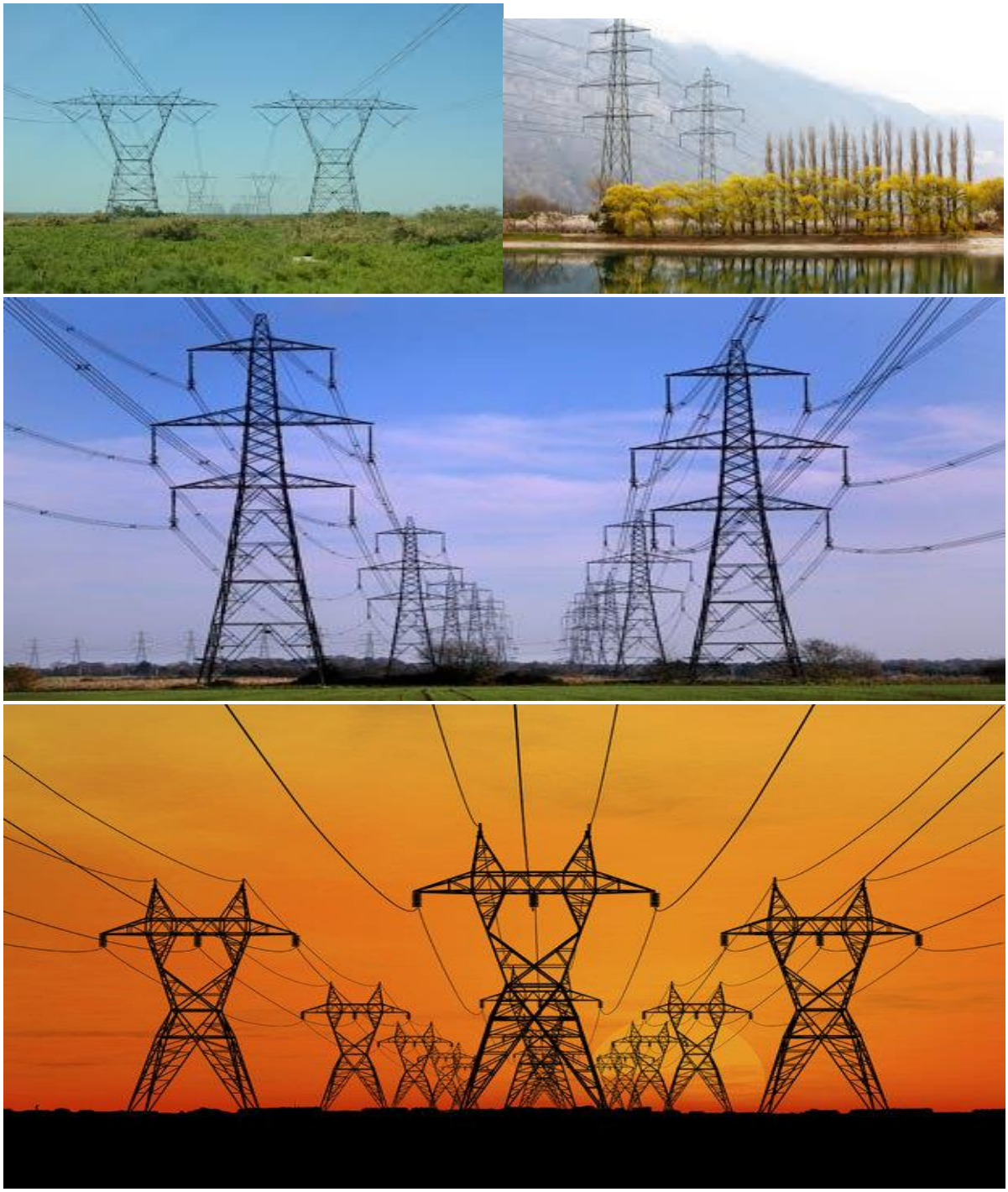
GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE DEVELOPMENT AND EXPANSION FOR OVERHEAD ELECTRICITY TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE



environmental affairs
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INTRODUCTION

1. Background

The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the Environmental Impact Assessment Regulations, 2014, as amended, (EIA Regulations) or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice, that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including, but not limited to, the applicant and the competent authority (CA).

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion of overhead electricity transmission and distribution infrastructure, and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and impact management actions, which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of overhead electricity transmission and distribution infrastructure requiring EA in terms of NEMA, i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014, as amended, and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, as amended, and all associated listed or specified activities necessary for the realisation of such infrastructure.

5. Structure of this document

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

Part	Section	Heading	Content
A		Provides general guidance and information and is **not**	Definitions, acronyms, roles & responsibilities and documentation and reporting.

Part	Section	Heading	Content
		legally binding	
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and impact management actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Where an impact management outcome is not relevant, the words "not applicable" can be inserted in the template under the "responsible persons" column. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template **is not required** to be submitted to the CA as once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the decision-making process, the EAP on behalf of the applicant /proponent must make the hard copy of this EMPr available at a public location and where the applicant has a website, the EMPr should also be made available on such publicly accessible website.
	2	Site-specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in Part B: Section 1, and understands that the impact management outcomes and impact management actions are **legally binding**. The preliminary infrastructure layout must be finalized to inform the final EMPr that is to be submitted with the basic assessment report (BAR) or environmental impact assessment report (EIAR), ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of Part C. This section **must be** submitted to the CA together with the final BAR or EIAR. The information submitted to the CA will be considered to be incomplete should a signed copy of Part B: section 2 not be submitted. Once approved, this Section forms part of the EMPr for the development and is legally binding.
C		Site-specific sensitivities / attributes	If any specific environmental sensitivities/ attributes are present on the site which require site-specific impact management outcomes and impact management actions, not included in the pre-approved generic EMPr, to manage impacts, these specific impact management outcomes and impact management actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and

Part	Section	Heading	Content
			impact management actions must be provided. These specific impact management outcomes and impact management actions must be presented in the format of the pre-approved EMPr template (Part B: section 1) This section will not be required should the site contain no specific environmental sensitivities or attributes. However, if Part C is applicable to the site, it **is required** to be submitted together with the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP, and must contain his/her name and expertise including a curriculum vitae. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only **to additional** impact management outcomes and impact management actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion and which are not already included in Part B: section 1.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are **not required** to be submitted to the competent authority.

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

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental impact management action:

- For implementation
  - a 'responsible person',
  - a method for implementation,
  - a timeframe for implementation
- For monitoring
  - a responsible person
  - frequency
  - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and impact management actions

Once the activity has commenced, a holder of an EA may make amendments to the impact management outcomes and impact management actions in the following manner:

- Amendment of the impact management outcomes: in line with the process contemplated in regulation 37 of the EIA Regulations; and

- Amendment of the impact management actions: in line with the process contemplated in regulation 36 of the EIA Regulations.

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

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

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

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

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

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

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

PART A – GENERAL INFORMATION

1. DEFINITIONS

In this EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA Regulations has that meaning, and unless the context requires otherwise –

"clearing" means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

"construction camp" is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

"contractor" - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

"hazardous substance" is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

"method statement" means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The method statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The method statement must cover applicable details with regard to:

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

"slope" means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

"solid waste" means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

"spoil" means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

"topsoil" means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil; and

"works" means the works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
EAR	Environmental Audit Report
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act ,2004 (Act No. 10 of 2004)
NEMWA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
MSDS	Material Safety Data Sheet
RI&AP's	Registered interested and affected parties

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

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

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

Responsible Person (s)	**Role and Responsibilities**
Developer's Project Manager (DPM)	Role The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). Where required, an environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of the environmental authorisation (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. Responsibilities - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Issuing of site instructions to the Contractor for corrective actions required; - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	Role The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. Responsibilities - Ensure that all contractors identify a contractor's Environmental Officer (cEO);

Responsible Person (s)	Role and Responsibilities
	- Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Issuing of site instructions to the Contractor for corrective actions required; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<u>Role</u> The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non- compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Contractor and potential and Registered Interested &Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required. <u>Responsibilities</u> The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective;

Responsible Person (s)	Role and Responsibilities
	- Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) ; - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management: - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared;

Responsible Person (s)	Role and Responsibilities
	- Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor;
Contractor	<u>Role</u> The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the impact management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities. <u>Responsibilities</u> - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	<u>Role</u> 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:

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

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead electricity transmission and distribution infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following preliminary list of documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA Regulations.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record “Matters for Attention” that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement must cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall monitor and ensure that the contractors perform in accordance with these method statements. Completed and agreed method statements between the holder of the EA and the contractor shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, impact management outcomes and impact management actions , as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions

required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

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

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO’s written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in (**section 4.11**) below.

4.11 Claims for damages

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

1. Record the full detail of the complaint as described in (**section 4.10**) above;
2. The DPM will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

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

4.13 Environmental audits

Internal environmental audits of the activity and implementation of the EMPr must be undertaken. The findings and outcomes must be included in the EMPr file and be submitted to the CA at intervals as indicated in the EA.

An Environmental Audit Report must be prepared monthly. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the rehabilitation and/or requirements of the EA a final EAR is to be prepared and submitted to the CA. The EAR must comply with Appendix 7 of the EIA Regulations.

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

5. IMPACT MANAGEMENT OUTCOMES AND IMPACT MANAGEMENT ACTIONS

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

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

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contactor and the holder of the EA. This template, once signed and dated, is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– All staff must receive environmental awareness training prior to commencement of the activities; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; – The Contractor must erect and maintain information posters at key locations on site, and the posters must include the following information as a minimum: a) Safety notifications; and b) No littering. – Environmental awareness training must include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures;	The Contractor and the Contractor Environmental Officer (cEO).	Induction presentation Toolbox talks Compulsory Environmental Awareness Training Sessions. Information Posters in accessible locations.	Start of construction and when a new employee starts work Weekly	The appointed Environmental Control Officer (ECO).	Monthly	Signed attendance register Employee interviews Contents of induction presentation and toolbox talks Poster displays An Environmental Site File should be compiled and maintained by the cEO for the duration of the construction phase. This file should include

g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; j) Fire prevention; and k) Disease prevention. – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in appropriate languages that all staff can understand.						proof of training, attendance registers, etc., and a copy of this file should be provided to the ECO, to append to the monthly audit reports.

5.2 Site establishment development

Impact management outcome: Impacts on the environment are minimised during site establishment and the development footprint are kept to demarcated development area.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment	DSS cEO	Method statement with layout plan of the construction camp / laydown area	Prior to site establishment	dEO ECO	Once-off as method statements are submitted. Monthly monitoring.	Approved method statements Approved construction camp and

cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; – Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; – Sites must be located where possible on previously disturbed areas; – The camp must be fenced in accordance with ***Section 5.5: Fencing and gate installation***; and – The use of existing accommodation for contractor staff, where possible, is encouraged.						laydown area layout plan

5.3 Access-restricted areas

Impact management outcome: Access to restricted areas prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identification of access restricted areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; – Erect, demarcate and maintain a temporary barrier with clear signage around the perimeter of any access restricted area, colour coding could be used if appropriate; and – Unauthorised access and development related activity inside access restricted areas is prohibited.	DSS cEO	Weather-proof barrier signage at boundaries of no-go areas	Prior to site establishment	dEO ECO	Weekly monitoring	Barriers and signage maintained in good condition with evidence included in monthly reporting. The ECO must monitor the site to ensure that

						all restricted areas have been demarcated (photographic evidence) and that construction is not taking place within these areas.

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; – All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition – All contractors must be made aware of all these access routes. – Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; – Maximum use of both existing servitudes and existing roads must be made to minimize further disturbance through the development of new roads;	DPM, Contractor and landowners	Written access agreement Compliance with conditions	Prior to site establishment and throughout construction period	dEO ECO	Weekly monitoring	The Contractor must provide the ECO with a copy of the access agreement, as well as any specific (agreed upon) conditions.

– In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with ***section 4.9: photographic record***; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; – Access roads in flattish areas must follow fence lines and tree belts to avoid fragmentation of vegetated areas or croplands – Access roads must only be developed on a pre-planned and approved roads.						Access roads used as agreed No complaints from 3rd parties about inappropriate access Monthly reporting on monitoring compliance.

5.5 Fencing and gate installation

Impact management outcome: Minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Use existing gates provided to gain access to all parts of the area authorised for development, where possible; – Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record; – All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner;	DSS cEO	Access measures implemented Supervision	Throughout construction and the removal of temporary fencing prior to the	dEO ECO	Monthly monitoring of all fencing and gate installations	Photographic evidence of access control (e.g. locks used as prescribed

– At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; – Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; – Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; – Original tension must be maintained in the fence wires; – All gates installed in electrified fencing must be re-electrified; – All demarcation fencing and barriers must be maintained in good working order for the duration of the development activities; – Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated access restricted areas, where applicable; – Any temporary fencing to restrict the movement of life-stock must only be erected with the permission of the land owner. – All fencing must be developed of high quality material bearing the SABS mark; – The use of razor wire as fencing must be avoided; – Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; – On completion of the development phase all temporary fences are to be removed; – The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.			commencement of the Operational Phase.			

5.6 Water supply management

Impact management outcome: Undertake responsible water usage.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; – The Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. – Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training. d. The use of grey water is encouraged.	DSS cEO	Monitoring of levels of water sources (if water is obtained from the natural environment) Compliance with all water use authorisation conditions.	Weekly	dEO ECO	Daily monitoring by cEO and monthly monitoring by ECO	Monitoring records Water use audit reports Water conservation covered in toolbox talks

5.7 Storm and wastewater management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; – Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO; – Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.	DSS cEO	Use of absorbent materials at concrete mixing areas Disposal of contaminated water at suitable facility	Ongoing throughout construction	dEO ECO	Weekly monitoring by cEO with monthly reporting.	Waste disposal records No evidence of soil and water contamination Silt trap maintained and in use No evidence of water contamination from sources on site

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; – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided;	DSS cEO	Contractor to develop a waste management plan for approval of the	Ongoing	dEO ECO	Weekly	Contract with waste contractor

– A suitably positioned and clearly demarcated waste collection site must be identified and provided; – The waste collection site must be maintained in a clean and orderly manner; – Waste must be segregated into separate bins and clearly marked for each waste type for recycling and safe disposal; – Staff must be trained in waste segregation; – Bins must be emptied regularly; – General waste produced onsite must be disposed of at registered waste disposal sites/ recycling company; – Hazardous waste must be disposed of at a registered waste disposal site; – Certificates of safe disposal for general, hazardous and recycled waste must be maintained.		ECO and should include requirements for: Segregated disposal bins All waste containers have lids Waste contractor appointed Daily to weekly site cleanups				Safe disposal certificates Employee knowledge and practice of waste segregation No overflowing bins on site

5.9 Protection of watercourses and estuaries

Impact management outcome: Pollution and contamination of the watercourse environment and or estuary erosion are prevented.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; – In the event of a spill, prompt action must be taken to clear the polluted or affected areas; – Where possible, no development equipment must traverse any seasonal or permanent wetland – No return flow into the estuaries must be allowed and no disturbance of the Estuarine functional Zone should occur;	DSS cEO	Spill control kits available on site and operators trained to use them Spills cleaned promptly to prevent water contamination	Ongoing	dEO ECO	Monthly	Spills controlled Evidence of operators trained in spill prevention No evidence of water

– Development of permanent watercourse or estuary crossing must only be undertaken where no alternative access to tower position is available; – There must not be any impact on the long term morphological dynamics of watercourses or estuaries; – Existing crossing points must be favored over the creation of new crossings (including temporary access) – When working in or near any watercourse or estuary, the following environmental controls and consideration must be taken: a) Water levels during the period of construction; b) No altering of the bed, banks, course or characteristics of a watercourse c) 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; d) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and e) 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.		Designated and limited crossing points for watercourses Watercourses to be off-limits for construction or as authorised by the conditions of the water use license.				contamination from site activities Watercourse crossing points maintained and respected

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 that does not interfere with the development must be left undisturbed; – Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; – Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; – Permits for removal must be obtained from the Department of Agriculture, Forestry and Fisheries prior to the cutting or clearing of the affected species, and they must be filed; – The Environmental Audit Report must confirm that all identified species have been rescued and replanted and that the location of replanting is compliant with conditions of approvals; – Trees felled due to construction must be documented and form part of the Environmental Audit Report; – Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; – Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; – A daily register must be kept of all relevant details of herbicide usage; – No herbicides must be used in estuaries; – All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off in accordance to ***Section 5.3: Access restricted areas***.	DSS, cEO and botanical specialist appointed to undertake floral search and rescue.	Areas of natural vegetation not to be disturbed clearly demarcated and protected Wood removed from the site provided to communities Plant rescue plan submitted and implemented On-site area for transplanted species of conservation concern and medicinal plants Relevant permits for removal of protected species obtained and on file.	Prior to site establishment and throughout construction and operational phases.	dEO ECO	Weekly monitoring of demarcated areas.	Proof and record keeping of transplanted rare and medicinal plants Proof and record keeping of implementation of conditions of permits for transplanting protected species Community access to wood removed from the site No access to protected areas of the site No evidence of introduction of alien plants Alien plants controlled

Servitude: – Vegetation that does not grow high enough to cause interference with overhead transmission and distribution infrastructures, or cause a fire hazard to any plantation, must not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager; – Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to distance as agreed between the land owner and the EA holder – Alien invasive vegetation must be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility; – Vegetation must be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280; – Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation; – In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered.						

