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | available by the contractor. |

5.16 Emergency procedures

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|--|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; | Contractor | Compile an Emergency Response Action Plan (ERAP) | Pre-construction | ECO | Once-off, at the commencement of construction | ERAP compiled and available on site. |
| – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; | Contractor | Emergency Plan must contain the relevant detail. | Pre-construction | ECO | Once-off, at the commencement of construction | ERAP must contain the specified details. |
| – All staff must be made aware of emergency procedures as part of environmental awareness training; | Contractor | The ERAP must be covered in the environmental awareness training. | Construction phase | ECO | Once-off, at the commencement of construction | The ERAP must be covered in the environmental awareness training. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – The relevant local authority must be made aware of a fire as soon as it starts; | Contractor | The procedure to be followed in the event of a fire must be detailed within the ERAP, which must include making the relevant authority aware of the fire as soon as it has started. | Construction | ECO | Monthly | Evidence of the local authority being informed according to the ERAP. |
| – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section 5.17). | Contractor | During an emergency, mitigation measures must be implemented as per Section 5.17. | Construction | ECO | Monthly | The mitigation measures as per Section 5.17 have been adhered to. |

5.17 Hazardous substances

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|---|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic | Contractor | Use and storage of hazardous materials must not be used unless absolutely necessary. | Construction | cEO ECO | Ongoing Monthly | There must be a record of hazardous |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| alternatives substituted where possible; | | | | | | substances used. |
| – 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. | Construction | cEO ECO | Ongoing Monthly | Storage must be carried out as per the Method Statement. |
| – Containers must be clearly marked to indicate contents, quantities and safety requirements; | Contractor | Containers with hazardous materials must be clearly marked. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |
| – All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; | Contractor | All storage areas must be bunded and with a sufficient capacity to contain a spill / leak from the container. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |
| – Bunded areas to be suitably lined with a SABS approved liner; | Contractor | Bunded areas must be suitably lined with SABS approved liner. | Construction | ECO | Monthly | Photographs of bunded storage areas. |
| – An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; | Contractor | Compile and maintain an alphabetically-listed Hazardous Chemical Substance control sheet. | Construction | cEO ECO | Ongoing Monthly | The HCS must be available on site. |
| – All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS); | Contractor | Each hazardous chemical that will be used on site must have a Material Safety Data Sheet (MSDS). | Construction | cEO ECO | Ongoing Monthly | There must be a Material Safety Data Sheet for each hazardous |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | chemical on site. |
| – All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; | Contractor | Provide training to employees working with HCS. Employees must sign a training register. | Construction | cEO ECO | Ongoing Monthly | A training register must be available on site. |
| – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; | Contractor | Environmental training must be provided to these employees and the employees must be provided with personal protective equipment. | Construction | cEO ECO | Ongoing Monthly | The training register must be available on site and contain a list of all those who received the training. |
| – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowzers; | Contractor | Any dangerous fuel must be stored appropriately in storage tanks or in a bowser. | Construction | cEO ECO | Ongoing Monthly | Storage tanks for this purpose must be present on site and all fuel in site to be stored in these tanks. Photographic evidence |
| – The tanks/ bowzers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend | Contractor | Construct/install the appropriate bund design for tanks / bowzers on site. | Construction | cEO ECO | Ongoing Monthly | Bunds must be as described (correct capacity and |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| 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); | | | | | | lined appropriately. Photographic evidence. |
| – The floor of the bund must be sloped, draining to an oil separator; | Contractor | Ensure the bund floor is sloped, towards an oil separator. | Construction | cEO ECO | Ongoing Monthly | Bund floor must be sloped to an oil separator. Photographic evidence. |
| – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; | Contractor | An impermeable groundcover must be used where the storage area is refueled, and dispensing equipment must contain a drip tray in the appropriate position to catch potential spills/ drips. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence. No evidence of spills. |
| – All empty externally dirty drums must be stored on a drip tray or within a bunded area; | Contractor | Empty, externally dirty drums/ containers must be stored within a bund or on a drip tray. | Construction | cEO ECO | Ongoing Monthly | Externally dirty drums /containers stored within a bund or on a drip tray. Photographic evidence |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | No evidence of non-compliance |
| – No unauthorised access into the hazardous substances storage areas must be permitted; | Contractor | Develop a procedure/ Method Statement, detailing how access into the hazardous substances storage area will be controlled. Access to the area with hazardous substances must be restricted and carefully monitored. | Construction | cEO ECO | Ongoing Monthly | Documentary evidence of a procedure/ method statement for controlling access to hazardous substances storage area. |
| – No smoking must be allowed within the vicinity of the hazardous storage areas; | Contractor | Smoking must not be permitted within the vicinity of the hazardous storage areas. Signs must be erected near the area to remind staff of this. This must also be included in the environmental awareness training. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence. This content must also be evident within the awareness training material. |
| – Adequate fire-fighting equipment must be made available at all hazardous storage areas; | Contractor | Adequate fire fighting equipment must be available at all hazardous storage areas. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |
| – Where refueling away from the dedicated refueling station is | Contractor | Appropriate ground protection must be | Construction Phase | ECO | Weekly | There must be no evidence of |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---------------------------|---|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; | | positioned in such a way to avoid any spills onto the bare ground. | | | | non-compliance i.e. spills on the bare ground. Photographic evidence |
| – 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 cEO | A spill kit must be kept on site and must be of the size relevant to the activities involving the use of hazardous substances. | Construction | cEO ECO | Ongoing Monthly | An appropriately sized spill kit must be on site. Photographic evidence |
| – The responsible operator must have the required training to make use of the spill kit in emergency situations; | Contractor cEO | Training to use the spill kits must be provided to the responsible operator. | Construction | cEO ECO | Ongoing Monthly | Proof the responsible operators have received the necessary training.. |
| – An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; | Contractor cEO | Spill kits must be available and positioned in all areas where activities with hazardous materials are being undertaken. | Construction | cEO ECO | Ongoing Monthly | Appropriate numbers of spill kits present on site. Photographic evidence. |
| – 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 | Contractor | Contaminated soil must be collected in containers and stored in a suitable location before being disposed of as | Construction | cEO ECO | Ongoing Monthly | Photographic evidence Receipts from registered |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|-----------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and waste water management and 5.8 for solid and hazardous waste management . | | per the procedures described in Section 5.7 or Section 5.8. | | | | waste disposal service provider. |

5.18 Workshop, equipment maintenance and storage

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; | Contractor | All maintenance of vehicles and equipment must take place in the workshop area, as far as possible. | Construction | cEO ECO | Ongoing Monthly | Verification on site. No evidence of non-compliance |
| – During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. | Contractor | A drip tray must be placed in a position to prevent contamination of the ground when repairs or maintenance has to take place outside of the workshop. | Construction | cEO ECO | Ongoing Monthly | Evidence of the appropriate procedure followed. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|---------------------------|---|------------------------------|--------------------|----------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; | Contractor | Leaking equipment must be removed from site, or repaired immediately. | Construction | cEO ECO | Ongoing Monthly | Evidence of leaking equipment repaired or removed from site. |
| – Workshop areas must be monitored for oil and fuel spills; | Contractor | Workshop inspections must be undertaken, for oil or fuel spills. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence. |
| – Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; | Contractor cEO | A spill kit must be kept on site and must be of the size relevant to the activities involving the use of fuel and oil. | Construction | cEO ECO | Ongoing Monthly | An appropriately sized spill kit on site. Photographic evidence |
| – 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 there is a sloped bunded concrete slab to accommodate run-off from maintenance of vehicles in the workshop. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |
| – Water drainage from the workshop must be contained and managed in accordance Section 5.7: storm and waste water management. | Contractor | Ensure that water draining from the workshop is contained and managed in accordance with Section 5.7. | Construction | cEO ECO | Ongoing Monthly | Water drainage from the workshop conducted inline with Section 5.7. |

5.19 Batching plants

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Concrete mixing must be carried out on an impermeable surface; | Contractor | Ensure all mixing of concrete is done on an impermeable surface. This must be covered well in the awareness training. | Construction | cEO ECO | Ongoing Monthly | No evidence of non-compliance. i.e. no concrete on the bare ground. |
| – Batching plants areas must be fitted with a containment facility for the collection of cement laden water. | Contractor | Ensure batching plant areas are fitted with a containment facility to ensure cement laden water is collected. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |
| – Dirty water from the batching plant must be contained to prevent soil and groundwater contamination | Contractor | Ensure dirty water from the batching plant is contained to avoid contamination of the groundwater. | Construction | cEO ECO | Ongoing Monthly | No dirty water must be evident outside of the batching plant containment area. |
| – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; | Contractor | A designated area for bagged cement must be allocated as per the specifications (not close to watercourses). | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|--|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; | Contractor | Ensure there is a 'washout' facility. Water used at this facility must be limited. | Construction | cEO ECO | Ongoing Monthly | Washout facility in use and evidence of minimal water use. |
| – Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; | Contractor | Hardened concrete from the washout facility must be reused or disposed off via the appropriate disposal stream for hazardous waste. | Construction | cEO ECO | Ongoing Monthly | No build-up of hardened concrete at the washout facility. Receipts from a licensed disposal facility. |
| – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; | Contractor | If empty cement bags are stored on site, they must be securely closed with binding material and stored in an appropriate area. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence. |
| – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions) | Contractor | Sand and aggregates containing cement must be prevented from emitting dust by dampening or by another means. | Construction | cEO ECO | Ongoing Monthly | Photographic/ documentary proof. |
| – Any excess sand, stone and cement must be removed or reused from site on completion of construction | Contractor | All excess sand, stone and cement must be removed from site at the end of the construction period. | Construction phase. | ECO | Once-off, at construction site closure. | No excess sand, stone or cement |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| period and disposed at a registered disposal facility; | | | | | | remaining in site. Disposal certificate/ receipt from waste disposal facility. |
| – Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation. | Contractor | Ensure temporary fencing is installed around batching plants in line with Section 5.5. | Construction Phase | ECO | Monthly | Photographic proof |