5.11 Protection of fauna

Impact management outcome: 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; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; – Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; – Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; – No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as Access restricted areas; – No deliberate or intentional killing of fauna is allowed; – In areas where snakes are abundant, snake deterrents to be deployed on the pylons to prevent snakes climbing up, being electrocuted and causing power outages; and – 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.	DSS cEO	Areas of natural vegetation that provide habitat for animals not to be disturbed must be clearly demarcated and protected Implementation of training to prohibit hunting Any snakes, found within the development footprint, are removed by a suitably experienced snake handler.	Throughout construction	dEO ECO	Monthly	No evidence of hunting or trapping of animals on site Training records available w.r.t. hunting prohibition

5.12 Protection of heritage resources

Impact management outcome: Impact to heritage resources is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in ***Section 5.3: Access restricted areas***; – Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; – All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/ palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time must be allowed to remove/collect such material before development recommences.	DSS cEO	Implement chance finds procedure immediately upon uncovering heritage material Training in chance finds for all employees	Throughout construction	dEO ECO	Monthly or as required	Chance finds records Training records w.r.t. chance finds

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.;	DSS cEO	Maintain access control	Throughout construction	dEO ECO	Weekly or as required	Access control is effective – no

– All unattended open excavations must be adequately fenced or demarcated; – Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; – Ensure structures vulnerable to high winds are secured; – Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.		Site hazards are clearly demarcated Barriers at deep excavations Incidents and complaints register accessible at site entrance				unauthorised access obtained Site hazards signage installed and maintained Excavations fenced Updated and accessible incidents and complaints register

5.14 Sanitation

Impact management outcome: Clean and well-maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Mobile chemical toilets are installed onsite if no other ablution facilities are available; – The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;	DSS cEO	Sufficient toilets provided for the number of employees	Throughout construction	dEO ECO	Weekly	Disposal certificates available for effluent disposal

– Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.		Toilets within easy access to all work areas Implementation of waste management plan				No evidence of ablution in the veld Records of toolbox talks w.r.t. sanitation No evidence of overflowing toilets

5.15 Prevention of disease

Impact Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable;	DSS cEO	Environmentally friendly pest control methods employed Hand sanitizer available at site	Throughout construction	dEO ECO	Monthly	Pest control methods are owl-friendly and scavenger friendly

– Free condoms must be made available to all staff on site at central points; – Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling Services.		entry points and eating areas Covid temperature and symptom screening for all entries to site. Implement isolation and testing protocol for any employees suspected of having Covid. Provision of medical guidance and support, where necessary.				Records of toolbox talks w.r.t. STDs and Covid Condoms available in toilets Posters re STDs and Covid are displayed Records of Covid screening

5.16 Emergency procedures

Impact management outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation;	DSS cEO	Emergency Response and Action Plan: training provided	Throughout construction	dEO ECO	Monthly	Records of ERAP drill testing

– All staff must be made aware of emergency procedures as part of environmental awareness training; – The relevant local authority must be made aware of a fire as soon as it starts; – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see ***Hazardous Substances section 5.17***).		to responders and plant tested Display of authority emergency response numbers.				Evidence of ERAP training Emergency response numbers displayed

5.17 Hazardous substances

Impact management outcome: Safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; – All hazardous substances must be stored in suitable containers as defined in the Method Statement; – Containers must be clearly marked to indicate contents, quantities and safety requirements; – All storage areas must be bunded. The bunded area must be of sufficient capacity to contain a spill / leak from the stored containers; – Bunded areas to be suitably lined with a SABS approved liner; – An Alphabetical Hazardous Chemical Substance (HCS) control sheet must be drawn up and kept up to date on a continuous basis; – All hazardous chemicals that will be used on site must have Material Safety Data Sheets (MSDS);	DSS cEO	Hazardous chemical store aligned with relevant legal requirements Bulk chemical containers bunded to 110% Hazardous chemicals control sheet maintained	Throughout construction	cEO ECO	Daily monitoring by cEO	MSDSs for all hazardous chemicals available Bunding for bulk containers in good condition Training records and knowledge of employees

– All employees working with HCS must be trained in the safe use of the substance and according to the safety data sheet; – Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available; – The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsers; – The tanks/ bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsers (110% statutory requirement plus an allowance for rainfall); – The floor of the bund must be sloped, draining to an oil separator; – Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; – All empty externally dirty drums must be stored on a drip tray or within a bunded area; – No unauthorised access into the hazardous substances storage areas must be permitted; – No smoking must be allowed within the vicinity of the hazardous storage areas; – Adequate fire-fighting equipment must be made available at all hazardous storage areas; – Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; – An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;		Legally compliant signage for all chemical hazards Approved method statement requirements implemented.				Hazardous chemicals control sheet for all chemicals on site All chemical containers labelled. No evidence of leakages or spills Response / cleanup records available for all spillages Evidence of spill response training and spill response drills Spill kits and drip trays available at risk areas and maintained

– The responsible operator must have the required training to make use of the spill kit in emergency situations; – An appropriate number of spill kits must be available and must be located in all areas where activities are being undertaken; – In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning storm and wastewater management and 5.8 for solid and hazardous waste management.						

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimised.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; – During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; – Leaking equipment must be repaired immediately or be removed from site to facilitate repair; – Workshop areas must be monitored for oil and fuel spills; – Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water	DSS cEO	Dedicated vehicle servicing facility with impermeable floor Drip trays and spill kits available on site. Availability of drip trays for leaking equipment.	Throughout construction	dEO ECO	Daily monitoring by cEO and monthly auditing and reporting by ECO.	Drip trays used when needed No evidence of oil and fuel spillages Training records and knowledge of employees w.r.t. vehicle maintenance

separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section ***5.7: Storm and waste water management***.		Implementation of stormwater method statements.				Response / cleanup records available for all spillages Vehicles are well-maintained and do not show evidence of leakages

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface; – Batching plants areas must be fitted with a containment facility for the collection of cement laden water. – Dirty water from the batching plant must be contained to prevent soil and groundwater contamination – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;	The Contractor and cEO	Erect temporary fencing around the batching plant/(s). The Waste Management Plan and Stormwater Management practices must be implemented	Construction phase	dEO ECO	Daily monitoring of batching plant/(S) by cEO.	No evidence of excessive dust generation due to batching. Proof of Contractor's compliance

– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility; – Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions) – Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility; – Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.		throughout the Construction Phase. Copies of all waste removal slips must be kept on record Method Statements should be submitted for approval, where required.				with the Waste Management Plan. Copies of waste removal slips up to date and available on site. Photographic evidence of temporary fencing erected around batching plant/(s).

5.20 Dust emissions

Impact management outcome: Dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO;	Contractor cEO	Dust suppression methods as direct by the ECO and cEO	Throughout construction	dEO ECO	Daily monitoring by cEO.	No evidence of excessive dust generation

– Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible; – Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; – During high wind conditions, the ECO must evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; – Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; – Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; – Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas; – Straw stabilisation must be applied at a rate of one bale/10 m² and harrowed into the top 100 mm of top material, for all completed earthworks; – For significant areas of excavation or exposed ground, dust suppression measures must be used to minimise the spread of dust.		Separate topsoil and subsoil during site clearance and stockpile separately Spread topsoil on the surface after final shaping Adherence to speed limits by vehicles Straw stabilization for completed earthworks				due to construction Dust control measures implemented Vehicles do not speed on site Maintain the complaints register by monitoring and addressing complaints received related 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 – Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.	DSS cEO	Method statement by blasting contractor Use only low impact blasting methods e.g. blasting blankets, micro-charges covering with soil Inform surrounding communities and landowners about planned blasting activities	Throughout construction	dEO ECO	As needed during blasting events.	No evidence of damage from flyrock No complaints from neighboring residents about blasting noise or flyrock

5.22 Noise

Impact Management outcome: Prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– The Contractor must keep noise level within acceptable limits, Restrict the use of sound amplification equipment for communication and emergency only; – All vehicles and machinery must be fitted with appropriate silencing technology and must be properly maintained; – Any complaints received by the Contractor regarding noise must be recorded and communicated. Where possible or applicable, provide transport to and from the site on a daily basis for construction workers; – Develop a Code of Conduct for the construction phase in terms of behaviour of construction staff. Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, it must be ensured that development activities must still meet the impact management outcome related to noise management.	DSS cEO	Work only during daylight hours Maintain vehicles in good condition Staff code of conduct developed and communicated	Throughout construction	dEO ECO	Daily monitoring by cEO	Records of staff code of conduct training Staff knowledge of code of conduct and evidence in their behaviour No evidence of noise complaints 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; – Firefighting equipment must be available on all vehicles located on site; – The local Fire Protection Agency (FPA) must be informed of construction activities; – Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; – Two way swop of contact details between ECO and FPA.	DSS cEO	Designated smoking areas Services fire-fighting equipment Emergency numbers for Fire Protection Association displayed	Throughout construction	dEO ECO	Weekly	Pressure gauges on extinguishers indicate it is Servicing records for extinguishers show it has been serviced in the past year Records of fire-fighting training and drills Emergency numbers for Fire Protection Association displayed

5.24 Stockpiling and stockpile areas

Impact management outcome: Reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, watercourses and water bodies; – All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; – Topsoil stockpiles must not exceed 2 m in height; – During periods of strong winds and heavy rain, the stockpiles must be covered with appropriate material (e.g. cloth, tarpaulin etc.); – Where possible, sandbags (or similar) must be placed at the bases of the stockpiled material in order to prevent erosion of the material.	DSS cEO	Soil stockpiles maintained and protected to prevent erosion as per approved method statement Covering materials placed on stockpiles to prevent erosion when necessary	Throughout construction	cEO ECO	Daily monitoring by cEO	Minimal evidence of erosion from soil stockpiles Evidence of clearance of exotic vegetation Stockpiles <2m high

5.25 Finalising tower positions

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No vegetation clearing must occur during survey and pegging operations; – No new access roads must be developed to facilitate access for survey and pegging purposes;	DSS, cEO and botanical specialist	Walkdown assessment of proposed pylon positions by	Prior to construction	dEO ECO	Once-off	Clearance of vegetation only at confirmed

– Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas; – The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.		biodiversity specialist. Walkdown assessment to take place on foot or in 4x4 vehicle, keeping to existing access roads and servitude roads. Produce walkdown assessment report that documents walkdown findings and agreed positions of pylons.				tower positions Tower positions pegged by specialists Walkdown assessment report

5.26 Excavation and installation of foundations

Impact management outcome: No environmental degradation occurs as a result of excavation or installation of foundations.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised disposal site, if not used for backfilling purposes;	DSS cEO	Spread soil excavated from pylon foundations over surrounding	During construction	dEO ECO	Once-off	Soil excavated from pylon foundations

– Spoil can however be used for landscaping purposes and must be covered with a layer of 150 mm topsoil for rehabilitation purposes; – Management of equipment for excavation purposes must be undertaken in accordance with ***Section 5.18: Workshop equipment maintenance and storage***; and – Hazardous substances spills from equipment must be managed in accordance with ***Section 5.17: Hazardous substances***. – Batching of cement to be undertaken in accordance with **Section *5.19 : Batching plants***; – Residual cement must be disposed of in accordance with **Section *5.8: Solid and hazardous waste management***.		area or use it as fill elsewhere Compliance with approved waste management plan.				spread over surrounding area or used as fill elsewhere. Copies of waste disposal certificates updated and available on site

5.27 Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Prior to erection, assembled towers and tower sections must be stored on an elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation; – In sensitive areas, tower assembly must take place off-site or away from sensitive positions; – The crane used for tower assembly must be operated in a manner which minimises impact to the environment; – The number of crane trips to each site must be minimised; – Wheeled cranes must be utilised in preference to tracked cranes;	DSS cEO	Lowest impact construction methods appropriate to the site conditions based on topography, proximity to existing	During and immediately after construction	dEO ECO	Once-off for each tower	Site inspection during construction confirms that the lowest impact methods appropriate

– Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact; – Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads; – Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in **Section 8.10: Vegetation clearing**; – No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor; – Topsoil must be removed separately from subsoil material and stored for later use during rehabilitation of such tower sites; – Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil; – Excavated slopes must be no greater that 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes; – Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed; – Only existing disturbed areas are utilised as spoil areas; – Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum; – Surface water runoff is appropriately channeled through or around spoil areas; – During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that; – The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation; – The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site		transmission lines, availability of existing access roads and degree of existing disturbance. Implementation of and compliance to relevant method statements and management plans.				for site conditions are used. Site inspection after construction confirms that the extent of damage has been limited to the immediate footprint of the powerline.

is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.						

5.28 Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances, the siting of the winch and tensioner must avoid access-restricted areas and other sensitive areas; – The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks; – Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances; – In the case of the development of overhead transmission and distribution infrastructure, a one metre "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and hand-held implements with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used; – Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter; – Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be	DSS cEO	Lowest impact construction methods appropriate to the site conditions based on topography, proximity to existing transmission lines/foundations, availability of existing access roads and degree of existing disturbance. Implementation of and compliance to approved method statements and	During and immediately after construction	dEO ECO	Once-off	Site inspection during construction confirms that the lowest impact methods appropriate for site conditions are used. Site inspection after construction confirms that the extent of damage has been limited

closed for any period(s) during development, the persons affected must be given reasonable notice, in writing; – No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines, fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing; – Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 workdays minimum), in writing, must be provided to the landowner; – Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.		management plans.				to the immediate footprint of the powerline. No damage to existing services and cultivated areas is evident.

5.29 Socio-economic impacts

Impact management outcome: Socio-economic development is enhanced.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Develop and implement communication strategies to facilitate public participation; – Develop and implement a collaborative and constructive approach to conflict resolution as part of the external stakeholder engagement process; – Sustain continuous communication and liaison with neighboring owners and residents – Create work and training opportunities for local stakeholders; and	DSS cEO	Ensure regular communication on construction progress through established community communication channels.	1 month prior to the start of construction and throughout construction	dEO ECO	Daily monitoring by cEO	Recorded grievances / informal complaints via an incident and complaints register.

– 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.		Grievance record available on site and updated. Communicate expected number of local jobs and application procedure prior to construction. No accommodation on site, except for security personnel.				ECO must be notified of any complaints or grievances within 48 hours. Records of community engagements (minutes, correspondence, social media posts, etc.)

5.30 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable) and need to be undertaken in accordance with the impact management actions included in sections 5.17: management of hazardous substances and 5.18 workshop, equipment maintenance and storage; – Hazardous storage areas must be well ventilated;	DSS cEO	Implement impact management actions as specified	Upon temporary closure	dEO ECO	When required during closure	Site conditions in relation to required impact management actions will

– Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; – Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; – Structures vulnerable to high winds must be secured; – Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured.						indicate compliance. ECO to conduct site inspection and report on compliance.