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 | Investigate the best means of suppressing dust generation. In consultation with the ECO, implement a preferred method. | Construction | cEO ECO | Ongoing Monthly | Evidence of effective dust suppression. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---------------------------|--|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – 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 | Planning must be carried out for vegetation removal, as well as re-vegetation and stabilization. | Construction | ECO | Monthly | Evidence of plan to be provided. |
| – 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 working with erodible materials is not undertaken during times of high winds or when a visible dust plume is present. | Construction | cEO ECO | Ongoing Monthly | No evidence of non-compliance. 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 suitable recommendations. | Construction | ECO | N/A | N/A |
| – Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; | Contractor | Ensure stockpiles are located in sheltered areas or are covered appropriately to prevent being exposed to the wind. | Construction | cEO ECO | Ongoing Monthly | Soil stockpiles not exposed to erosive effects of the wind. Photographic evidence. |
| – Where erosion of stockpiles becomes a problem, erosion control | Contractor ECO | Implement erosion control measures as required by the ECO. | Construction | cEO ECO | Ongoing Monthly | Erosion control measures have been |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|---|---|------------------------------|--|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| measures must be implemented at the discretion of the ECO; | | | | | | implemented, as required by the ECO. |
| – Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; | Contractor Operations & Maintenance Team | Inform drivers of speed limits and place speed limit signs along roads, if required. | Construction | ECO Operations & Maintenance Team | Monthly | No public complaints relating to speeding. |
| – Straw stabilisation must be applied at a rate of one bale/10 m ² and harrowed into the top 100 mm of top material, for all completed earthworks; | Contractor | Straw stabilization, as specified must be undertaken. | Construction | ECO | Monthly | Photographic evidence. |
| – For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust. | Contractor | Implement dust suppression measures for large areas of excavation. | Construction | ECO | Monthly | Photographic evidence. No public complaints relating to dust. |

5.21 Blasting

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| - Any blasting activity must be conducted by a suitably licensed blasting contractor; and | Contractor | A licensed blasting contractor must be appointed for any blasting activities. | Construction | cEO ECO | Ongoing Monthly | Evidence of professional registration of the appointed blaster. |
| - Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site. | Contractor | Notify surrounding landowners, emergency services and site personnel of blasting activity 24 hours prior to the blasting activity. | Construction | cEO ECO | Ongoing Monthly | Proof of notification of surrounding landowners, emergency services and site personnel of blasting activity. |

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 |
| <ul style="list-style-type: none"> The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; | Contractor | Ensure noise levels are maintained at an acceptable level and limit use of sound amplification. | Construction | ECO | Monthly | No noise complaints on record. |
| <ul style="list-style-type: none"> All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained; | Contractor | Ensure vehicles and machinery are fitted with appropriate silencing technology and maintained accordingly. | Construction | ECO | Monthly | No noise complaints on record and vehicles and machinery fitted with appropriate silencing technology. |
| <ul style="list-style-type: none"> Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; | Contractor cEO | Ensure a public complaints register is kept on site. Provide transport to and from site on a daily basis for construction workers. | Construction | ECO | Monthly | Public complaints register kept on site. Proof of transport of construction workers. |
| <ul style="list-style-type: none"> 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 | Contractor | Develop a Code of Conduct for construction staff. Appropriate working hours must be determined for the site. | Construction | ECO | Monthly | A copy of the Code of Conduct must be present on site. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--------------------------|------------------------------|--------------------|-----------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management. | | | | | | No complaints regarding staff behavior in complaints register. |

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; | Contractor | Identify and demarcate smoking areas. Staff to informed of these areas during the environmental awareness training. | Construction | ECO | Monthly | Photographic evidence |
| – Firefighting equipment must be available on all vehicles located on site; | Contractor | Provide all site vehicles with firefighting equipment. | Construction | ECO | Monthly | Photographic evidence |
| – The local Fire Protection Agency (FPA) must be informed of construction activities; | Contractor | Inform the local FPA of construction activities | Construction | ECO | Once-off, at the commence | Documentary evidence. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|---|--------------------|--|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | ment of construction | |
| <ul style="list-style-type: none"> Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; | Contractor | Ensure the contact numbers for the FPA and emergency services are contained within the environmental awareness training. | Construction | ECO | Once-off, at commencement of construction | Awareness training material must contain contact numbers for the FPA and emergency services. |
| <ul style="list-style-type: none"> Two way swop of contact details between ECO and FPA. | ECO | ECO and FPA to swop contact details. | Construction (at commencement of construction) | N/A | N/A | N/A |

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 |
| <ul style="list-style-type: none"> All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored | Contractor | Identify and demarcate areas suitable for storing excavated materials. Ensure | Pre-construction & Construction | ECO | Monthly | Photographic evidence. No evidence of sensitive areas |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| appropriately on site in order to minimise impacts to watercourses and water bodies; | | these areas are used and maintained appropriately. | | | | used for storing excavation material. |
| – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; | Contractor | Monitoring stockpiled material for weeds and alien vegetation growth. | Construction | ECO | Monthly | No weeds or alien vegetation growth within the stockpiled materials. |
| – Topsoil stockpiles must not exceed 2 m in height; | Contractor | Ensure stockpiles do not exceed 2 m in height. | Construction | ECO | Monthly | Stockpiles must not exceed 2 m in height. |
| – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.); | Contractor | During strong winds and heavy rain, stockpiles must be covered by an appropriate material. | Construction | cEO ECO | Ongoing Monthly | Photographic evidence |
| – Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material. | Contractor | Ensure sandbags are placed at the base of stockpiles to prevent erosion of the material. | Construction | ECO | Monthly | Photographic evidence |

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 |
| <ul style="list-style-type: none"> 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 | During terracing, topsoil must be collected and stored appropriately for use during the rehabilitation process. | Construction | ECO | Monthly | Topsoil from terracing activities retained and used for rehabilitation purposes. |
| <ul style="list-style-type: none"> Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards; | Contractor | Identify terrace embankments and areas outside high voltage yards to be rehabilitated. Implement rehabilitation accordingly. | Post -construction Rehabilitation | ECO | Monthly | Photographic evidence |
| <ul style="list-style-type: none"> Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; | Contractor | Where slopes have been impacted by construction activities, they must be rehabilitated to prevent erosion. | Post-construction Rehabilitation | ECO | Weekly | Disturbed slopes rehabilitated appropriately. |
| <ul style="list-style-type: none"> 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 | Affected slopes must be stabilised according to the contract design and implemented effectively. | Post-construction Rehabilitation | ECO | Weekly | Sloped areas stabilized according to the contract design. |
| <ul style="list-style-type: none"> Rehabilitation of the disturbed areas must be managed in accordance with Section 5.35: Landscaping and rehabilitation; | Contractor | Rehabilitation of disturbed areas must be managed in accordance with Section 5.35 | Post-construction Rehabilitation | ECO | Weekly | Rehabilitation undertaken according to Section 5.35. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and | Contractor | Ensure excess spoil is disposed of at a recognized disposal site. | Construction | ECO | Monthly | Receipt of disposal from a registered disposal facility. |
| <ul style="list-style-type: none"> Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes. | Contractor | Where required, spoil must be used for landscaping purposes which must be undertaken according to the specifications. | Rehabilitation | ECO | Monthly | Use of spoil for landscaping purposes. |

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 |
| <ul style="list-style-type: none"> 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 | Ensure excess spoil is disposed of at a recognized disposal site or is used for backfilling purposes. | Construction | ECO | Monthly | Receipt of disposal from a registered disposal facility. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|-------------------------|---|--|--------------------|----------------------------------|---------------------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | | | | | No evidence of non-compliance. |
| – Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes; | Contractor | Use of spoil for landscaping purposes as per the described requirements. | Construction and Rehabilitation | ECO | Monthly | Photographic evidence. |
| – Management of equipment for excavation purposes must be undertaken in accordance with Section 5.18: Workshop, equipment maintenance and storage ; and | Contractor | Ensure the requirements of Section 5.18 are met when managing equipment for excavation purposed. | Construction | ECO | Monthly | Photographic evidence |
| – Hazardous substances spills from equipment must be managed in accordance with Section 5.17: Hazardous substances. | Contractor / cEO | Ensure spills of hazardous substances are managed according to Section 5.17. | Construction | ECO | Monthly, and as required. | Photographic evidence |

5.27 Installation of foundations, cable trenching and drainage systems

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

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Batching of cement to be undertaken in accordance with Section 5.19: Batching plants ; and | Contractor | Ensure cement batching is undertaken in accordance with Section 5.19 | Construction | ECO | Monthly | Photographic evidence |
| – Residual solid waste must be disposed of in accordance with Section 5.8: Solid waste and hazardous management . | Contractor | Ensure left-over cement is disposed of as per the specifications in Section 5.8. | Construction | ECO | Monthly | Evidence of residual cement being disposed of in accordance 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 | Ensure dust management is conducted in accordance with Section 5.20. | Construction | ECO | Weekly | Photographic evidence. |
| – Management of equipment used for installation must be conducted in accordance with Section 5.18: | Contractor | Ensure management of equipment used for installation is conducted in | Construction | ECO | Weekly | Management of equipment used for installation |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|-----------------------|--|------------------------------|--------------------|---------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Workshop, equipment maintenance and storage; | | accordance with Section 5.18. | | | | conducted in line with the requirement of Section 5.18. |
| – Management hazardous substances and any associated spills must be conducted in accordance with Section 5.17: Hazardous substances ; and | Contractor cEO | Ensure management of hazardous substances (and associated spills) are conducted in accordance with Section 5.17. | Construction | ECO | Weekly | Photographic evidence |
| – Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid waste and hazardous management. | Contractor | Ensure solid waste is recycled or disposed of in accordance with Section 5.8. | Construction | ECO | Weekly | Photographic evidence |

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 | Unused or left-over materials must not be left on site during steelwork assembly. | Construction | ECO | Weekly | No unused or left-over materials left on site. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|---|------------------------------|--------------------|----------------|------------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – 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 | Ensure that emergency repairs are managed in accordance with Section 5.18. | Construction | ECO | Monthly | Photographic evidence |

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 6.8: Solid waste and hazardous Management; | Contractor | Ensure that solid waste is recycled /disposed of in accordance with Section 6.8. | Construction | ECO | Ongoing Weekly | Disposal / recycling of solid waste in accordance with Section 6.8.. |
| – Management of equipment used for installation shall be conducted in accordance with Section 5.18: | Contractor | Equipment used for installation must be managed in accordance with Section 5.18. | Construction | ECO | Ongoing | Equipment used for installation managed |

| | | | | | | |
|--|-------------------|--|---------------------|------------|----------------|---|
| Workshop, equipment maintenance and storage; | | | | | | according to Section 5.18. |
| – Management hazardous substances and any associated spills shall be conducted in accordance with Section 5.17: Hazardous substances. | Contractor | Ensure that hazardous substances and associated spills are managed according to Section 5.17. | Construction | ECO | Ongoing | Hazardous substances and spills managed in accordance with 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 | Ensure that solid waste is recycled /disposed of in accordance with Section 6.8. | Construction | ECO | Ongoing | Disposal / recycling of solid waste in accordance with Section 6.8.. |

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; | Contractor/ dEO / cEO | Identify, develop and implement communication strategies to encourage communication from the public. | Pre-construction Construction | ECO | Monthly | Evidence of communication strategies being used for communication with the public. |
| - Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; | Contractor/ dEO / cEO | Develop and implement Grievance Mechanism to allow for a collaborative and constructive approach to conflict resolution during external stakeholder engagement. | Pre-construction Construction | ECO | Monthly | A Grievance Mechanism must be in place on site. There must be no complaints of poorly managed conflict. |
| - Sustain continuous communication and liaison with neighboring owners and residents | dEO, cEO / Contractor | Ensure that there is continuous communication and liaison with neighbouring owners and residents. | Pre-construction Construction | ECO | Monthly | Proof of communication with neighboring owners and residents. |
| - Create work and training opportunities for local stakeholders; and | DPM/ Contractor and dEO | Ensure work and training opportunities are created for local stakeholders i.e. employ local stakeholders, and provide up-skilling | Pre-construction Construction | ECO | Monthly | Record of local stakeholders employed and training sessions provided. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|------------------------|--|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | opportunities, wherever possible. | | | | |
| <ul style="list-style-type: none"> 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. | DPM, Contractor | Ensure that no staff (except security staff) stay over-night on the site. | Construction | ECO | Monthly | No staff staying over-night on site. |

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 |
| <ul style="list-style-type: none"> Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in sections 5.17: management of hazardous substances and 5.18 workshop, equipment maintenance and storage; | Contractor | Ensure that bunds are emptied according to the impact management actions included in Sections 5.17 and 5.18. | Construction | cEO & ECO | At temporary closure of site | Photographs of bunds emptied according to 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 |
| - Hazardous storage areas must be well ventilated; | Contractor | Areas containing hazardous materials must be well ventilated. | Construction | cEO & ECO | At temporary closure of site | Observation/ Photographic evidence |
| - Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; | Contractor / cEO | Ensure that all fire extinguishers have been serviced and are easily accessible. Service records must be filed and audited at the last service. | Construction | cEO & ECO | At temporary closure of site | Easily accessible fire extinguishers and service records available. |
| - Emergency and contact details must be displayed; | Contractor / cEO | Ensure that all emergency contact details are clearly displayed. | Construction | cEO & ECO | At temporary closure of site | Photographs of the clearly displayed contact details. |
| - Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; | Contractor | Discuss the temporary closure period with the security personnel and ensure they have a means i.e. a phone of contacting and /or be contacted by relevant management or emergency personnel. | Construction | cEO & ECO | At temporary closure of site | Proof of the discussion with the security personnel. |
| - Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; | Contractor | Undertake a thorough check of all potential night hazardous. | Construction | cEO & ECO | At temporary closure of site | Proof of checking all potential night hazards. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|------------------------|--|------------------------------|----------------------|-------------------------------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; | cEO /Contractor | Identify potential fire hazards on site and notify the local authority. | Construction | cEO & ECO | At temporary closure of site | Proof of notifying the local authority of potential fire hazards on site. |
| – Structures vulnerable to high winds must be secured; | Contractor | Identify and secure any high structures vulnerable to high winds. | Construction | cEO & ECO | At temporary closure of site | Photographs of secured structures. |
| – Wind and dust mitigation must be implemented; | Contractor | Implement dust and wind mitigation. | Construction | cEO & ECO | At temporary closure of site | Wind and dust mitigation implemented prior to site closure. |
| – Cement and materials stores must have been secured; | Contractor | Ensure that cement and other material stores are secured. | Construction | cEO & ECO | At temporary closure of site | Cement and materials stored securely before site closure. |
| – Toilets must have been emptied and secured; | Contractor | Toilets must be emptied and secured. | Construction | cEO & ECO | At temporary closure of site | Empty and secured toilets. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|----------------------|-------------------------------------|---------------------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| - Refuse bins must have been emptied and secured; | Contractor | Empty refuse bins and secure them. | Construction | cEO & ECO | At temporary closure of site | Empty and secured refuse bins. |
| - Drip trays must have been emptied and secured. | Contractor | Empty all drip trays and secure them. | Construction | cEO & ECO | At temporary closure of site | Empty and secured drip trays. |

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 | Equipment removed during the project stored in a responsible manner. | Pre-construction Construction | ECO | Monthly | Photographic evidence |
| - Oil containing equipment must be stored to prevent leaking or be stored on drip trays; | Contractor | Oil containers stored on drip trays or another appropriate way. | Construction | ECO | Monthly | Photographic evidence |
| - All scrap steel must be stacked neatly and any disused and broken | Contractor | Scrap steel stacked neatly. Disused and broken | Construction | ECO | Ongoing | Photographic evidence. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|----------------------------|--|------------------------------|--------------------|---|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| insulators must be stored in containers; | | insulators stored in containers. | | | | |
| – 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; | Disposal contractor | Equipment containing pollutants dismantled and transported in a manner that prevents spillage and pollution of the environment. | Construction | ECO | When required i.e. when material is being prepped for removal. | Photographic evidence |
| – The Contractor must also be equipped to contain and clean up any pollution causing spills; and | Disposal contractor | A spill kit readily available (within disposal vehicle) for use. | Construction | ECO | When required i.e., before removal of material commences. | Complete spill kit in the disposal vehicle. |
| – Disposal of unusable material must be at a licensed waste disposal site. | Contractor | Unusable material disposed of at a licensed waste disposal site. | Construction | ECO | Monthly | Disposal receipts on site from 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 |
| <ul style="list-style-type: none"> All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided | Contractor | <p>Ensure that all areas that have been disturbed by construction activities must receive landscaping and rehabilitation.</p> <p>All waste and spoil must be disposed of at registered waste facility and receipts of disposal obtained.</p> | Construction | ECO | Monthly | All areas affected by the construction process have been landscaped and rehabilitated Waste disposal receipts available on file. |
| <ul style="list-style-type: none"> All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983 | Contractor | Assess all slopes on site and identify those that require contouring in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983. | Construction | ECO | Monthly | All slopes assessed and contoured where deemed necessary. |
| <ul style="list-style-type: none"> All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; | Contractor | Assess all slopes on site and identify those that require terracing in accordance with the Conservation of | Construction phase | ECO | Monthly | All slopes assessed and terraced where deemed necessary. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|---|------------------------------|--------------------|----------------|---|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | Agricultural Resources Act, No 43 of 1983. | | | | |
| – Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; | Contractor | All berms created must have a slope of 1:4 and must be replanted with indigenous plants from the area. | Construction phase | ECO | Monthly | Berms to have a slope of 1:4 and must be planted with indigenous plants from the area. |
| – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; | Contractor | When required, consult with the EA holder and the landowner whether the access roads across farmlands can be rehabilitated by ripping. | Construction phase | ECO | Monthly | Proof of consultation with the EA holder and landowner. |
| – Rehabilitation of access roads outside of farmland; | Contractor | Ensure that the tower sites and access roads outside of farmlands are rehabilitated. | Construction phase | ECO | Monthly | Before and after photographs of rehabilitation of tower sites and access roads. |
| – Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition; | Contractor | Indigenous species, common to the area must be used in the rehabilitation process. | Construction phase | ECO | Monthly | Use of indigenous species for rehabilitation. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--|------------------------------|--------------------|-----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| – Stockpiled topsoil must be used for rehabilitation (refer to Section 5.24: Stockpiling and stockpiled areas); | Contractor | Stockpiled topsoil must be used for rehabilitation. | Construction phase | ECO | Monthly | Photographic evidence |
| – Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; | Contractor | Topsoil must be evenly spread when used in rehabilitation processes. | Construction | ECO | Monthly | Topsoil evenly spread out. |
| – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; | Contractor | Ensure that all weeds are removed from the topsoil and the area where the topsoil is to be placed, before applying the topsoil. | Construction phase | ECO | Monthly | No visible weeds in the topsoil or in the area where the topsoil is to be placed. |
| – Subsoil must be ripped before topsoil is placed; | Contractor | Rip the subsoil before topsoil is placed. | Construction phase | ECO | Monthly | Observation and/or photographic evidence. |
| – The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; | Contractor | Rehabilitation must be planned for the optimal time for vegetation establishment. | Construction phase | ECO | Monthly. | Rehabilitation undertaken during 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 | Where slopes have been impacted by construction activities, they must be rehabilitated to prevent erosion. | Construction phase | ECO | Monthly | Disturbed slopes rehabilitated appropriately. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|--|--------------------|--|------------------------------|--------------------|----------------|--|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <ul style="list-style-type: none"> 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 | Affected slopes must be stabilised according to the contract design and implemented effectively. | Construction | ECO | Monthly | Sloped areas stabilised according to the contract design. |
| <ul style="list-style-type: none"> Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. | Contractor | Spoil can be used for backfilling processes provided that it is covered with 150 mm of topsoil. | Construction | ECO | Monthly | If spoil has been used for backfilling, it must be covered by 150 mm topsoil. |
| <ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; | Contractor | Where required, hydroseeding may be used for re-vegetating. The hydroseeding must be carried out as per the mixture specifications. | Construction | ECO | Monthly | Hydroseeding conducted in accordance with the mixture specifications. |

| Impact Management Actions | Implementation | | | Monitoring | | |
|---|--------------------|--------------------------|------------------------------|--------------------|-----------|------------------------|
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| e) The final product must not cause an ecological imbalance in the area | | | | | | |