5.31 Landscaping and rehabilitation

Impact management outcome: Areas disturbed during the development phase are returned to a state that approximates the original condition.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; All spoil and waste must be disposed to a registered waste site and certificates of disposal provided; – All slopes must be assessed for contouring, and to contour only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983	DSS cEO	Embankments vegetated by topsoil placement and erosion protection, with exception of those kept free of	Throughout construction	dEO ECO	Daily monitoring by cEO	Embankments vegetated or otherwise protected Disturbed areas revegetated

– All slopes must be assessed for terracing, and to terrace only when the need is identified in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created must have a slope of 1:4 and be replanted with indigenous species and grasses that approximates the original condition; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping which must be agreed to by the holder of the EA and the landowners; – Rehabilitation of tower sites and access roads outside of farmland; – Indigenous species must be used for with species and/grasses to where it compliments or approximates the original condition; – Stockpiled topsoil must be used for rehabilitation (refer to Section ***5.24: Stockpiling and stockpiled areas***); – Stockpiled topsoil must be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; – Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; – Subsoil must be ripped before topsoil is placed; – The rehabilitation must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; – Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled ; – Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; – Spoil can be used for backfilling or landscaping as long as it is covered by a minimum of 150 mm of topsoil. – Where required, re-vegetation including hydro-seeding can be enhanced using a vegetation seed mixture as described below. A		vegetation for fire control Implement passive mitigation measures as prescribed by Botanical specialist in Section 8.3 in conjunction with landowner requests. Install gabions around pylon bases as necessary where there is an erosion risk Embankments that cannot be vegetated otherwise protected e.g. by stone pitching All disturbed areas to be revegetated by placing topsoil and seeded, if necessary but				and topsoil spread At least 90% coverage with no bare areas more than 5m^2 a year after completion of construction Stormwater diversion strips constructed on steep access roads in the transmission line corridor.

mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must be indigenous to the area with the seeds used coming from the area; d) Root systems must have a binding effect on the soil; e) The final product must not cause an ecological imbalance in the area		bearing the Botanical specialist mitigation measures in mind. Install raised strips diverting stormwater off the transmission line access roads on steep slopes to prevent erosion				

6 ACCESS TO THE GENERIC EMPr

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

PART B: SECTION 2

7 SITE-SPECIFIC INFORMATION AND DECLARATION

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

7.1.1 Details of the applicant:

Name of applicant: Umoyilanga (Pty) Ltd

Tel No: +27 41 506 4911

Fax no: -

Postal Address: See physical address

Physical Address: Waterfront Business Park, Building 5 (Ground Floor), 1204 Humerail, Port Elizabeth, 6000

Email address: louis.dewavrin@edf-re.co.za

7.1.2 Details and expertise of the EAP:

Wynand Loftus from Zutari Pty (Ltd)

Tel No: +27 44 805 5458

Fax No: +27 44 805 5454

E-mail address: wynand.loftus@zutari.com

Expertise of the EAP (Curriculum Vitae included): Appended

7.1.3 Project name: Upgrade of the Gordonia-Avondale 132KV transmission line, Upington, Northern Cape

7.1.4 Description of the project:

Eskom requires that Umoyilanga (Pty) Ltd, a preferred bidder selected as part of the DMRE Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP), upgrade an existing portion of the 132 kV Gordonia-Garona transmission line as part of the works required for connecting the new Avondale Hybrid Solar project to the grid.

The existing 132 kV Gordonia-Garona transmission line is approximately 30 years old and runs from Upington, Northern Cape in an easterly direction and then later south towards Groblershoop for an approximate distance of 92 kilometres.

It is proposed to upgrade the physical components (e.g. conductor, pylons, etc.) of the existing transmission line to prevent potential future capacity issues and failure of the infrastructure. The capacity of the line will remain 132 kV. In other words, no increase in line capacity is proposed. Only the physical components are to be upgraded and existing removed. The section to be upgraded is between the existing Gordonia substation and the approved Avondale Solar PV facility.

The line is located inside a registered servitude and comprises of ninety-two (92) lattice pylon structures over an approximate distance of 32 kilometres. The line is accessed via existing access/farm roads and a service track running underneath the line within the existing servitude. Eskom undertakes routine inspections and maintenance on the line via the existing service track.

The proposed new monopole structures will be constructed along the existing centreline and thus inside the registered servitude. Placing the new monopole structures at new locations (avoiding sensitive areas) will allow the contractor to finish construction within the timeframe that Eskom is able to make the line available for upgrade. It means that the contractor can construct the new foundations, transport parts to site and start assembly of new pylons at each location, prior to the Eskom line being handed over/shutdown. When the line is handed over to the contractor, the old line and existing lattice structures can be taken down and the new monopole structures can be fully assembled and erected and the new line can be strung. The old lattice structure and its foundations will be removed from site, appropriately disposed of and rehabilitated as per the EMPr requirements.

The proposed upgrade of the line will ensure that existing lattice structures are removed from any sensitive areas where possible. As part of the final pylon placement design it was however found that a number of the new pylons would not be able to avoid some of the sensitive aquatic features identified as part of the BAR process. The aquatic specialist was requested to investigate the proposed pylon placements where sensitive features cannot be avoided and proposed any additional mitigation measures should it be required. The specialist stated the following in this regard (full statement included in Appendix 6):

> *"As a mitigation measure the aquatic specialist report that informed the BAR indicated that all new pylons must avoid these sensitive features, however the specialist is aware that this may not be possible (the same challenge is being seen on other projects). This statement is to confirm that I have investigated the affected areas and relevant pylons and make the following recommendation in this regard.*
>
> *Any pylons that cannot avoid the sensitive areas, or part thereof, identified during the BAR special care must be taken during the works and ensure that all the mitigation measures included in the EMPr are strictly adhered to. The ECO highlight each of these pylons to the contractor and carefully implement monitoring. The mitigation measures contained in the EMPr submitted with the Final BAR is sufficient to manage activities in these areas and must be adhered to.*
>
> *This statement specifically refers to the placement of three pylons i.e. 22, 24 & 29, however it is noted that additional challenges in this regard may occur at other pylons (although unlikely) and should this be the case then the same procedure described above must be adhered to.*
>
> *From an aquatic perspective the proposed placement is acceptable and will not result in unacceptable impact levels nor will it cause irreplaceable loss of resources*."

7.1.5 Project location:

The proposed upgrading of the existing transmission line is east of Upington and runs just north and parallel to the N14.

Table 7.1 : Property details for the proposed upgrading of the 132 kV transmission line

Farm Name / Erf and Number	Portion	21-digit SG code
Koras 412	2	C02800000000041200002
Uizip 413	RE	C02800000000041300000
Uitkomst 420	7	C02800000000042000007
Uitkomst 420	11	C02800000000042000011
Rouxville 605	RE	C02800000000060500000
Sandflats 653	RE	C02800000000065300000
Melkstroom 563	RE	C02800000000056300000
Kameelpoort 414	2	C02800000000041400002
Avondale 410	1	C02800000000041000001
UAP 418	18	C02800000000041800018
Erf 4350	0	C02800070000435000000

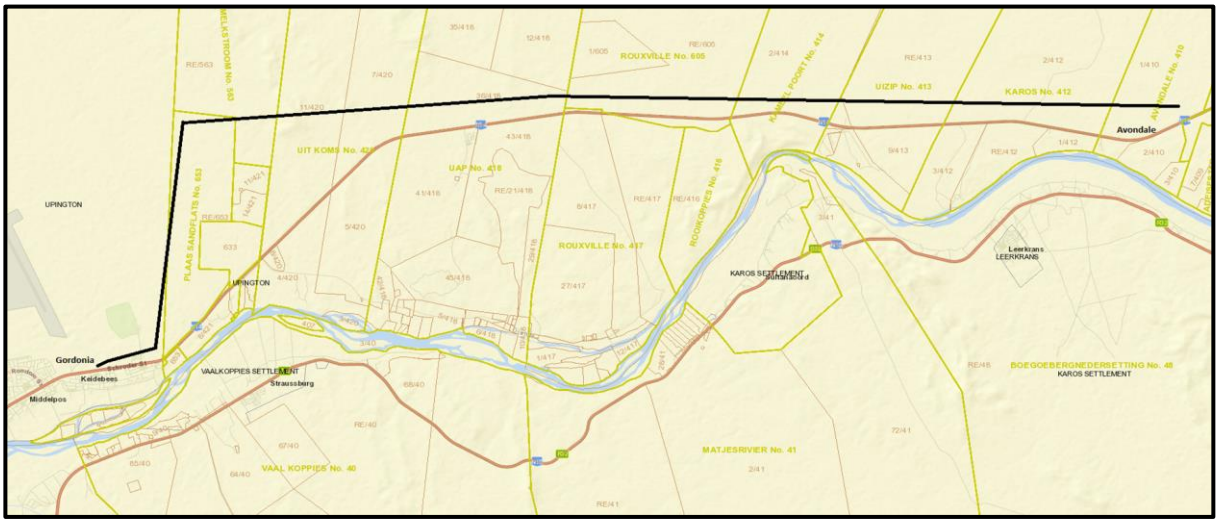


Figure 1: Properties map of the Gordonia-Avondale 132 kV transmission line upgrade

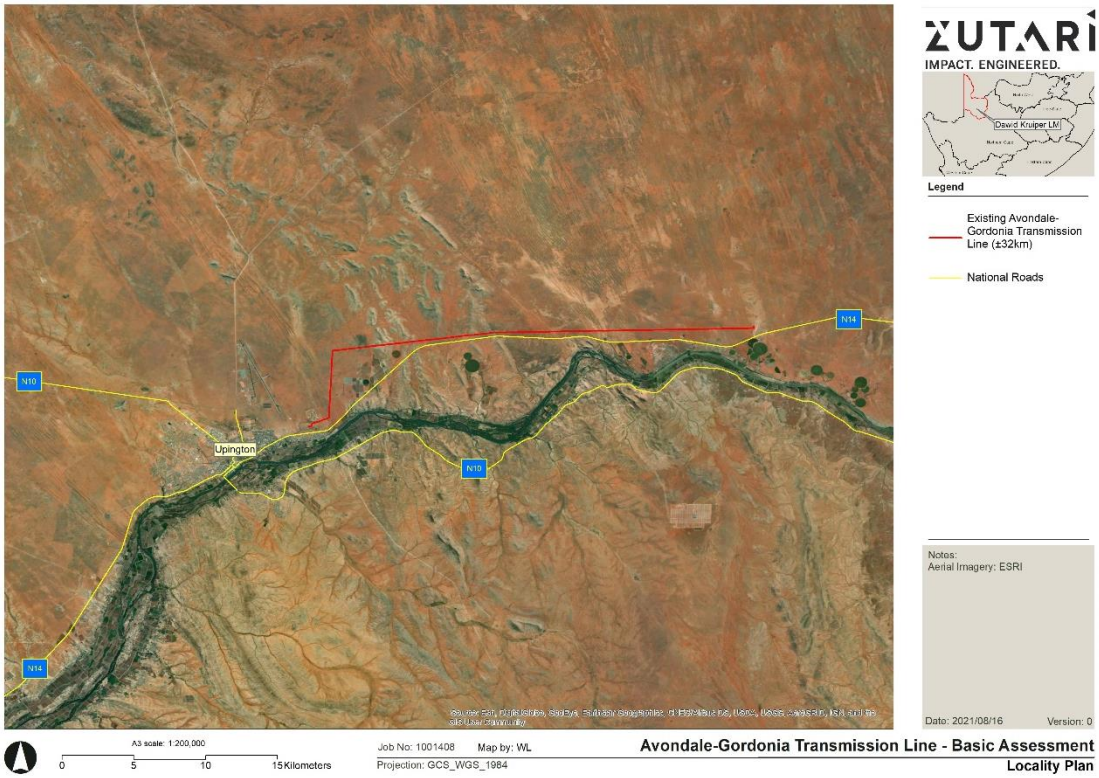


Figure 2: Locality map for the Gordonia-Avondale 132 kV transmission line upgrade

7.1.6 Technical specification of the overhead transmission and distribution line:

- Length (existing transmission line): 32 km
- Length (new proposed line): 32 km
- Tower parameters:
  - Number and types of towers: 88 x 255 type lattice towers to be removed and **upgraded with monopole towers**.
  - Tower spacing (mean and maximum): Typically 132m – 238m
  - Tower height (lowest, mean and height): Between 23m and 28m tower height with a maximum sag of 4.75m on the line.
  - Conductor attachment height (mean): Typically 18m
  - Minimum ground clearance: Typically 13m

Examples of monopole structures to be used. Majority will be self- supporting with stayed monopoles only considered for bend points.

Figure 3: Example of a Self-supporting Monopole (foreground) and Lattice Structure (background)

Figure 4: Example of a Guyed-suspension

7.2 Sub-section 2: Development footprint site map

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

Table 2: Screened Environmental Sensitivity

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme			X	
Animal Species Theme			X	
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme	X			
Paleontology Theme	X			
Plant Species Theme				X
Terrestrial Biodiversity Theme	X			

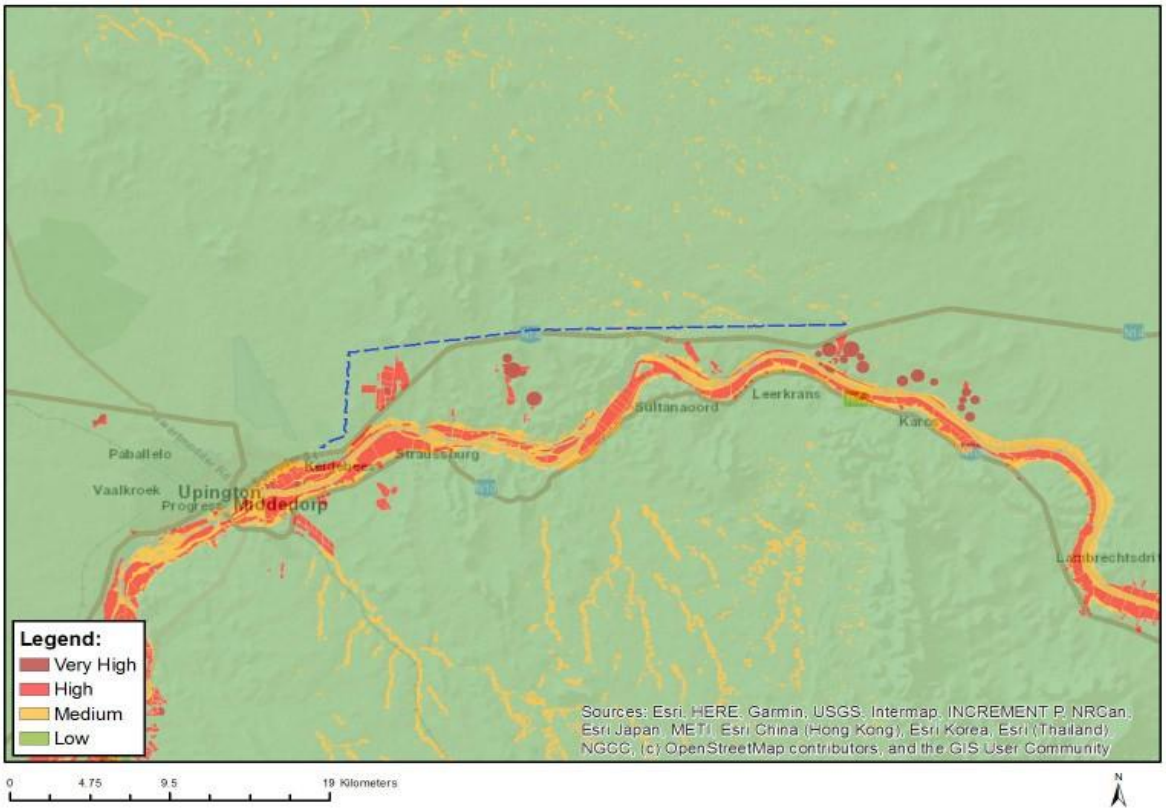


Figure 5: Agriculture theme sensitivity according to the DFFE national web-based screening tool