6 ACCESS TO THE GENERIC EMPr

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

PART B: SECTION 2

7 SITE SPECIFIC INFORMATION AND DECLARATION

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

7.1.1 Details of the applicant:

| | |
|-------------------|--|
| Applicant name: | Mulilo De Aar 2 South (Pty) Ltd |
| Contact person: | Mr John Hamilton Cullum |
| Physical address: | Top Floor, Golf Park 4, Raapenberg Rd, Mowbray, Cape Town, 7700 |
| Postal address: | PostNet Suite #53 Private Bag X21 Howard Place 7405 |
| Email: | johnny@mulilo.com / andrew@mulilo.com |
| Telephone: | (021) 685 3240 |

7.1.2 Details and expertise of the EAP (that compiled the updated EMP):

| | |
|--|---|
| EAP name: | Nicole Holland |
| EAP qualifications: | BSc (Hons) Environmental and Geographical Science |
| Professional affiliation/ registration: | Registered with the South African Council for Natural Scientific Professions (SACNASP) (Reg No.: 400306/06). Environmental Assessment Practitioner (EAP) - Registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Reg No.: 2020/493) Member of the IAIA (International Association for Impact Assessment (Western Cape Branch)). (Curriculum Vitae included) |
| Physical address: | Unit B3C, Tokai Village, Vans Road, Tokai, Cape Town, 7945 |
| Postal address: | P.O. Box 31108, Tokai, Cape Town |
| Email: | nicole@hollandandassociates.net |
| Telephone: | 083 464 5246 |
| | |

7.1.3 Project name:

Establishment of a Wind Energy Facility situated on the eastern plateau (south) near De Aar, in the Northern Cape Province

7.1.4 Description of the project:

Mulilo Renewable Energy (Pty) Ltd (later updated to Mulilo De Aar 2 South (Pty) Ltd) applied for Environmental Authorisation from the Department of Environmental Affairs (DEA) in 2011 to establish a Wind Energy Facility (WEF) and associated infrastructure on the eastern plateau of De Aar (approximately 20 km to the east of the town). The EIA process for the proposed project was undertaken by Aurecon South Africa (Pty) Ltd in 2012 and Environmental Authorisation for the proposed project was granted by DEA on 1 March 2013.

The original EA for the project authorised 103 wind turbines with a potential capacity of 155 – 258MW and associated infrastructure. Amendments to the DEA (now DFFE) EA have been applied for by the Applicant, and granted by DFFE, in 2013, 2014, 2016, 2018, 2019, 2020 and 2021 respectively, including a change in the name of the holder of the EA, extensions of the EA validity period, amendments to Conditions of the EA, amendments to the project description and amendments to the turbine specifications.

The proposed final turbine layout for the project consists of up to 28 Wind Turbine Generator (WTG) positions (of which up to 26 would be developed) with a total capacity of 140 MW. The power generated by the project will be transmitted via internal 33 kV reticulation lines to the on site 132 kV collector sub station (i.e. the IPP substation) and then to the national grid via a proposed on-site Eskom Switching Station.

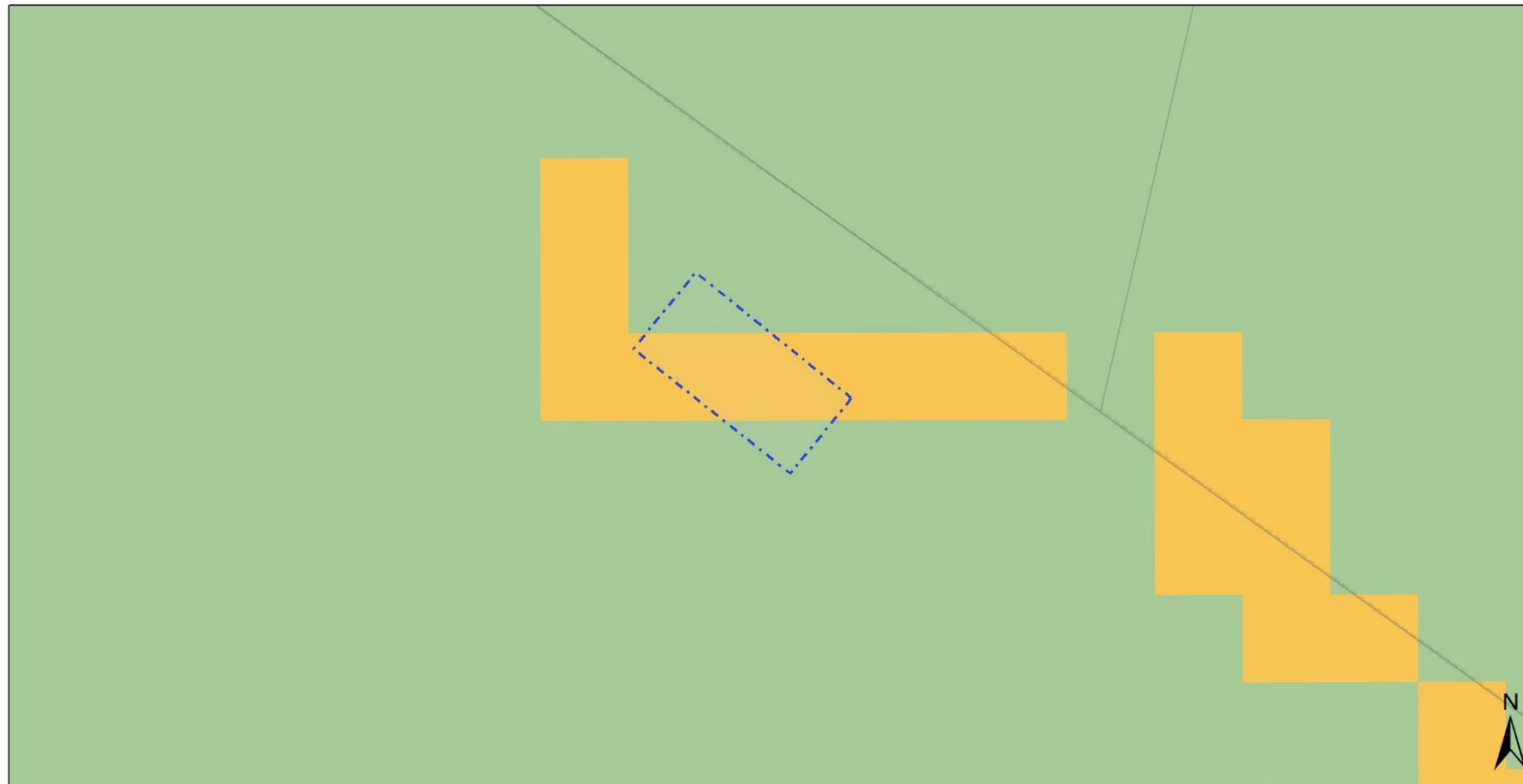
7.1.5 Project location:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Province: | Northern Cape | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| District Municipality: | Pixley ka Seme District Municipality | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Local Municipality: | Emthanjeni Municipality (substation) (Note: the entire WEF falls within Emthanjeni and Renosterberg Local Municipalities.) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ward number: | Ward 6 of Emthanjeni Municipality | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Affected properties: | The substation would be located on Remainder of Portion 2 of Farm 2, Slingers Hoek; | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SG 21 Digit Codes: | <table border="1"> <tr> <td>C</td><td>0</td><td>3</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>2</td><td>0</td><td>0</td><td>0</td><td>0</td><td>2</td> </tr> <tr> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td colspan="15"></td> </tr> </table> | C | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | |
| C | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nearest town: | De Aar | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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.zg/screeningtool>. The sensitivity map shall identify the nature of each sensitive feature e.g. threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features within 50 m from the development footprint.