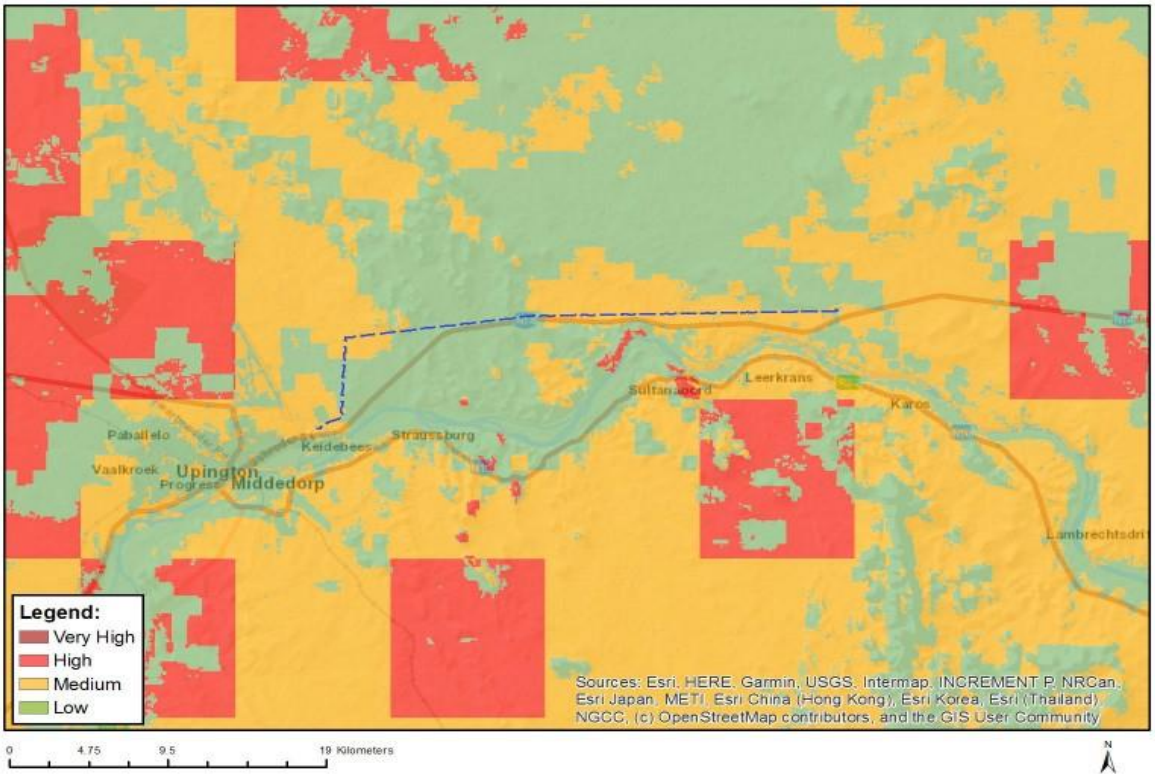


Figure 6: Animal species theme sensitivity according to the DFFE national web-based screening tool

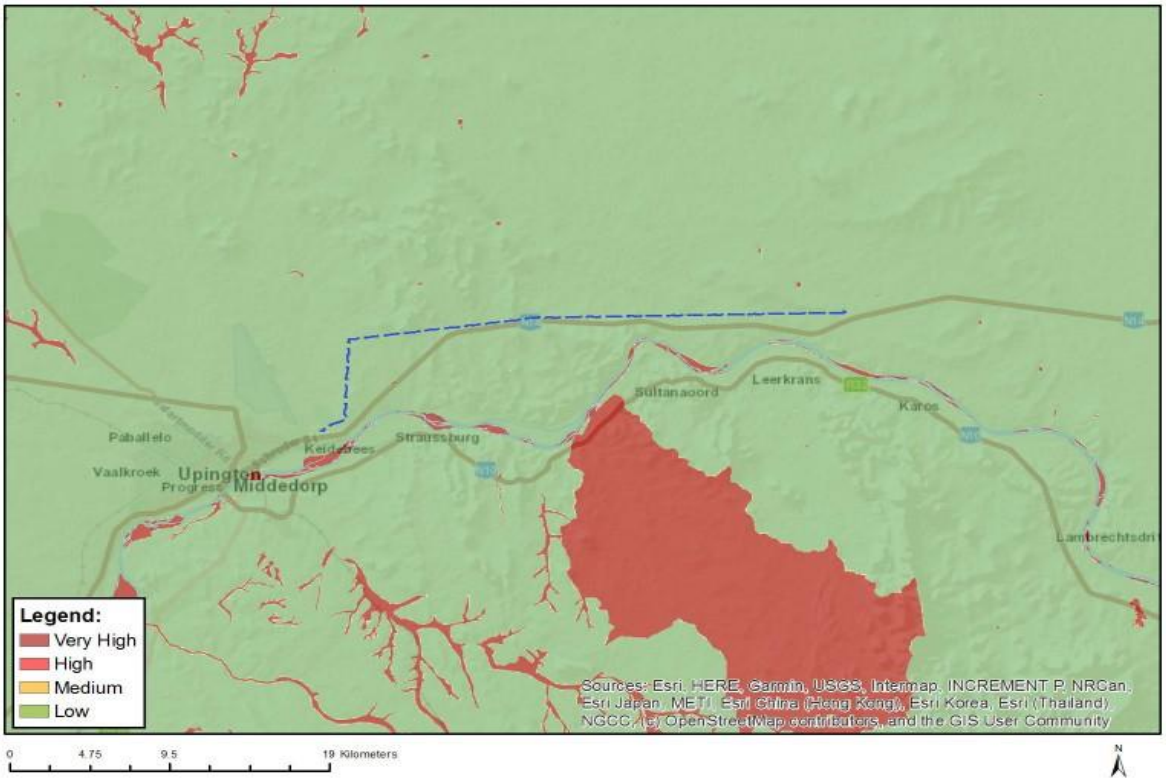


Figure 7: Aquatic Biodiversity theme sensitivity according to the DFFE national web-based screening tool

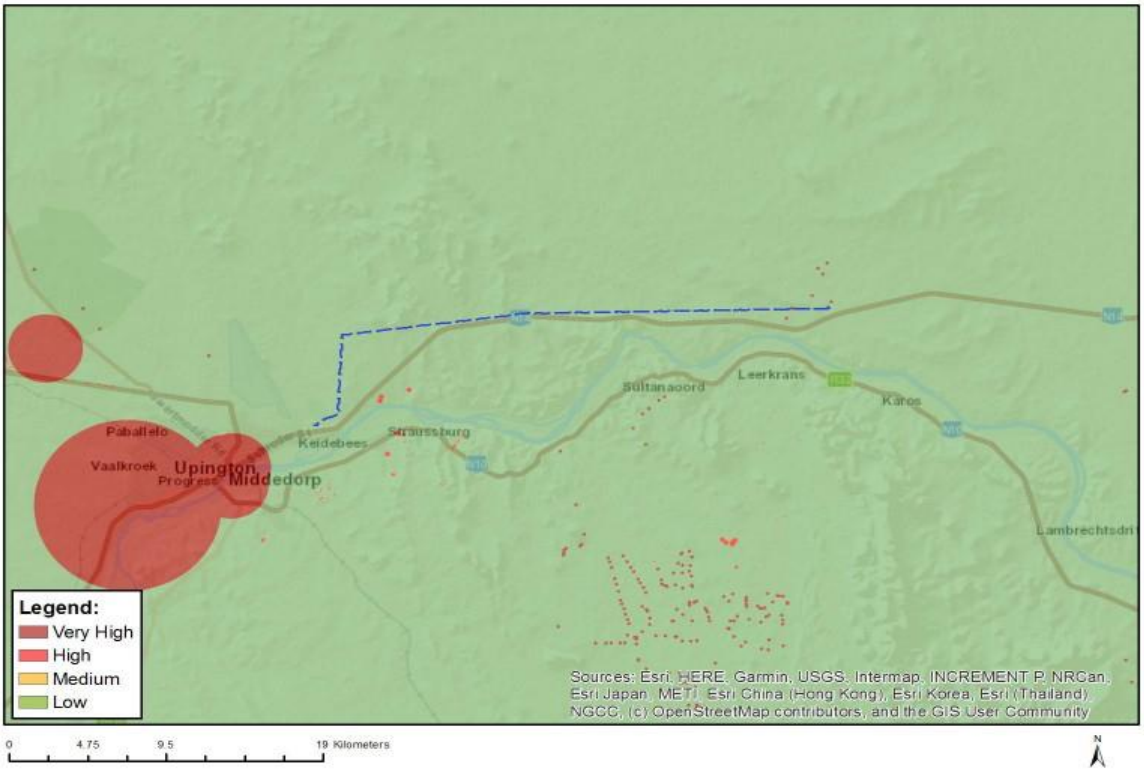


Figure 8: Archaeological and cultural heritage theme sensitivity according to the DFFE national web-based screening tool

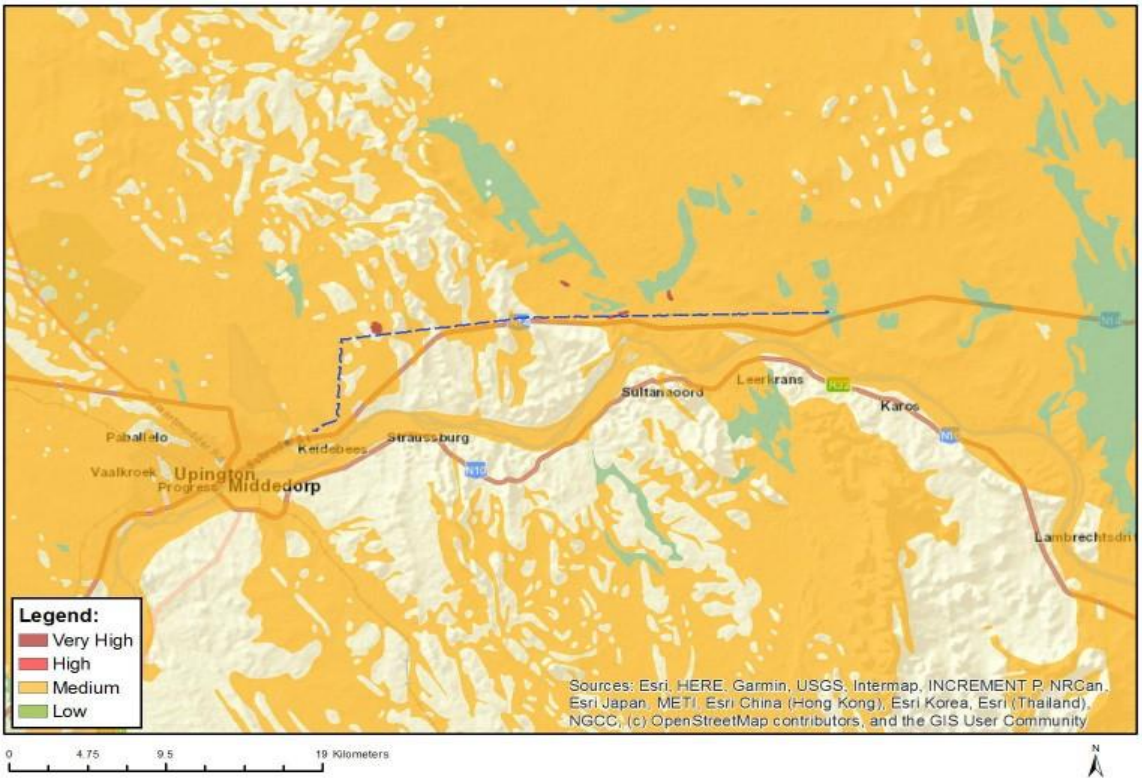


Figure 9: Palaeontology theme sensitivity according to the DFFE national web-based screening tool

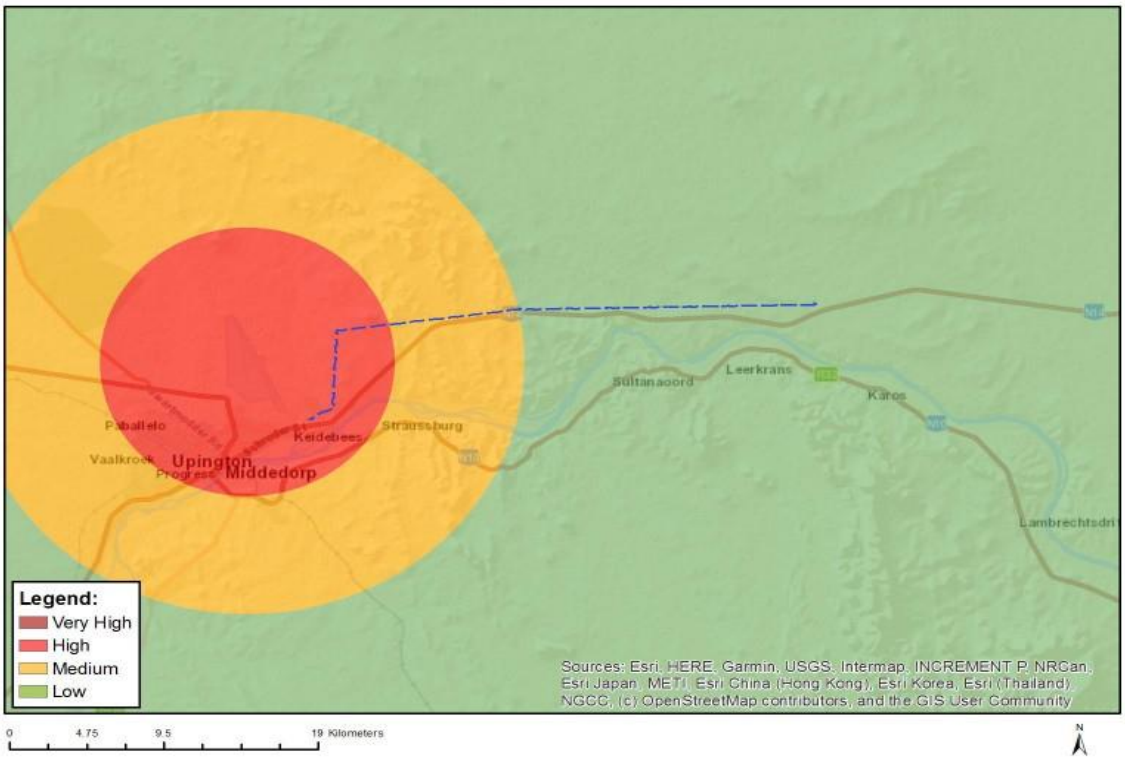


Figure 10: Civil aviation theme sensitivity according to the DFFE national web-based screening tool

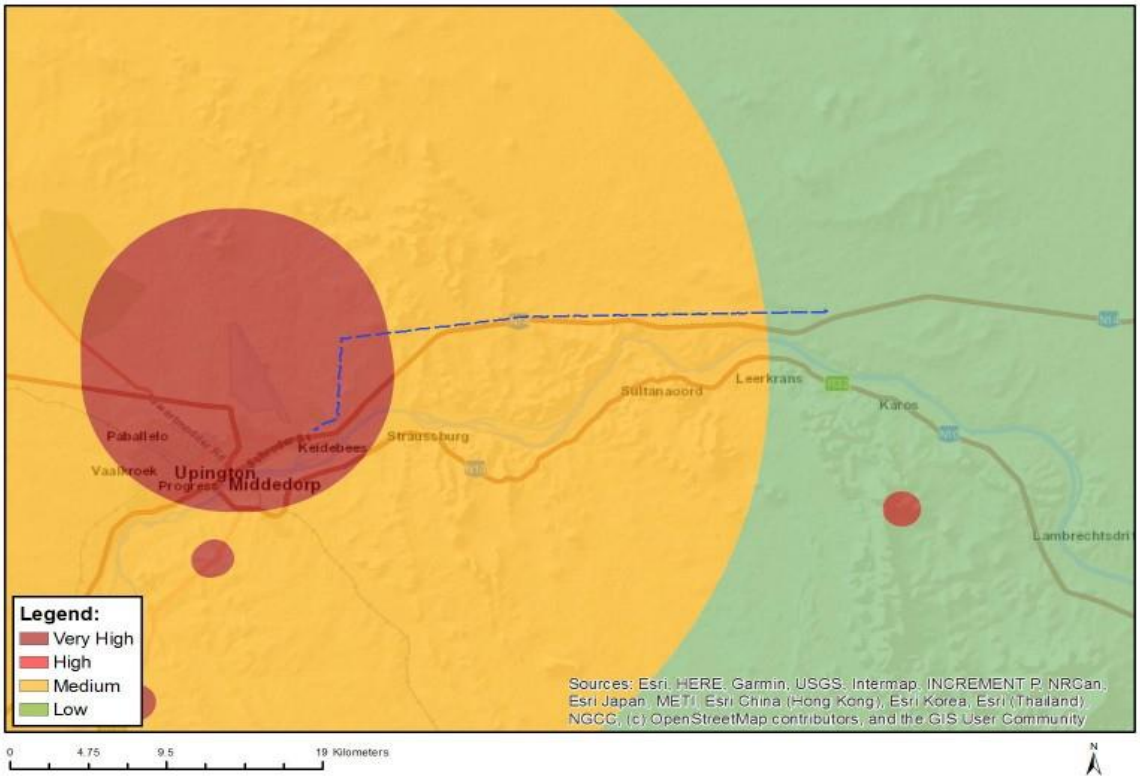


Figure 11: Defence theme sensitivity according to the DFFE national web-based screening tool

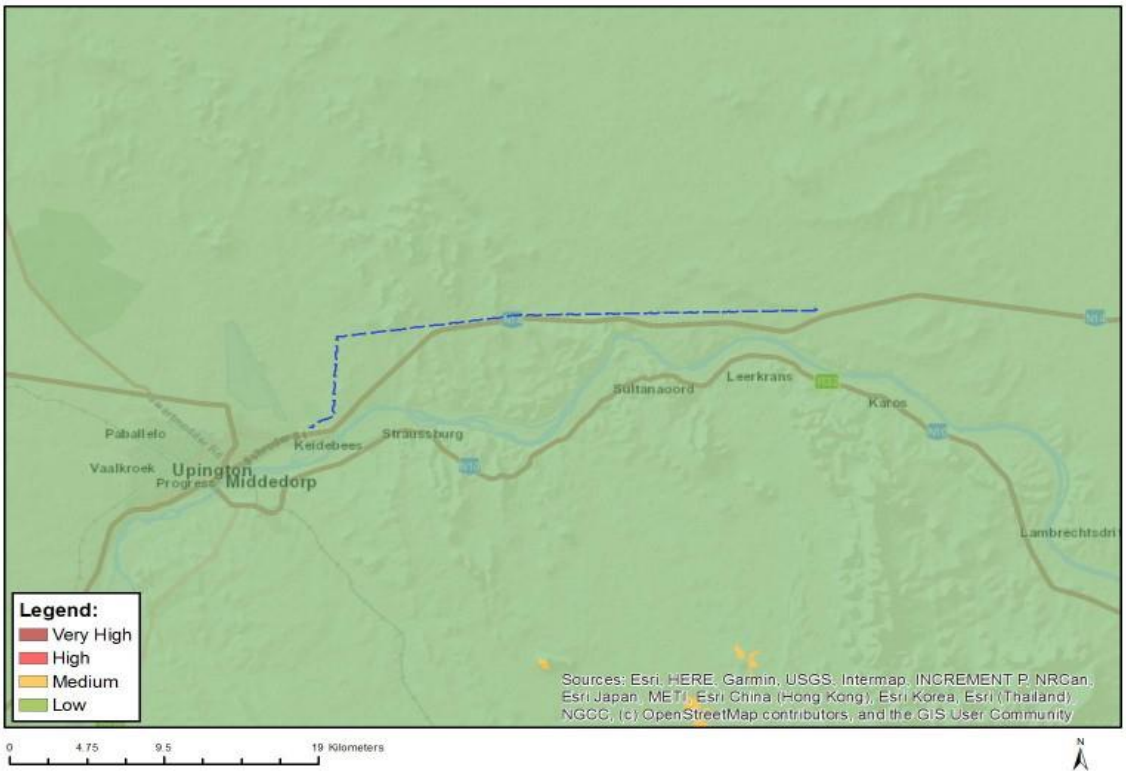


Figure 12: Plant species theme sensitivity according to the DFFE national web-based screening tool

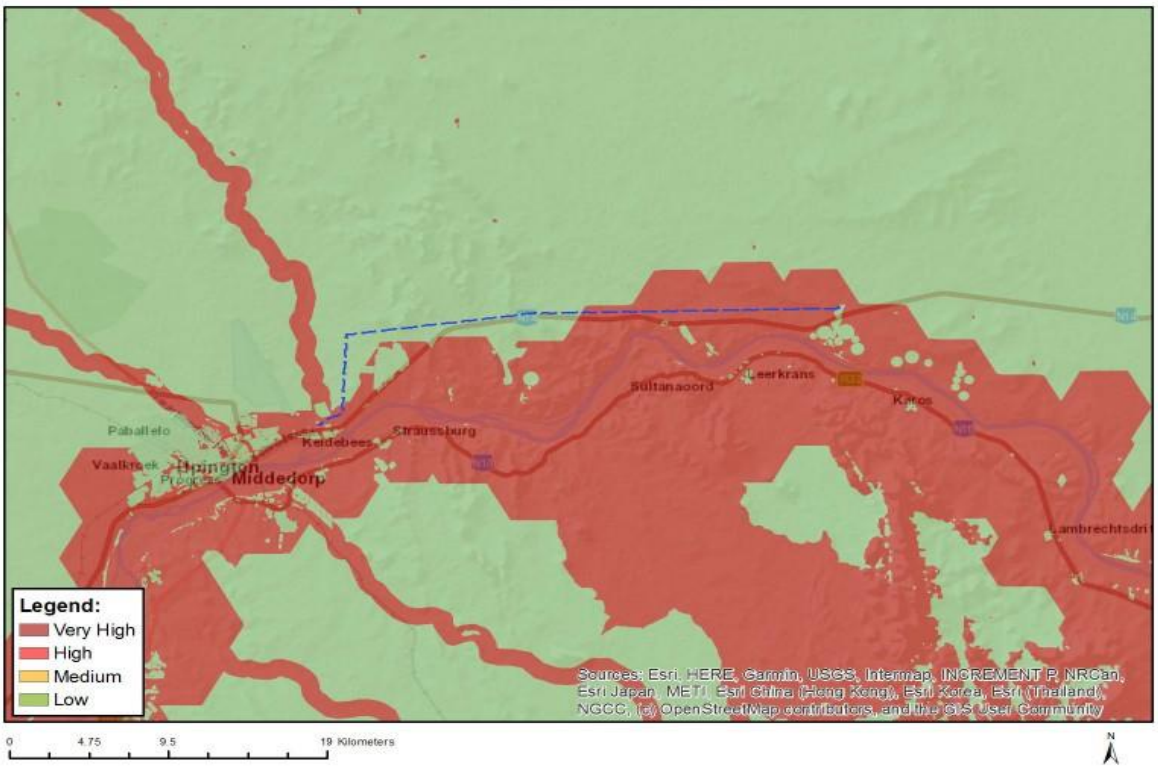


Figure 13: Terrestrial biodiversity theme sensitivity according to the DFFE national web-based screening tool.

The final site layout map inclusive of the environmental sensitivities is provided in the maps below, Map 1 – 5 (A3 maps are included in Appendix 5). The maps indicate the position of the pylons, existing Gordonia substation, Avondale substation to be constructed as part of the PV facility, existing and associated infrastructure (e.g. roads), sensitive environmental features, no-go areas and watercourses.

A full list of pylon coordinates is included in Appendix 7.

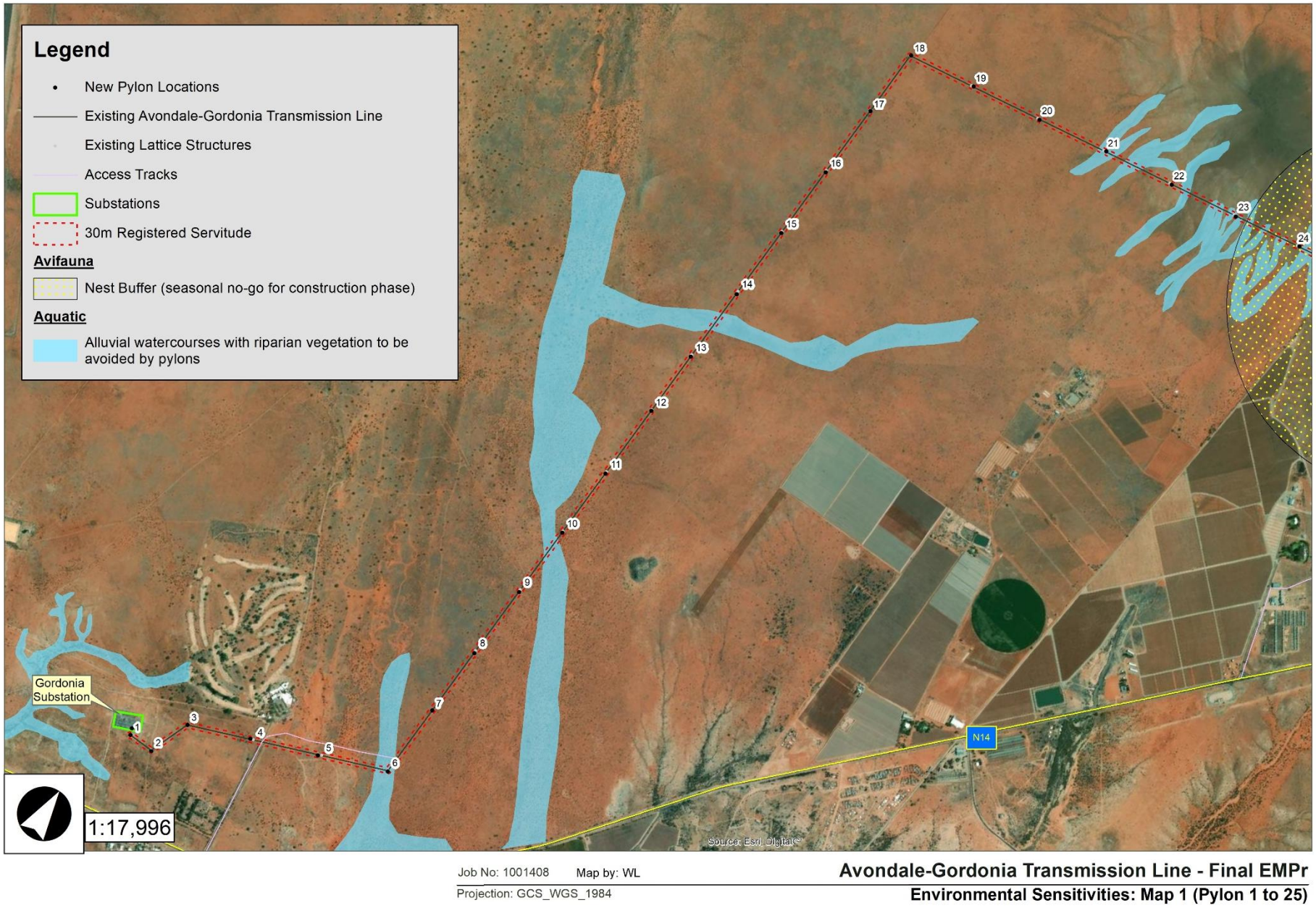


Figure 14: Final Site Layouot map with environmental sensitivities, map 1 (pylons 1 to 23). A3 included in Appendix 5.

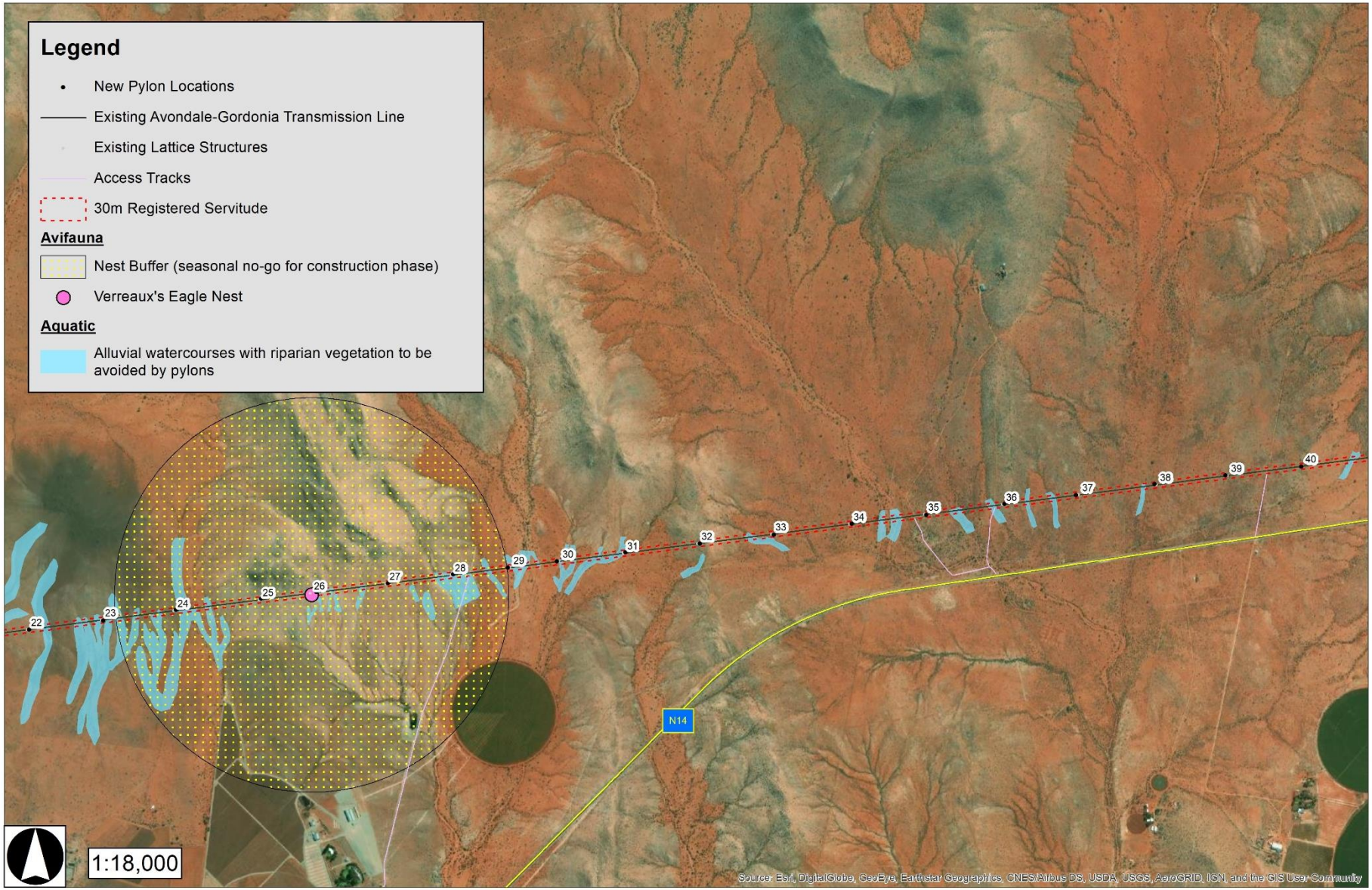


Figure 15: Combined sensitivity map 2 (pylons 23 to 39). A3 included in Appendix 5.