Agricultural Sensitivity



2 August 2022

Legend

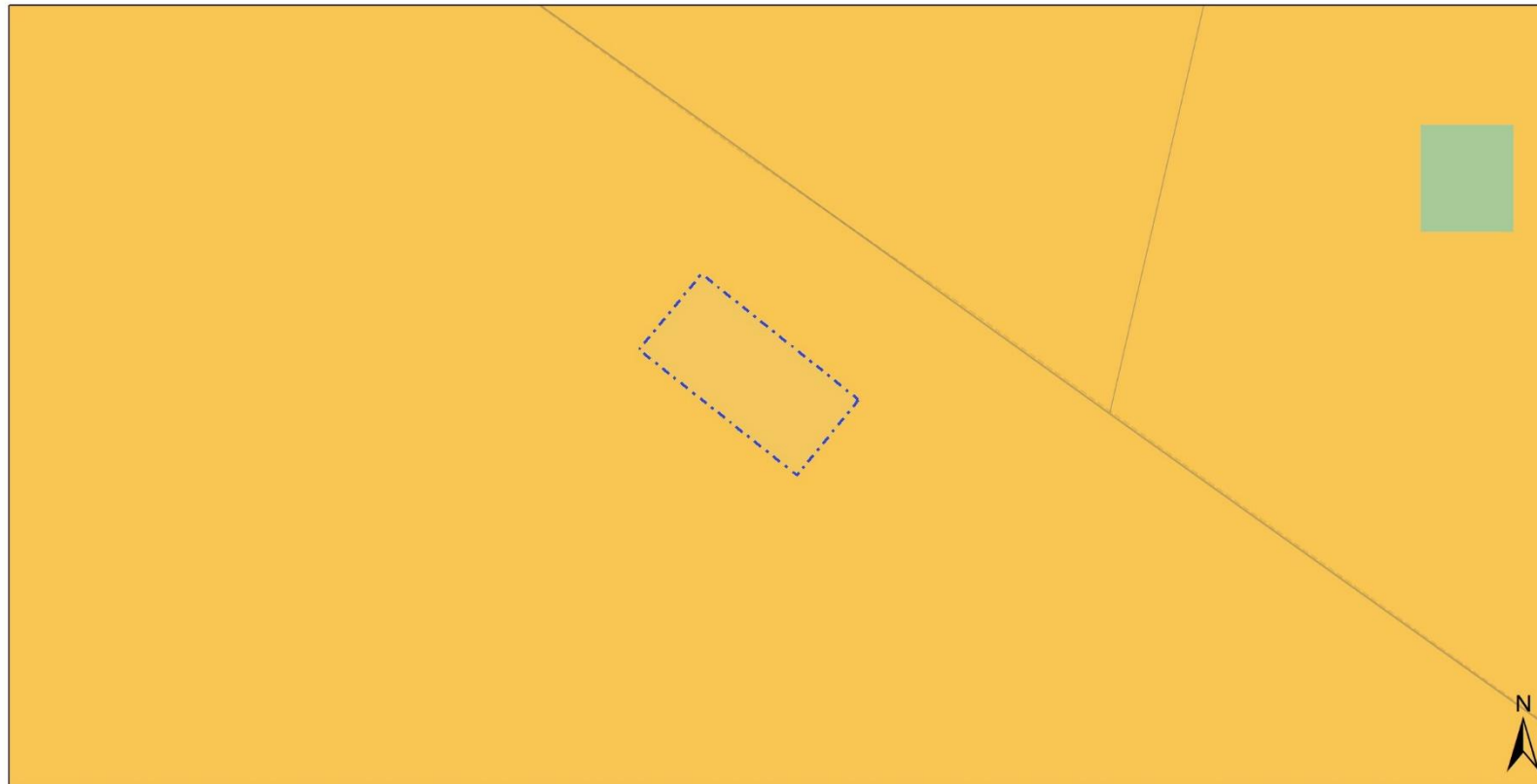
- | | | | |
|---------------------------------------|-----------------|---|-----|
| Site Area | Cadastre | Public Place | Low |
| EIA Application Development Footprint | Erven | Agriculture Combined Sensitivity | |
| EIA Application Site | Farm Portion | Very High | |
| National Jurisdiction Area | Farm | High | |
| | Agri Holding | Medium | |

0 0.225 0.45 km
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 1: Agricultural site sensitivity map of the substation (DFFE Screening Tool)

Animal Species Sensitivity



2 August 2022

Legend

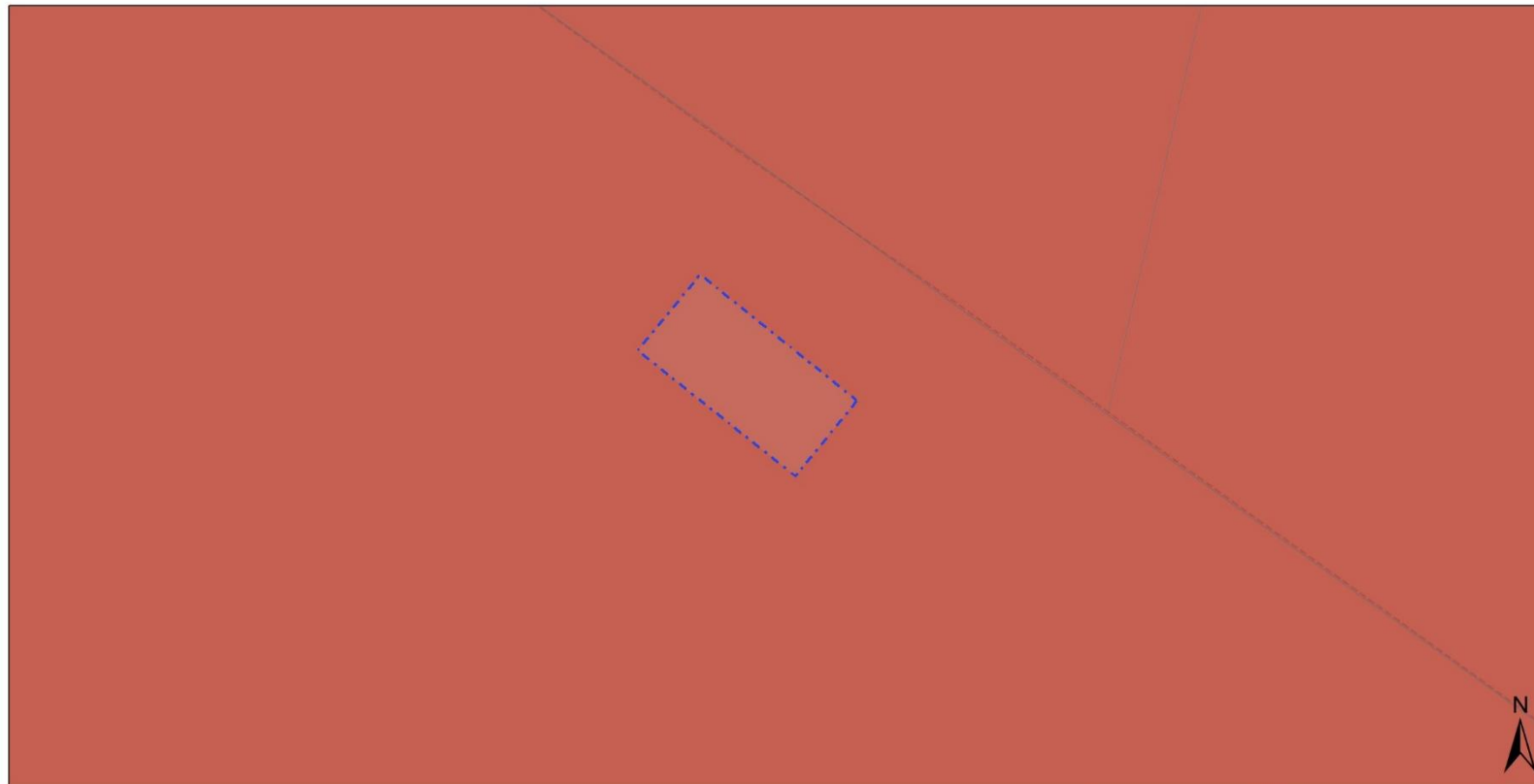
- | | | | |
|---------------------------------------|-----------------|--|-----|
| Site Area | Cadastre | Public Place | Low |
| EIA Application Development Footprint | Erven | Animal Species Combined Sensitivity | |
| EIA Application Site | Farm Portion | Very High | |
| National Jurisdiction Area | Farm | High | |
| | Agri Holding | Medium | |

0 0,225 0,45 km
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 2: Animal species site sensitivity map of the substation (DFFE Screening Tool).

Aquatic Biodiversity Sensitivity



2 August 2022

Legend

- | | | |
|---------------------------------------|------------------|--|
| Site Area | Cadastral | Public Place |
| EIA Application Development Footprint | Erven | Aquatic Biodiversity Combined Sensitivity |
| EIA Application Site | Farm Portion | Very High |
| National Jurisdiction Area | Farm | Low |
| | Agri Holding | |

0 0.225 0.45
 km
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 3: Aquatic Biodiversity site sensitivity map of the substation (DFFE Screening Tool).