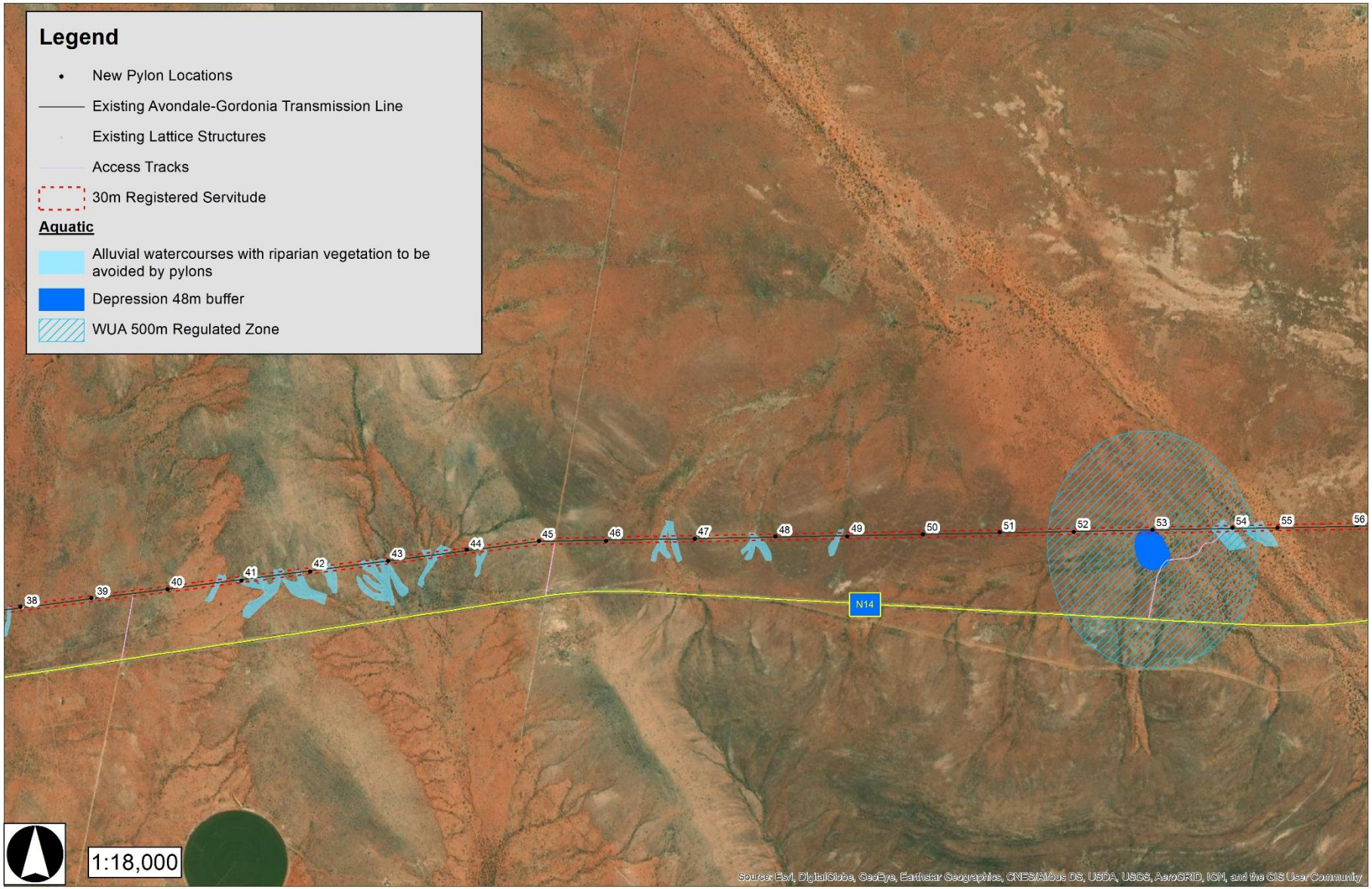
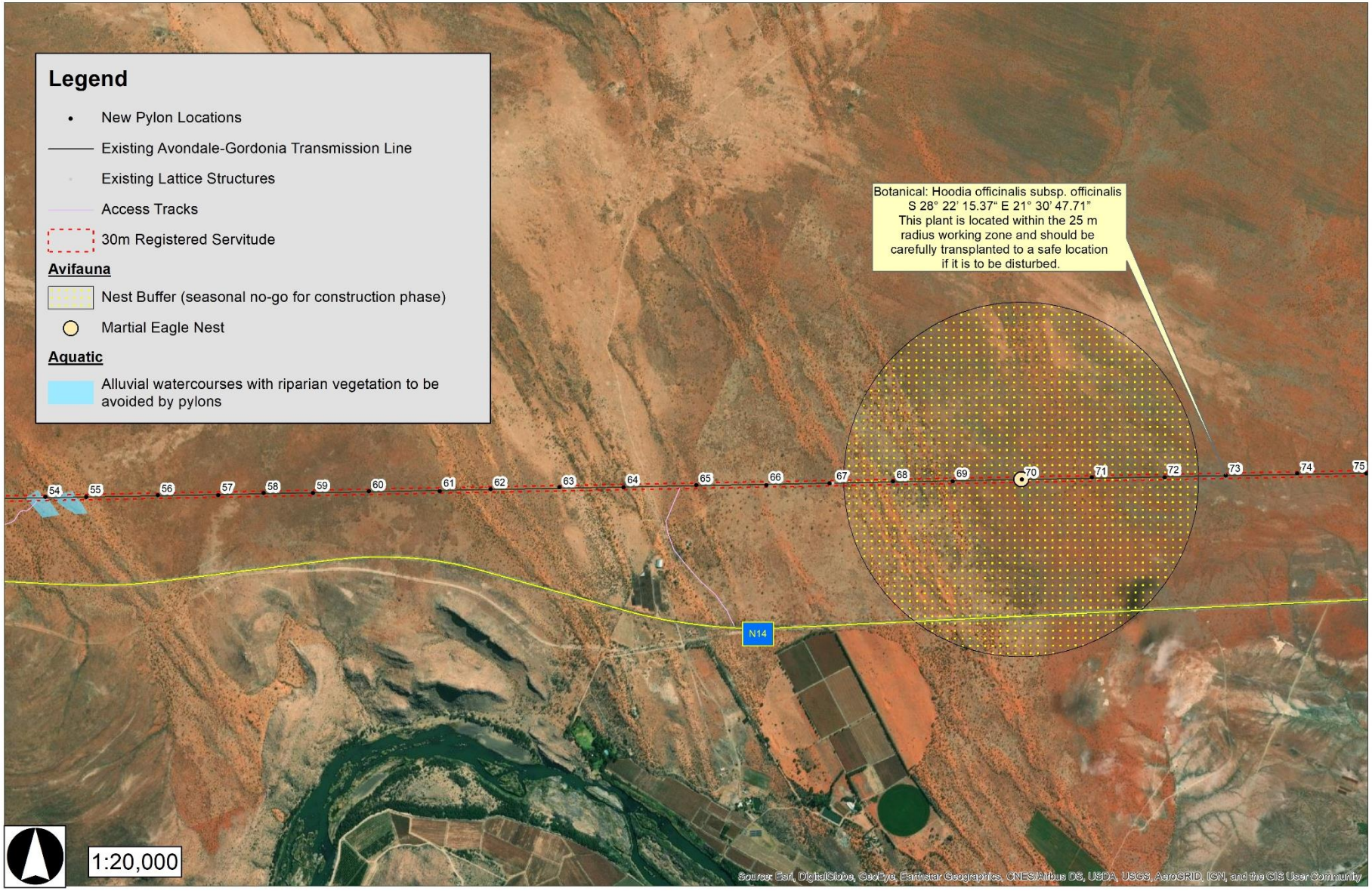


Figure 16: Combined sensitivity map 3 (pylons 39 to 55). A3 included in Appendix 5.



Job No: 1001408 Map by: WL

Projection: GCS_WGS_1984

Avondale-Gordonia Transmission Line - Final EMPr

Environmental Sensitivities: Map 4 (Pylon 56 to 73)

Figure 17: Combined sensitivity map 4 (pylons 56 to 73). A3 included in Appendix 5.

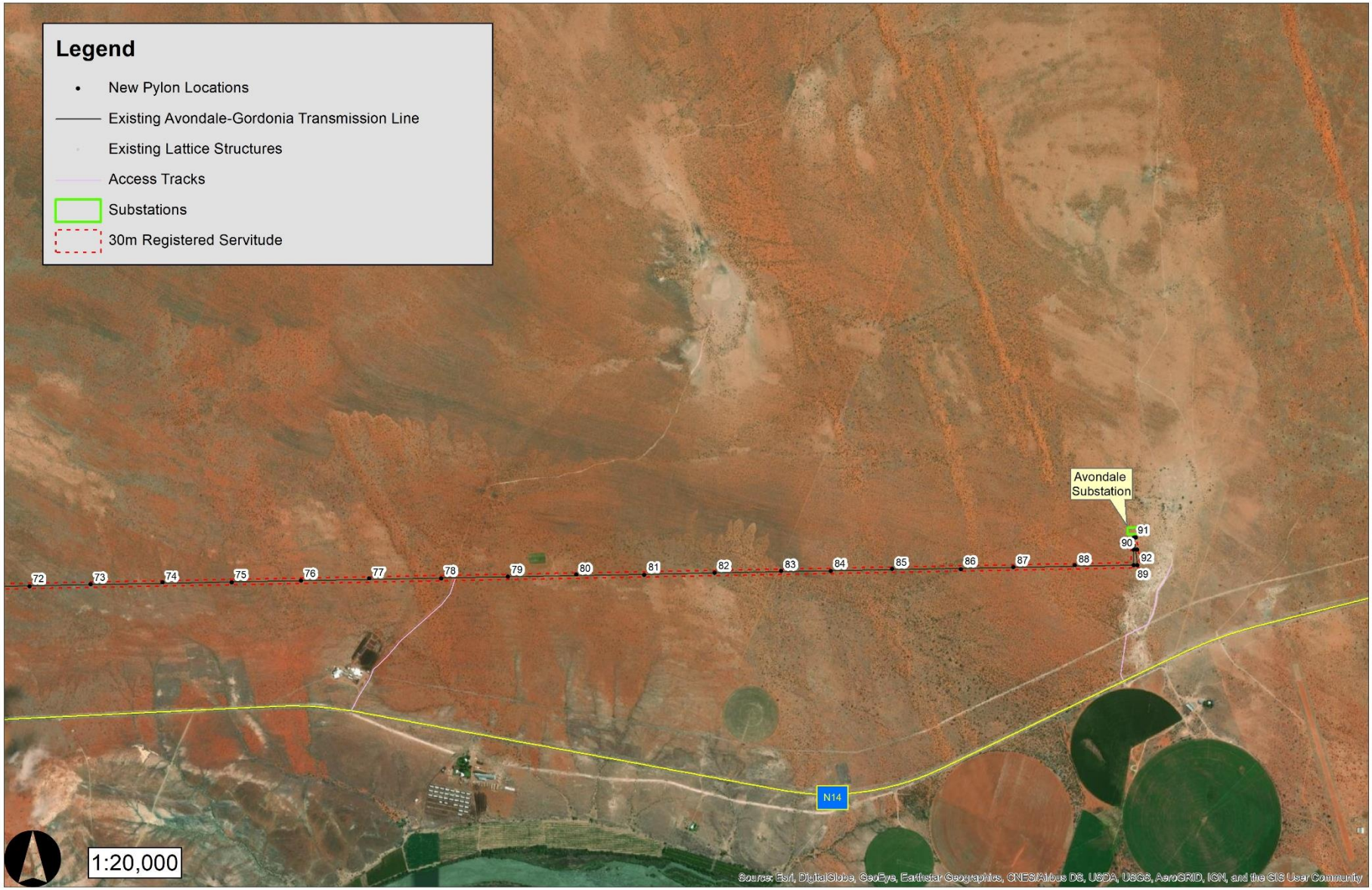


Figure 18: Combined sensitivity map 5 (pylons 73 to 92). A3 included in Appendix 5.

7.1 Sub-section 3: Declaration

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

Signature Proponent/applicant/ holder of EA Date:

Louis Dewavrin 11/01/2022

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

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

PART C

8 SITE-SPECIFIC ENVIRONMENTAL ATTRIBUTES

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

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

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

CONDITIONS OF THE ENVIRONMENTAL AUTHORISATION

A full copy of the EA is appended to this EMPr and can be viewed for the full list of the conditions of the EA that relate to:

- Commencement of the activity
- Frequency and process of updating the EMPr
- Monitoring (i.e. appointment of an ECO)'
- Recording and reporting to the Department
- Notification to authorities
- Operation of the facility
- Site closure and decommissioning

Detailed in Table 7.2 below are the EA conditions that specifically relate to Part C of this EMPr in order to illustrate compliance. Additional specific conditions of the EA are detailed in Table 7.3 below.

Table 7.2: EA conditions that specifically relate to Part C of this EMPr.

EA Item	Condition	Comment
14	*Part C (Site Specific Environmental Attributes) of the generic Environmental Management Programmes (EMPrs) for the upgrade of the Gordonia-Avondale 132kV transmission and all associated infrastructure, submitted as part of the final BAR dated October 2021, is not approved. Part C must be amended to include measures as dictated by the final site lay-out map and micro-siting, and the provisions of this environmental authorisation. Part C of the generic EMPrs must be made available for comments to registered Interested and Affected Parties and the holder of this environmental authorisation must*	Part C of this EMPr has been amended to include the conditions of the EA and is being made available to registered interested and affected parties (I&APs) for comment. Once the comment period is complete the final EMPr will be submitted to the DFFE for approval.

EA Item	Condition	Comment
	consider such comments. Once amended, the generic EMPrs must be submitted to the Department for written approval of Part C prior to commencement of the activity. Part C of the generic EMPrs must be amended to include the following:	
14.1	*The requirements and conditions of this environmental authorisation;*	The conditions of the EA have been incorporate into this EMPr.
14.2	*Measures as dictated by the final site lay-out map and micro-siting;*	The specialists did not recommend micro-siting, nor did they indicate micro-siting as a requirement to be undertaken due to the line being constructed along the centreline of the existing line. The final site layout map incorporates all the recommendations of the specialists as it relates to avoiding no-go areas.
14.3	*All recommendations and mitigation measures recorded in the BAR and the specialist reports as included in the final BAR dated October 2021;*	Refer to tables 8.1 to 8.4 below.
14.4	*All recommendations and mitigation measures to be implemented for the operational phase of the dangerous goods facility;*	The project does not include a dangerous goods facility.
14.5	*An effective monitoring system to detect any leakage or spillage of any hazardous substances during their transportation, handling, use or storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems;*	Monitoring aspects are adequately addressed in this generic EMPr and any additional monitoring requirements are included in the specialist recommendations in tables 8.1 to 8.4.
14.6	*A fire management plan to be implemented during the construction and operation of the facility;*	Fire management during construction is adequately addressed in the generic EMPr and no additional measures are recommended. The existing line is being managed under Eskom's management plans and the new line replacing the existing will also fall under this when operational.
14.7	*A re-vegetation and habitat rehabilitation plan. The plan must provide for restoration to be undertaken as soon as possible after completion of construction activities, to reduce the amount f habitat converted at*	Any additional monitoring requirements indicated by specialists have been included in the EMPr and (as stated by the

EA Item	Condition	Comment
	any one time and to speed up the recovery of natural habitats;	specialists) can be guided by an ECO. Refer to the Aquatic specialist's statement included in Appendix 6 specifically in this this regard. The botanical specialist stated that no active vegetation rehabilitation will be required and that passive rehabilitation (let nature take its course) will be sufficient for this project.
14.8	*An aquatic rehabilitation and monitoring plan, particularly for watercourse features that will be infilled and / or excavated;*	The aquatic specialist stated that monitoring and rehabilitation will sufficiently be addressed by the requirements contained in the generic EMPr. See Table 8.1 below.
14.9	*A stormwater management plan; and*	As stated by the aquatic specialist in Table 8.1 below, stormwater mitigation measures must be guided by the stormwater measures contained in the generic EMPr and implemented as per guidance from the ECO.
14.10	*The final site layout map.*	The final site layout map inclusive of environmental sensitivities is shown in Figures 15 to 19 with A3 maps included in Appendix 5.