2 August 2022

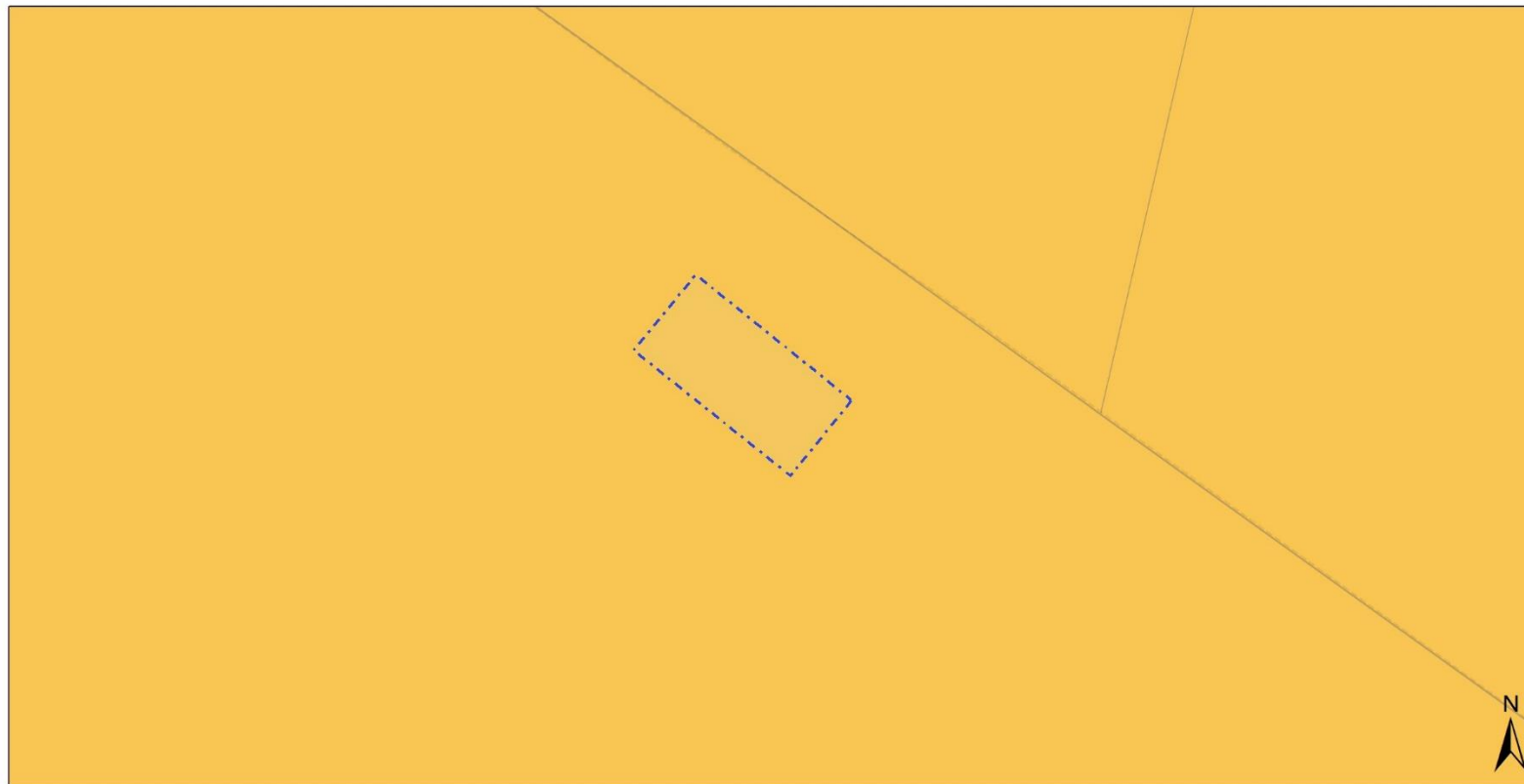
Legend

| | | | |
|---------------------------------------|-----------------|--|-----------|
| Site Area | Cadastre | Public Place | |
| EIA Application Development Footprint | Erven | Archaeological and Cultural Heritage Combined Sensitivity | |
| EIA Application Site | Farm Portion | | Very High |
| National Jurisdiction Area | Farm | | High |
| | Agri Holding | Low | |

0 0.225 0.45
 km
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGOC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 4: Archaeological and Cultural Heritage site sensitivity map of the substation (DFFE Screening Tool)



2 August 2022

Legend

- | | | | |
|---------------------------------------|------------------|--|-----|
| Site Area | Cadastral | Public Place | Low |
| EIA Application Development Footprint | Erven | Civil Aviation Combined Sensitivity | |
| EIA Application Site | Farm Portion | Very High | |
| National Jurisdiction Area | Farm | High | |
| | Agri Holding | Medium | |

0 0.225 0.45
 km
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 5: Civil Aviation site sensitivity map of the substation (DFFE Screening Tool).

Defence Sensitivity



2 August 2022

Legend

| | | | |
|---|--|--|---|
|  Site Area |  Erven |  Public Place |  Low |
|  EIA Application Development Footprint |  Farm Portion | Defence Combined Sensitivity | |
|  EIA Application Site |  Farm |  Very High | |
|  National Jurisdiction Area |  Agri Holding |  High | |
| | |  Medium | |

0 0.225 0.45 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 6: Defence site sensitivity map of the substation (DFFE Screening Tool).



2 August 2022

Legend

- | | | | |
|---------------------------------------|------------------|---|-----|
| Site Area | Cadastral | Public Place | Low |
| EIA Application Development Footprint | Erven | Palaeontology Combined Sensitivity | |
| EIA Application Site | Farm Portion | Very High | |
| National Jurisdiction Area | Farm | High | |
| | Agri Holding | Medium | |

0 0.225 0.45
 km
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 7: Palaeontology site sensitivity map of the substation (DFFE Screening Tool).



2 August 2022

Legend

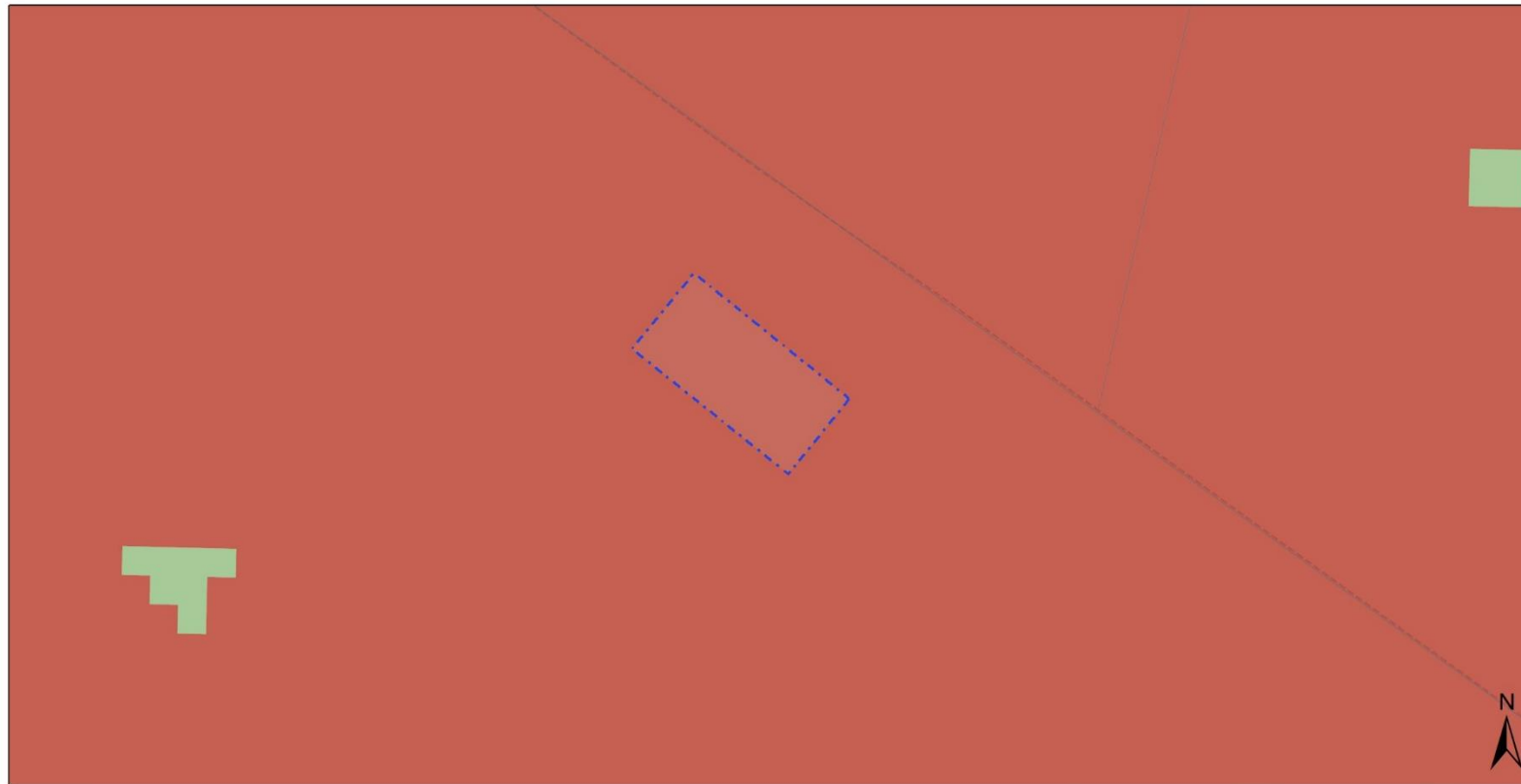
- | | | | |
|---------------------------------------|-----------------|---|-----|
| Site Area | Cadastre | Public Place | Low |
| EIA Application Development Footprint | Erven | Plant Species Combined Sensitivity | |
| EIA Application Site | Farm Portion | Very High | |
| National Jurisdiction Area | Farm | High | |
| | Agri Holding | Medium | |

0 0.225 0.45 km
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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Figure 8: Plant species site sensitivity map of the substation (DFFE Screening Tool).

Terrestrial Biodiversity Sensitivity



2 August 2022

Legend

- | | | |
|---------------------------------------|------------------|--|
| Site Area | Cadastral | Public Place |
| EIA Application Development Footprint | Erven | Terrestrial Biodiversity Combined Sensitivity |
| EIA Application Site | Farm Portion | Very High |
| National Jurisdiction Area | Farm | Low |
| | Agri Holding | |

0 0.225 0.45 km
 Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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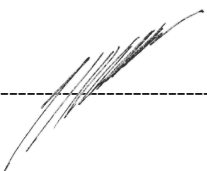
Figure 9: Terrestrial Biodiversity site sensitivity map of the substation (DFFE Screening Tool).

7.3 Sub-section 3: Declaration

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

Signature Proponent/applicant/ holder of EA

Date:



12/11/2022

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

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

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and 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.