8.1 Hydrology

Impact management outcome: The resource quality (flow, water quality, habitat and aquatic biota) of watercourses (rivers and their tributaries, natural channels, drainage lines, wetlands) are protected and incur minimal negative impact.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– The layout planning must take cognisance of the sensitivity layers as shown in Figures 11 to 15, to avoid these areas or cross such areas using existing tracks / roads or where the impacts would be low or can easily be mitigated. Where pylons cannot avoid the sensitive areas, or part thereof , identified during the BAR, special care must be taken during the works and ensure that all the mitigation measures included in the EMPr are strictly adhered to. The ECO will highlight each of these pylons to the contractor and carefully implement monitoring. The mitigation measures contained in the EMPr submitted with the Final BAR is sufficient to manage activities in these areas and must be adhered to; – Where new access roads are required, they should avoid aquatic features. The ECO must be consulted on site if any aquatic features are to be affected by monopole structures and a suitable location that avoids these features be determined in consultation with the project team. Stormwater mitigation measures must be guided by the stormwater measures contained in the generic EMPr and implemented as per guidance from the ECO. – The final detailed design and positions of the new monopole structures are to incorporate the aquatic sensitivities and avoid such areas and their respective buffer zones as authorised in the EA. – All alien plant re-growth, which is currently low within the greater region must be monitored and should it occur, these	DPM, DSS, Constrctor & cEO	Pre-construction planning and establishment of construction layout map. Clear indication to all workers of authorized access roads. Demarcation of sensitive areas and no-go areas. Induction presentation Toolbox talks	Pre-construction Weekly monitoring of actions during construction	dEO & ECO	Weekly	No disturbance of aquatic features. No additional access roads created. Adequate management of erosion. Proper management of stormwater. No signs of spread of alien invasive species.

plants must be eradicated within the project footprints and especially in areas near the proposed crossings; – Prosopis (alien invasive riparian tree) is prevalent, thus care must be taken in transporting any material, while ensuring that such materials is free of alien seed. Monitoring of alien plants is covered in the generic EMPr; – It is noted that the existing Eskom service track will be used to access the site. Should any vehicle have to drive outside of the existing track it must always avoid aquatic features or consult with the ECO for a suitable crossing where impacts will be the lowest. Site specific mitigations can be implemented as per the generic EMPr; – Stormwater mitigation measures must be guided by the stormwater measures contained in the generic EMPr and implemented as per guidance from the ECO; – Any stormwater systems or control measures must be inspected on an annual basis to ensure these are functional; – The ECO must conduct erosion monitoring of areas where the existing access track crosses aquatic features and implement control measures where necessary as per the generic EMPr; – Effective stormwater management must include measures to slow, spread and deplete the energy of concentrated flows thorough effective stabilisation and the re-vegetation of any disturbed areas; and – Transmission lines – Any areas disturbed during the operations of the transmission line, including the access tracks must be inspected on an annual basis for signs of erosion or scour. Where these are identified efforts to stabilise the areas (e.g. with reno mattresses, Gabions, Vegetation other suitable intervention) should be immediately implemented and monitored. It is suggested						

that all construction camps, lay down areas, batching plants or areas and any stores should be more 50 m from a watercourse and wetland. Chemicals used for construction must be stored safely on site and surrounded by bunds. Chemical storage containers must be regularly inspected so that any leaks are detected early; – Occurrences of erosion and sedimentation must be monitored during construction and addressed as soon as possible to avoid losing this material into the drainage lines; – Emergency plans must be in place in case of spillages onto road surfaces and water courses; – No stockpiling should take place within a water course; – All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds; – Stockpiles must be located away from river channels; and – The construction camp and necessary ablution facilities meant for construction workers must be beyond the 48 m buffer described previously.						

8.2 Avifauna

Impact management outcome: Minimise disturbance to avifauna.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– For the Verreaux's Eagle and Martial Eagle nests, alternative nesting platforms of appropriate design are to be designed and constructed in consultation with BirdLife South Africa (BLSA) and the Endangered Wildlife Trust (EWT) in the immediate vicinity of the existing nests – All vehicles must adhere to clearly defined and demarcated roads, no off-road driving should be allowed;	Contractor & cEO	Pre-construction survey Demarcation of sensitive areas and no-go areas.	Pre-construction, construction and operational phases.	dEO ECO	Monthly	Pre-construction survey report Approved method statements Visual inspections report

– Ensure that sufficient erosion control measures are constructed on all servitudes and access roads in the project area; – No open fires should be permitted outside of designated areas; – Dismantling activities (including site access) must not occur within 1 000m of the identified Verreaux's Eagle or Martial Eagle nests during the breeding period (May, June, July, August, September); – An area 1 000m from these nests must be clearly demarcated during these periods and considered to be temporary 'No-Go' areas; – Speed limits (30 km/h) should be strictly enforced for heavy vehicles on the project site to reduce unnecessary noise; – Personnel camps should be lit with as little light as practically possible, with the lights directed downwards where appropriate to reduce disturbance of nocturnal birds; – The movement of personnel should be restricted to the demarcated areas on the project site; – No dogs or cats other than those of the landowners should be allowed on site; – An appointed Environmental Control Officer (ECO) must be trained by an avifaunal specialist to identify ground nesting species such as bustards and korhaans as well as the signs that indicate possible breeding by these species; – The ECO must make a concerted effort to look out for such breeding activities especially of Red List species; – If any additional Red List species are confirmed to be breeding (e.g. if a nest site is found), decommission activities within 500m of the breeding site must cease, and an avifaunal specialist is to be contacted immediately for further assessment of the situation and instruction on how to proceed; – Night driving must be avoided where possible;		Induction presentation and training Toolbox talks Approved BFD installed				Visual signage Barricading Proof of training

– Any holes dug should not be left open for extended periods of time to prevent entrapment of ground dwelling birds (especially chicks) and only be dug when required and filled in soon thereafter; – Site access should be controlled and no unauthorised persons should be allowed onto the site; – All personnel should undergo an initial environmental induction with regards to birds and in particular awareness about not harming or collecting species or eggs; – Any birds directly threatened by the dismantling activities should be removed to a safe location by the ECO or other suitably qualified person; – Pylons must conform to Eskom standards using bird friendly monopole structures fitted with appropriate bird perches on every pole to reduce the probability of electrocutions; – Flappers and bird flight diverters (BFDs) are to be attached to the new OHPL in the areas identified as high or very high SEI (5.2 km each side of the Verreaux's Eagle nest and 5 km each side of the Martial Eagle nest) to reduce the risk of collision particularly for sub-adult and recently fledged birds; – The most appropriate and up-to-date marking devices (such as flappers and BFDs) must be selected in consultation with the Endangered Wildlife Trust (EWT); – Attach appropriate marking devices along the new OHPL in accordance with installation guidelines to increase visibility; – Flappers and BFDs must be maintained and replaced where necessary, for the life span of the project; – An operational monitoring programme must be implemented and include regular monitoring (e.g. during maintenance activities) of the entire length of the OHPL for collision and electrocution incidents for the lifespan of the project; and						

– Any collision incidents must be recorded and reported to the EWT.						

8.3 Botanical

Impact management outcome: Minimise disturbance to botanical environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
– Acitve mitigation: Avoid disturbance of the red sand dune on the farm Uizip. Apart from this being unstable sand and moderately sensitive habitat, the landowner is also particularly concerned about disturbance if this habitat. – Passive mitigation: Clean each pylon construction site, re-apply topsoil and then leave it to let nature take its course. The grass seed in the soil will germinate and the 'white grasses' as described will colonize the disturbed sites. That will create conditions for shrubs to grow as well. – NO SEED OF FOREIGN GRASS SPECIES or other foreign 'rehabilitation species' should be introduced at any of the construction sites. – In addition, if any plant of mesquite (*Prosopis glandulosa* subsp. *torreyana*) are found post-construction, they should be removed. – Plant species at coordinates as per table below (taken from Botanical Assessment as part of BAR) must be demarcated and protected where possible. Where not feasible, permits need to be obtained to relocate these species.	Contractor & cEO	Pre-construction survey Demarcation of sensitive areas and no-go areas. Induction presentation and training on identification of protected species. Toolbox talks Active and passive mitigation measures adhered to.	Pre-construction, construction and operational phases.	dEO, cEO ECO	Weekly monitoring of protected species by cEO. Monthly monitoring of compliance by ECO.	Pre-construction survey report Approved method statements Visual inspections report Visual signage Barricading Proof of training

Table 3: Table of plant species observed on site including their coordinates and restrictions.

Species	Coordinates	Restrictions
Boscia foetida subsp. Foetida Boscia albitrunca trees (shepherds' tree, witgatboom)	S 28°22'11.43" E 21°34'25.90"	Do not disturb. Barricade for protection.
Boscia foetida subsp. foetida is located ± 20 m from the pylon.	S 28°22'11.89" E 21°34'11.36"	Do not disturb. Barricade for protection.
Boscia albitrunca tree is ± 10 m from the pylon on the west side.	S 28°22'12.28" E 21°33'47.87"	Do not disturb. Barricade for protection.
Vachellia erioloba (camel thorn - a young tree).	S 28°22'12.43" E 21°33'34.46"	Do not disturb. Barricade for protection.
A Boscia albitrunca tree is located ± 30 m from the pylon.	S 28°22'12.70" E 21°33'20.87"	Do not disturb. Barricade for protection.
A Boscia albitrunca tree was recorded, not close to the pylon but it should be avoided.	S 28° 22' 12.19 " E 21° 32' 58.54	Do not disturb. Barricade for protection.
A V. erioloba tree	S 28° 22' 12.7 " E 21° 32' 56.2"	Do not disturb. Barricade for protection.
B. albitrunca shrubby bush was recorded within the 25 m radius of the pylon.	S 28° 22' 13.14 " E 21° 32' 57.11"	Do not disturb. Barricade for protection.
B. foetida subsp. foetida was found almost smothered by Phaeoptilum spinosum. This bush-clump should be avoided.	S 28° 22' 13.01 " E 21° 32' 56.61"	Do not disturb. Barricade for protection.
B. foetida subsp. foetida shrub is located near the pylon.	S 28° 22' 13.1 " E 21° 32' 42.63"	This plant should be avoided if possible.
B. foetida subsp. foetida is found within the 25 m radius of the pylon.	S 28° 22' 13.79 " E 21° 32' 27.82"	Do not disturb. Barricade for protection.
Two trees of Boscia albitrunca were recorded not far from the pylon.	S 28° 22' 13.61 " E 21° 32' 13.96"	Do not disturb. Barricade for protection.
Two Boscia foetida subsp. foetida shrubs and a small Vachellia erioloba tree are nearby but not withing the working zone.	S 28°22'14.01" E 21°32'00.37"	Do not disturb. Barricade for protection.
Hoodia officinalis subsp. officinalis was found. This species is listed as Near Threatened in the Red List of South African Plants.	S 28° 22' 15.37" E 21° 30' 47.71"	This plant is located within the 25 m radius working zone and should be carefully transplanted to a safe location if it is to be disturbed.

A plant of Vachellia erioloba (camel thorn) is next to the pylon.	S 28°22'18.99" E 21°27'06.76"	This tree should not be disturbed or if so, a permit would be required.
A Vachellia erioloba sapling is growing at the base of the pylon.	S 28°22'27.68" E 21°23'38.97"	A permit would be needed to disturb this plant
Vachellia erioloba – Two trees close to the pylon on SE side.	S 28°22'32.17" E 21°22'58.31"	Should be avoided or a permit would be required for disturbance or removal.
A young tree of Vachellia erioloba is growing at the base of the pylon.	S 28°22'16.12" E 21°29'51.40"	A permit would be required to remove this plant.
Two young Vachellia erioloba trees are within the 25 m working zone.	S 28°22'16.52" E 21°29'39.07"	A permit would be required to remove this plant.
Vachellia erioloba is close to the pylon so should be avoided is possible.	S 28°22'16.75" E 21°29'12.60"	A permit would be required to remove this plant.
V. erioloba – young tree at the base of the pylon	S 28°22'17.04" E 21°28'58.11"	A permit would be required to remove this plant.
young V. erioloba tree close to the pylon	S 28°22'18.70" E 21°27'19.16"	A permit would be required to remove this plant.
A Vachellia erioloba tree is within the 25 m working zone.	S 28°23'13.81" E 21°18'31.67"	A permit would be required to remove this plant.
A well-developed V. erioloba tree with White-browed Sparrow-weaver nests is near the pylon	S 28°24'30.43" E 21°18'27.30"	A permit would be required to remove this plant.
An old Boscia albitrunca tree is outside the 25 m working zone and must be avoided.	S 28°25'21.45" E 21°18'24.70"	Do not disturb Barricade for protection
Aloe claviflora – a single clump that must be conserved since this is a protected species	S 28°25'53.38" E 21°17'38.43"	Do not disturb Barricade for protection
Euphorbia braunsii (protected)	S 28°25'53.62" E 21°17'43.32"	This protected plant should be moved and transplanted to a suitable site if avoidance is not possible.

8.4 Heritage

Impact management outcome: Minimise disturbance to heritage resources and recommended by SAHRA.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
- 38(4)a – The SAHRA Archaeology, Palaeontology and Meteorites (APM) Unit has no objections to the proposed development; - 38(4)b – The recommendations of the specialists are supported and must be adhered to. No further additional specific conditions are provided for the development; - 38(4)c(i) – If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule; - 38(4)c(ii) – If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA and item 5 of the Schedule; - 38(4)d – See section 51 of the NHRA for offences; - 38(4)e – The following conditions apply with regards to the appointment of specialists: - With reference to the mitigation work noted above, a qualified archaeologist must be appointed to undertake the work in terms of the permit applied for as noted above;	Contractor & cEO If remains are discovered a qualified archaeologist must be appointed to undertake the work	Contact SAHRA should any remains or unmarked graves be unearthed. Induction presentation and training on identification of protected species. Toolbox talks	Pre-construction and construction	dEO, cEO ECO	Continuous monitoring during excavation activities.	Visual inspections report Appointment of archaeologist if needed Proof of training

- If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA;						

8.5 Specific Conditions of the EA

Impact management outcome: Minimise potential impacts to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Condition 37: Disturbance of the ref sand dune on the Farm Uizip 413 must be avoided.	This condition is covered in Table 8.3 above.					
Condition 38: Bird Flight Diverters are to be attached to the transmission line for a distance of at least 5.2km each side of the Verreaux's Eagle nests and 5km each side of the Martial Eagle nests.	This condition is covered in Table 8.2 above.					
Condition 39: For the Verreaux;s Eagle and Martial Eagle nests, alternative nesting platforms of appropriate design must be designed and constructed in consultation with BirdLife South Africa (BLSA) and the Endangered Wildlife Trust (EWT) in the immediate vicinity of the existing nests.	This condition is covered in Table 8.2 above.					