8.1 Aquatic Impacts

| Impact management outcome: Potential impact on freshwater ecology as a result of the proposed infrastructure | | | | | | |
|--|----------------------------|---|------------------------------|--------------------|---|--|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Pre-Construction, Construction & Decommissioning Phase | | | | | | |
| Limit the disturbance of aquatic habitat. | <i>Project Manager/ECO</i> | Ensure final location of substation avoids watercourses and recommended buffers as far as possible; utilisation should be made of existing disturbed areas where possible; No stockpiling or dumping of rubble or waste associated with the construction works should take place within the aquatic features or the recommended buffers; Water consumption requirements for the site for the construction and operation of the site if not obtained from an authorised water user within the area, must be authorised by the DWS; and No liquid waste should be discharged into any of the | Preconstruction phase | ECO | Before commencement and during construction phase | Records of monitoring and adherence to implementations methods and mitigation measures |

| Impact management outcome: Potential impact on freshwater ecology as a result of the proposed infrastructure | | | | | | |
|--|---|--|---------------------------------------|--------------------|--|---|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | <p>aquatic features within the site without the approval of the DWS.</p> <p>Wastewater should be properly contained on-site and removed to a licensed wastewater treatment facility that is able to treat the wastewater.</p> | | | | |
| <p>Minimise potential to modify surface water runoff and increase the potential for erosion.</p> | <p>Project Manager/ Project engineer</p> | <p>A stormwater management plan should be compiled for the compacted surfaces within the substation site by the project engineer. Where necessary measures to dissipate flow intensity or protect erosion should be included in the plan. The plan should also mitigate any contaminated runoff from the construction and operation activities from being discharged into any of the aquatic features;</p> | <p>Pre-construction, construction</p> | <p>ECO</p> | <p>Before commencement and during construction phase</p> | <p>Records of monitoring and adherence to implementations methods and mitigation measures</p> |

| Impact management outcome: Potential impact on freshwater ecology as a result of the proposed infrastructure | | | | | | |
|--|--------------------|--|------------------------------|--------------------|-----------|------------------------|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| | | Adequate and erosion mitigation measures should be incorporated into design and implemented during construction. | | | | |

8.2 Heritage impacts

| Impact management outcome: Minimise potential impact on archaeology and graves of the proposed infrastructure | | | | | | |
|--|---------------------|--|------------------------------|--------------------|---------------------------|--|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Construction Phase | | | | | | |
| In the event of significant archaeological sites or material being encountered, the project archaeologist and SAHRA must be informed immediately so that mitigatory action can be determined and implemented, if necessary | Project Manager/ECO | Carry out general monitoring of excavations for artefacts and material of heritage importance. In the event of significant archaeological sites or material being encountered, inform the project archaeologist and SAHRA immediately, and implement any recommended mitigatory actions. | Construction phase | ECO | During construction phase | Records of monitoring and adherence to mitigation measures |
| In the event that human remains are encountered, the project archaeologist and SAHRA must be informed immediately so that mitigatory action can be determined and implemented, if necessary | Project Manager/ECO | Should human remains be encountered, work in the vicinity of the find must cease, and the remains must be left in situ but made secure until the appropriate mitigatory action has been determined. | Construction phase | ECO | During construction phase | Records of monitoring and adherence to mitigation measures |

8.3. Bat impacts

| Impact management outcome: Potential impact on bats of the proposed infrastructure | | | | | | |
|--|--|---|--|--|---|--|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Pre-Construction, Construction & Operational Phase | | | | | | |
| Ensure that stormwater runoff from the substation does not create artificial wetlands and open water sources in the turbine zones (less than 282.5m from any turbine base), as this will increase insect and bat activity around turbines. | Project Manager / ECO / Stormwater engineer | The storm water drainage plan must avoid creations of artificial ponds/open water sources or wetlands in turbine zones (less than 282.5m from any turbine base). | Planning and construction phases. Evidence of compliance during the operational phase. | ECO / Wind farm operations manager / Bat specialist doing the operational monitoring | Once after 1 year of operation. | It should be observed after one year of operation if the stormwater is creating any significant artificial open water sources or wetlands in turbine zones. |
| Operational Phase | | | | | | |
| Reduce light pollution at the substation, which can lead to increased insect activity and therefore increased bat activity on the wind farm. Which in turn can increase likelihood of bat mortalities. | Project Manager / ECO / Wind farm operations manager | 1) Use lights with low sensitivity motion sensors that switch off automatically when no persons are nearby, to prevent the creation of regular insect gathering pools, where practically possible | Operational phase | ECO / Wind farm operations manager / Bat specialist doing the operational monitoring | Annually, ongoing for the lifetime of the facility. | Annual visits to the substation at night must be conducted for the operational lifetime of the facility by operational staff of the facility, to assess the lighting setup and whether the passive motion sensors are functioning correctly. |

| | | | | | | |
|--|--|--|--|--|--|---|
| | | <p>without compromising security requirements.</p> <p>2) Floodlights should be down-hooded and where possible, lights with a colour (lighting temperature) that attract less insects should be used.</p> | | | | <p>The bat specialist conducting the operational bat mortality monitoring must conduct at least one visit to the substation during nighttime to assess the placement and setup of outside lights. When lights are replaced and maintenance on lights is conducted, this document must be consulted.</p> |
|--|--|--|--|--|--|---|

8.4. Noise impacts

| Impact management outcome: | | Potential noise impact on surrounding community | | | | |
|--|--------------------|---|------------------------------|------------------------------------|--|------------------------------|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Construction & Operational Phase | | | | | | |
| Should a reasonable and valid noise complaint be registered, the Developer should investigate the noise complaint as per the guidelines in sub-section 12.1 and 12.2. These guidelines should be used as a rough guideline as site-specific conditions may require that the monitoring locations, frequency or procedure be adapted. | Developer | Investigate the noise complaint as per the guidelines in sub-section 12.1. and 12.2 of the Noise Impact Assessment (September 2022) | Construction & operation | ECO / Wind farm operations manager | Monthly after the noise complaint has been received. . | No further noise complaints. |

8.5 Visual /Landscape impacts

| Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual). | | | | | | |
|--|-----------------------|---|------------------------------|--------------------|--|---|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Pre-Construction, Construction & Decommissioning Phase | | | | | | |
| Substation infrastructure, construction camps, batching plants and stockpiles to be located in visually unobtrusive areas, such as low-lying positions in the landscape, and prominent landforms or landscape features avoided. | Project manager / ECO | Preconstruction identification of suitable sites, checked against visual sensitivity mapping. | Preconstruction phase. | ECO | Before commencement of construction phase. | Adherence to visual impact assessment (VIA) recommendations and mitigation measures and EMPr. |
| Substation infrastructure, construction camps, batching plants and stockpilesto be located away from major arterial routes, district roads and passenger railway lines, Appropriate visual buffers or visual screening to be implemented. <u>Note:</u> berms are not favoured in arid areas | Project manager / ECO | Preconstruction identification of suitable sites, checked against visual sensitivity mapping. | Preconstruction phase. | ECO | Before commencement of construction phase. | Adherence to visual impact assessment (VIA) recommended mitigation measures and EMPr. |

| Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual). | | | | | | |
|---|-----------------------|--|------------------------------|--------------------|--|---|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| because of the potential increase in disturbed area and difficulty of rehabilitation. | | | | | | |
| Security and other outdoor lighting to be restricted to only that which is essential for the safe operation of the substation and construction activities. Lighting to be fixed to buildings where possible and fitted with reflectors directed downwards, to conceal the light source. | Project manager / ECO | Outdoor lighting plan to be agreed. | Preconstruction phase. | ECO | Before commencement of construction phase. | Adherence to visual impact assessment (VIA) recommended mitigation measures and EMPr. |
| On-site signage and construction signage to be restricted to that which is essential and to be visually discrete. Billboards and excessive trade signage to be prohibited, especially along arterial or scenic routes. | Project manager / ECO | Contract documentation / specification | Preconstruction phase. | ECO | Before commencement of construction phase. | Adherence to visual impact assessment (VIA) recommended mitigation measures and EMPr. |

| Impact management outcome: Minimise potential impacts of the proposed infrastructure on scenic resources and sensitive receptors (visual). | | | | | | |
|---|--------------------|--------------------------|------------------------------|--------------------|-----------|------------------------|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Signage to be fixed as low as possible, preferably against a backdrop, such as a building, wall or fence to minimise the visual clutter of free-standing poles, especially when these are visible on the skyline. | | | | | | |

8.6 Terrestrial Biodiversity Impacts

| Impact management outcome: Potential impact on flora and vegetation of the proposed infrastructure | | | | | | |
|---|-----------------------------------|--|-------------------------------------|--------------------|---|--|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| <p>Minimise vegetation clearing for access roads and other infrastructure to reduce impact on vegetation and protected plant species</p> | <p>Project Manager/ECO</p> | <p>1) Pre-construction walk-through of the authorised footprint area to microsite infrastructure such as access roads and to ensure that sensitive habitats and species are avoided, where possible. (Note: The Ecological Pre-construction Walkthrough Survey has been undertaken, and informed the finalisation of the Layout Plan, and is included in the EMPr for the project).</p> <p>2) Demarcate all areas to be cleared with construction tape or other appropriate and effective means. However, caution should be exercised to avoid using material that might entangle fauna.</p> | <p>Preconstruction phase</p> | <p>ECO</p> | <p>Before commencement and during construction phase</p> | <p>Records of monitoring and adherence to implementations methods and mitigation measures</p> |

| Impact management outcome: Potential impact on flora and vegetation of the proposed infrastructure | | | | | | |
|--|----------------------------|--|------------------------------|--------------------|---|---|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Restore disturbed areas outside of infrastructure footprint to functional condition | <i>Project Manager/ECO</i> | 1) Rehabilitate disturbed areas according to the Revegetation and Habitat Rehabilitation Management Plan | Construction & operation | ECO | During and after construction phase | Records of rehabilitation monitoring |
| Minimise impacts on protected plant species | Project Manager/ECO | 1) Rescue protected plant species according to the Revegetation and Habitat Rehabilitation Management Plan 2) Obtain permits for plants that will be destroyed. | Construction & operation | ECO | During and after construction phase | Records of monitoring of rescued plants |
| Minimise impacts on surrounding vegetation due to secondary impacts from invasive species | <i>Project Manager/ECO</i> | 1) Control alien invasive plant species according to the Alien Invasive Management Plan | Operation & decommissioning | ECO | After construction phase and during operational phase | Records of monitoring and clearing of invasive plants |
| Operational Phase | | | | | | |

| Impact management outcome: Potential impact on flora and vegetation of the proposed infrastructure | | | | | | |
|---|----------------------------|---|--|--------------------|--|--|
| Impact Management Actions | Implementation | | | Monitoring | | |
| | Responsible person | Method of implementation | Timeframe for implementation | Responsible person | Frequency | Evidence of compliance |
| Restore disturbed areas outside of infrastructure footprint to functional condition | Project Manager/ECO | 1) Rehabilitate disturbed areas according to the Revegetation and Habitat Rehabilitation Management Plan | Construction & operation | ECO | During and after construction phase | Records of rehabilitation monitoring |
| Minimise impacts on surrounding vegetation due to secondary impacts from invasive species | Project Manager/ECO | 1) Control alien invasive plant species according to the Alien Invasive Management Plan | Operation & decommissioning | ECO | After construction phase and during operational phase | Records of monitoring and clearing of invasive plants |

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: EMPR REQUIREMENTS (APPENDIX 4 OF THE 2014 EIA REGULATIONS, AS AMENDED)

Appendix 4

Content of environmental management programme (EMPr)

1. (1) An EMPr must comply with section 24N of the Act and include—
 - (a) details of—
 - (i) the EAP who prepared the EMPr; and
 - (ii) the expertise of that EAP to prepare an EMPr;
 - (b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
 - (c) a description of the impact management objectives, including management statements, identifying the impacts that need to be avoided, managed and/or mitigated as identified through the environmental impact assessment process for all phases of the development including—
 - (i) planning and design;
 - (ii) pre-construction activities;
 - (iii) construction activities;
 - (iii) where relevant operation activities; and
 - (iv) rehabilitation of the environment after construction and where applicable post closure;
 - (d) a description of impact management outcomes, identifying the standard of impact management required for the aspects contemplated in paragraph (c);
 - (e) a description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved, and may include actions to —
 - (i) modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
 - (ii) remedy the cause of pollution or degradation and migration of pollutants;

- (iii) comply with any prescribed environmental management standards or practices;
 - (iv) comply with any applicable provisions of the Act regarding closure, where applicable;
 - (v) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;
- (f) the method of monitoring the implementation of the impact management actions contemplated in paragraph (e);
 - (g) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (e);
 - (h) an indication of the persons who will be responsible for the implementation of the impact management actions;
 - (i) the time periods within which the impact management actions contemplated in paragraph (e) must be implemented;
 - (j) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (e);
 - (k) a program for reporting on compliance, taking into account the requirements as prescribed by these Regulations; and
 - (l) an environmental awareness plan describing the manner in which—
 - (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and
 - (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment.

(2) Where a proposed development and the geographical area within which it is located has been subjected to a pre-assessment using a spatial development tool, and the output of the pre-assessment in the form of a site specific development protocol has been adopted in the prescribed manner, the content of a EMPr may be determined by the adopted site specific development protocol applicable to the specific proposed development in the specific geographical area it is proposed in.

APPENDIX 3: CURRICULUM VITAE OF EAP

N L HOLLAND

CURRICULUM VITAE

Name : Nicole Holland (née Zimmermann)
Profession : Environmental Assessment Practitioner
Year of Birth : 1976
Nationality : South African
Contact Details : P.O. Box 31108, Tokai, 7966
Cell: 083 4645246
Fax: 086 762 612 (SA Only)
Email: nicole@hollandandassociates.net

Professional Registrations/ affiliations/ Memberships:

- Professional Environmental Scientist: South African Council for Natural Scientific Professions (Registration Number: 400306/06) (Environmental Scientist)
- Environmental Assessment Practitioner (EAP): Registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA) (Registration Number: 2020/493)
- Member: South African affiliate of the International Association for Impact Assessment (IAIASa)

Key Qualifications:

Nicole Holland has a Bachelor of Science (Hons) in Environmental and Geographical Science (UCT), specializing in Environmental Management. She has twenty years of experience in the environmental management field and has compiled and managed numerous environmental investigations including Environmental Impact Assessments, Environmental Management Plans/Programmes (EMP), waste management license application processes, as well as applications for amendments of Environmental Authorisations. Nicole has extensive experience in managing environmental authorisation processes including, amongst others, agricultural projects, water supply schemes and dams, renewable energy facilities, wastewater treatment works, housing and resort developments, cemeteries, road upgrades, pipelines, waste sites, and a cement manufacturing plant. Nicole has also undertaken the independent review of a number of Basic Assessment and Scoping and Environmental Impact Assessment Reports and has been involved in a broad spectrum of other environmental work including Environmental Auditing, the drafting of Environmental Management Programmes, and Environmental Control Officer work.

Summary of Relevant Project Experience:

EA Amendment Applications/ Amendment of EMP's for renewable energy projects:

- Wind Energy Facility on the Eastern Plateau (South) near De Aar, Northern Cape Province
- Springbok Wind Energy Facility, near Springbok, Northern Cape Province
- Longyuan Mulilo Maanhaarberg Wind Energy Facility near De Aar, Northern Cape Province
- Longyuan Mulilo De Aar 2 North Wind Energy Facility near De Aar, Northern Cape Province
- Namies Wind Energy Facility, near Aggenery, Northern Cape Province
- Overhead Transmission Line (Kronos) for the Kronos Photovoltaic Development near Copperton, Northern Cape Province
- Overhead Transmission Line (Caprum) for the Kronos Photovoltaic Development near Copperton, Northern Cape Province
- 10MW Augrabies PV Solar Energy Facility, Northern Cape Province
- 132kV Transmission line from De Aar 1 WEF to Hydra Substation, Northern Cape Province
- 132kV transmission line from the De Aar 2 North WEF to the Hydra Substation, Northern Cape Province
- 100MW De Aar PV3 (Badenhorst Dam), Northern Cape Province
- De Aar PV4 (19.9MW) facility, Northern Cape Province
- Proposed 75 – 150MW De Aar PV2 (Paarde Valley) facility, Northern Cape Province

Environmental Management Programmes, Environmental Compliance Monitoring &/or Auditing

- Amendment of the approved EMPr for the Wind Energy Facility on the Eastern Plateau (North) near De Aar, Northern Cape Province
- Amendment of the approved EMPr for the Longyuan Mulilo Maanhaarberg Wind Energy Facility near De Aar, Western Cape Province
- Proposed cultivation of virgin soil, construction of a dam and associated infrastructure on Portion 27 and Portion 17 of Farm No. 466, Scherpenheuvel, Western Cape Province
- Proposed raising of Ou Brakfontein Dam near Citrusdal, Western Cape Province
- Proposed upgrade of a low level bridge over the Olifants River, near Citrusdal, Western Cape Province
- Proposed raising of Ruimsig Dam and expansion of agricultural areas, on Remainder of Portion 56 and Portion 93 of the Farm De la Haye No. 92, Near De Doorns, Western Cape
- Proposed Kleinberg Dam Scheme, Hex Valley, Western Cape, South Africa:
- Proposed raising of Osplaas Dam, Hex Valley, Western Cape
- Proposed cultivation of virgin soil on Remainder of Farm Monte Vista No. 43, Hex Valley, Western Cape
- Proposed upgrading of a road leading to the Mossgas Quay, Port of Saldanha, Western Cape
- Upgrading and extension of the Ben Schoeman Dock at Cape Town Harbour, Western Cape, South Africa
- Phase 1B expansion of the iron ore facility at the Port of Saldanha, Saldanha Bay, Western Cape, South Africa
- Upgrading of the Darling Wastewater Treatment Works, Darling, Western Cape, South Africa
- Proposed Upgrading of the Bonnievale Wastewater Treatment Works, Bonnievale
- Upgrading of the Hex River Valley Weirs, Hex River Valley, Western Cape, South Africa
- Proposed Construction of an Effluent Pipeline between the New Town Pump Station in Wellington and the Paarl Wastewater Treatment Works, Paarl, Western Cape, South Africa

Academic Qualifications:

- BSc (Hons) (Environmental and Geographical Science), University of Cape Town, South Africa, 2000.
- BSc (Environmental and Geographical Science), University of Cape Town, South Africa, 1996.
- EIA and Management Course, University of Stellenbosch, South Africa, June 2002.

Professional Experience:

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|----------------|---|
| 2017 – present | Director, Holland Group (Pty) Ltd, trading as Holland & Associates Environmental Consultants, Cape Town, South Africa |
| 2011 - 2017 | Self employed, trading as Holland & Associates Environmental Consultants |
| 2004 to 2011 | Senior Environmental Practitioner, Aurecon South Africa (Pty) Ltd (previously known as Ninham Shand), Cape Town, South Africa |
| 2002 - 2004 | Environmental Scientist, Withers Environmental Consultants, Stellenbosch, South Africa |
| 2001 - 2002 | Senior Applications Analyst, Geosense Limited, Cape Town, South Africa |
| 2000 | Honours student, Department of Environmental and Geographical Science, University of Cape Town, Cape Town, South Africa |
| 1998 - 1999 | Junior Project Accountant, Warburg Dillon Read, Union Bank of Switzerland, London, United Kingdom |