Impact management outcome: Minimise potential impacts to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Condition 40: Pylon replacement activities (including site access) must not occur within 1 000m of the identified Verreaux's Eagle or Martial Eagle new nesting platforms during the breeding period (May, June, July, August, September).	This condition is covered in Table 8.2 above.					
Condition 41: An area 1 000m from the new nesting platforms must be clearly demarcated during these periods and considered to be temporary 'No-Go' areas.	This condition is covered in Table 8.2 above.					
Condition 42: *An appropriately qualified Terrestrial Ecologist, an Aquatic Ecologist, an Archaeologist, a Palaeontologist and an Avifaunal Specialist must be present for the 'walk-through' of the approved corridor, to identify spans that mitigate the impact of collisions and tower/pylon placements that avoid sensitive vegetation and watercourses.*	The specialists that informed the BAR process did not recommend that a walk-through to be undertaken post authorization as the alignment of the new transmission line will be exactly the same as the previous one and potential impacts associated with the placement of new pylons can mitigated to acceptable levels by the mitigation measures identified during the BAR process and included in this EMPr. Impacts on aquatic sensitive features can be appropriately mitigated by the requirements contained in this EMPr and confirmed by the specialist in his statement (Appendix 6). Impacts on any sensitive vegetation are addressed by the generic requirements of this EMPr and additional measures included in Table 8.3.					
Condition 43: *The final route alignment must be submitted to this Department prior to construction commencing.*	The new transmission line will follow the exact alignment of the existing line and therefore be placed inside the existing servitude. The final route alignment is available in Figures 15 to 19 with A3 maps included in Appendix 5.					
Condition 44:	The Contractor and cEO	Ensure any such areas (if needed) is placed as per	Construction phase	dEO ECO	Once off and monitor as required should new	ECO Report with photographic evidence

Impact management outcome: Minimise potential impacts to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
All construction camps, lay down areas, batching plants, or areas and any sites must be more than 32m from any demarcated water courses and 50m from a wetland. [Note that the establishment of a site camp for the transmission line alone will not be required and the lay down area for the Avondale PV facility will be used.]		the recommendation. Method Statements should be submitted for approval, where required.			areas be established	
Condition 45: *Anti-collision devices such as bird flappers must be installed where the power line crosses avifaunal corridors. The input of an avifaunal specialist must be obtained from the fitting of the anti-collision devices onto specific sections of the line once the exact positions of the towers have been surveyed and pegged.*	No avifaunal corridors have been identified for the project and appropriate anti-collision devices are proposed in Table 8.2 above. Should new avifaunal corridors be identified during construction an avifaunal specialist must be consulted.					
Condition 46: *A permit must be obtained from the relevant nature conservation agency for the removal or destruction of any indigenous protected and endangered plant and animal species if required.*	ECO	Apply for permit from provincial authority	Pre-construction	DPM	Once off	Proof of permits
Condition 47: *Ablution facilities must be placed outside of the 1:100 year floodline of a watercourse.*	DSP cEO	Consult with ECO regarding ablution placement	Throughout construction	dEO ECO	Weekly	ECO Report with photographic evidence

Impact management outcome: Minimise potential impacts to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Condition 48: *No exotic plants may be used for rehabilitation purposes. Only indigenous plants occurring within a ten (10) kilometre radios of the development site must be utilised.* **[Note the botanist did not recommend active seeding and rehabilitation.]**	Contractor and cEO	Source seeds from reliable source based on seed list informed by ECO	When rehabilitation is needed.	ECO	When rehabilitation is needed	ECO Report with photographic evidence Proof of seeds ordered and name of supplier
Condition 49: Vegetation clearing must be kept to an absolute minimum. Mitigation measures must be implemented to reduce the risk of erosion and the invasion of alien species.	Contractor	Demarcate areas to be cleared	On-going as clearing is occurring.	ECO	On-going	ECO Report with photographic evidence
Condition 50: Construction must include design measures that allow surface and subsurface movement of water along the drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.	Refer to Table 8.1 for aquatic specialist recommendations regarding stormwater management. The generic EMPr measures sufficiently address stormwater management for the project.					
Condition 51: An integrated waste management approach must be implemented that is based on waste minimization and must incorporate reduction, recycling, re-use and disposal where appropriate.	Waste management is sufficiently address is Section 5.8 of this EMPr and is based on waste minimisation, reduction and recycling.					

Impact management outcome: Minimise potential impacts to the environment.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of implementation**	**Timeframe for implementation**	**Responsible person**	**Frequency**	**Evidence of compliance**
Condition 52: Any solid waste, which will not be recycled, must be disposed of at a landfill licensed in terms of section 20 (b) of the National Management Waste Act, 2008 (Act No. 59 of 2008). No waste material may be left on site after construction.	Refer to Section 5.8 of the EMPr.					
Condition 53: If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, fossils or other categories of heritage resources are found during construction, the South African Heritage Resources Agency (SAHRA) must be alerted immediately, and a professional archaeologist or palaeontologist, must be contracted to inspect the findings.	A chance fossil finds procedure is included in Appendix 3 and heritage mitigations to mitigate the proposed impact is included in Table 8.4 above.					
Condition 53: The recommendations of the EAP in the BAR dated October 2021 and the specialist studies attached must be adhered to. In the event of any conflicting mitigation measures and conditions of the Environmental Authorisation, the specific condition of this Environmental Authorisation will take preference.	The recommendations of the EA has been incorporated into the EMPr.					

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.
An example of a method statement template is provided below.

METHOD STATEMENT

CONTRACT: **DATE:**

PROPOSED ACTIVITY (give title of method statement and reference number from specification)

WHAT WORK IS TO BE UNDERTAKEN (give a brief description of the works):

WHERE ARE THE WORKS TO BE UNDERTAKEN (where possible, provided an annotated plan and a full description of the extent of the works):

START AND END DATE OF THE WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED:

START DATE:	**END DATE:**

HOW ARE THE WORKS TO BE UNDERTAKEN (provide as much detail as possible, including annotated sketches and plans where possible)

Wynand Loftus

Senior Consultant

Qualifications

MTech Nature Conservation

BTech Nature Conservation

NDip Nature Conservation

Aquaculture Certificate

Professional registrations

Professional Environmental Assessment Practitioner with the Environmental Assessment Practionioners Association of South Africa (EAPASA)

Professional Scientist, South African Council for Natural Scientific Professions (SACNSP)

Member, International Association for Impact Assessment South Africa (IAIAsa)

Specialisation

Impact Assessments, Environmental Management Programmes (EMPr), Environmental Control Officer (ECO) and Legislation

7

years in industry

Wynand is an environmental scientist with more than seven years' experience in environmental science, including environmental management, environmental impact assessments (EIAs), and environmental regulatory compliance. He has been involved in a range of projects across South Africa, including EIAs for municipal civil infrastructure and housing, renewable energy developments and environmental auditing and compliance monitoring.

He is experienced in managing full EIA processes, including, amongst others, compiling cost proposals for environmental advisory services; client interaction; budget management; conducting public participation processes (PPPs); compiling project reports such as EIA reports and environmental management programmes (EMPrs); and compiling of environmental maps in ArcView GIS.

Wynand is an experienced environmental control officer (ECO) on various infrastructure and borrow pit projects, with expertise in, amongst others, auditing and monitoring environmental compliance on site, compiling environmental audit reports, and conducting environmental induction training with contractors.

He obtained a Master of Technology in Nature Conservation in 2013 and a Bachelor of Technology in 2011, both from the Nelson Mandela Metropolitan University (NMMU) in South Africa. He is registered as a professional scientist with the South African Council for Natural Scientific Professions (SACNASP) and is a member of the International Association for Impact Assessment South Africa (IAIAsa).

Experience

Strengthening of TR1/1 George-Oudshoorn, Western Cape, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works (DTPW), 2018-2022, Senior Consultant.

Zutari was appointed by the Department of Transport and Public Works: Roads Infrastructure Branch of the Western Cape Government (WCG) to undertake full engineering services of the strengthening of TR1/1 – George to Oudtshoorn. Part of the works included conducting a Basic Assessment environmental process in order to obtain authorisation for Listed Activities triggered in terms of the environmental legislation. The current road is becoming unsafe, is unable to handle current traffic volumes, crosses a number of watercourses and the proposed upgrades will impact both watercourses and natural vegetation in the areas. As such the Basic Assessment is required. Responsible for managing the environmental process in its entirety – compiling all reports, authority correspondence, public participation and financial management.

Upgrade of the Avondale-Gordonia 132kV transmission line, Upington, Northern Cape Province, South Africa, EDF Renewables (Umoyilanga (Pty) Ltd), Senior Consultant

Umoyilanga (Pty) Ltd appointed Zutari to undertake the requisite Basic Assessment (BA) process for the upgrading of the Gardonia-Avondale transmission line. Eskom requires that Umoyilanga (Pty) Ltd, a preferred bidder selected as part of the DMRE Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP), upgrade a portion of the existing 132 kV Gordonia-Garona transmission line as part of the works required for connecting the new Avondale Hybrid Solar project to the grid. Responsible for managing the requisite Basic Assessment in its entirety - compiling all reports, authority correspondence, public participation and financial management.

The Improvements and Management of Gravel Roads for 2020/21, 2021/22 and 2022/23, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works (DTPW), Senior Consultant/Environmental Control Officer (ECO

Zutari was appointed to assist the Western Cape DTPW with the improvement and management of gravel roads on the provincial road network. Main role on the appointment is ECO work on gravel roads – environmental induction and training, monitoring compliance with the EMPr, providing environmental advisory services and ensuring that rehabilitation is done, and that mining takes places to ensure good rehabilitation can be achieved. Also assist the DTPW with obtaining landowner approvals for temporary expropriation of land for gravel mining.

Namdeb wind monitoring campaign, Namibia, Namdeb, 03/2020 - 12/2021, Senior Consultant to Project Manager

Zutari was appointed to investigate conduct a technical pre-feasibility study of a wind farm to provide electricity for Namdeb's diamond mines along the southern Namibian coastline. Responsible for compilation of environmental screening report and submission to the Namibian Ministry of Environment, Forestry and Tourism.

Nuweveld wind farms, Western Cape Province, South Africa, Red Cap Energy (Pty) Ltd (Red Cap), 03/2019 - 12/2021, Senior Consultant to Project Manager

Appointed to facilitate three environmental impact assessments (EIAs) for the proposed Nuweveld wind farms, and to undertake one basic assessment (BA) process for an approximately 120 km gridline connection. Involved with all delivery related tasks, including compiling reports, full responsibility for the Environmental management Programme (EMPr), conducting site inspections, conducting public participation processes and managing spatial data.

Materials supply for gravel roads, Western Cape Province, South Africa, Provincial Government of the Western Cape (PGWC): Department of Transport and Public Works (DTPW), 02/2015 - 02/2021, Senior Consultant/Environmental Control Officer (ECO)

Appointed to assist with the material supply and planning, design and control aspects for the maintenance of gravel roads in the Central Karoo and Eden District Municipalities. Services include engineering geology, environmental studies, materials source identification and project management. The contract primarily entails locating and proving suitable material sources for the re-gravelling of 300 km and maintenance activities of 45 000 km of all gravel roads in the two identified district municipalities. Obtaining approval for the use of material sources was a challenge due to the associated environmental and legal aspects, where legal approval was required from the Department of Mineral Resources (DMR) and from the Department of Environmental Affairs and Development Planning (DEADP). Responsible for carrying out basic assessment (BA) processes to apply for environmental authorisation and mining permits from the DMR. The BA included all relevant authority correspondence and public participation processes (PPPs). Also responsible for carrying out environmental control officer (ECO) duties at various borrow pits throughout the Garden Route and Central Karoo District Municipalities, including site inspections, compiling monthly ECO reports, monitoring mining activities, and corresponding with the two district municipalities.

Environmental advisory services to the Mossel Bay Local Municipality, Western Cape Province, South Africa, Mossel Bay Local Municipality, 01/2019 - 06/2021, Senior Consultant

Appointed on a municipal panel to provide environmental advisory services, including environmental impact assessments (EIAs), basic assessments (BAs) and environmental management programmes (EMPrs). Responsible for compiling and submitting an environmental applicability checklist to the local environmental, competent authority. Also responsible for facilitating the BA and EIA processes.

Environmental advisory services to George Local Municipality, Western Cape Province, South Africa, George Local Municipality, 02/2019 - 02/2021, Senior Consultant

Appointed to carry out the basic assessment (BA) environmental process for remedial works along Rooidraai Road in Herolds Bay. Responsible for compiling basic assessment reports (BARs), the public participation process (PPP), and the application form. Duties include corresponding with and managing environmental specialists and liaising with environmental competent authority.

Mossel Bay Upgrading of Informal Settlements Programme (UISP), Western Cape Province, South Africa, Mossel Bay Local Municipality, 01/2017 - 12/2019, Senior Consultant

Appointed to provide project management services for informal settlement upgrading in the Mossel Bay Local Municipality via the UISP, as a follow on to the National Upgrading Support Programme (NUSP). Aurecon's scope of works included the project planning, procurement of requisite planning and environmental permissions and implementation oversite for 22 informal settlements. Responsible for coordinating environmental processes and project management, including four (4) Section 24G processes and one (1) amendment application, facilitating specialist inputs and assessments, and corresponding and interacting with relevant organs of state and authorities.

Basic assessment (BA) for the Koeris Wind Energy Facility (WEF) temporary fuel storage facility, Northern Cape Province, South Africa, Mainstream Renewable Power, 10/2018 - 10/2019, Senior Consultant

Appointed to facilitate the requisite basic assessment (BA) environmental process for the construction of a temporary fuel storage facility for the construction period of the Koeries Wind Energy Facility (WEF) in Springbok. Responsible for carrying out the full BA process, including compiling a basic assessment report (BAR) and environmental management programme (EMPr), conducting a full public participation process (PPP) and carrying out all project management related duties.

Environmental planning and compliance for the Working for Wetlands Programme 2017-2019, National, South Africa, Department of Environmental Affairs (DEA), 11/2016 - 06/2019, Senior Consultant

Zutari, in association with GroundTruth, was appointed to undertake the planning and approval processes for the Working for Wetlands Programme for the period 2017-2019. The programme has been mandated to rehabilitate damaged wetlands and to protect pristine wetlands. The methodology followed constitutes three phases. The coarse-scale planning (Phase 1) entails the identification of degraded wetlands for rehabilitation purposes; the detailed planning (Phase 2) is for the identification and design of rehabilitation interventions and obtaining environmental authorisations in terms of the National Environmental Management Act no 107 of 1998 (NEMA) and Phase 3, the provision of implementation support, includes setting out and signing off constructed interventions and monitoring and evaluating wetland rehabilitation projects. Responsible for the compilation of basic assessment reports (BARs), the public participation process (PPP) and application form as well as conducting site inspections.

Ladismith West flood damage repair, Western Cape Province, South Africa, Hatch Goba, 01/2016 - 03/2017, Environmental Control Officer (ECO)

The project entailed providing environmental control officer (ECO) services for the construction and repair of stream crossings along a provincial road. Work was carried out within watercourses and sound environmental management was particularly important. Responsible for conducting site inspections and compiling the ECO reports to ensure compliance with the environmental maintenance management plan (MMP). Also responsible for conducting environmental induction training with the contractor and his staff,

informing them of the environmental sensitivity of the site, identifying no-go areas, and educating staff on the importance of practising sound environmental management.

Saffraan Rivier maintenance management plan (MMP), Western Cape Province, South Africa, Private client, 2015 - 03/2017, Consultant/Environmental Control Officer (ECO)

The appointment involved providing environmental advisory services to a private landowner in Oudtshoorn, including correspondence with the competent authority and the compilation of a road management plan and an environmental maintenance management plan (MMP) for the property. Responsible for compiling a road rehabilitation plan and MMP for the farm and acting as environmental control officer (ECO) on the river rehabilitation and alien clearing activities.

Midbrak sewer upgrades and pump station (Great Brak River), Western Cape Province, South Africa, V3 Consulting Engineers, 2016 - 03/2017, Environmental Control Officer (ECO)

The project involved providing environmental control officer (ECO) services for the construction of a main sewer line and pump station. Responsible for conducting site inspections and compiling ECO reports, the post-construction audit report, and post-rehabilitation audit reports. The rehabilitation comprised the re-planting a variety of coastal forest species along the pipeline alignment and watering the plants every fortnight. Also responsible for conducting environmental induction training with the contractor and his staff, informing them of the environmental sensitivity of the site, identifying no-go areas and educating staff on the importance of practising sound environmental management.

Environmental audit for the Garden Route Casino, Western Cape Province, South Africa, Garden Route Casino, 07/2018 - 06/2019, Senior Consultant

The project involved providing environmental advisory services and the complete requisite environmental audit for the Garden Route Casino and determining the best way forward for the casino to comply with its responsibilities. Responsible for correspondence with the local environmental competent authority regarding the regulatory environmental audit requirements applicable to the Garden Route Casino. Also responsible for carrying out the environmental audit, compiling an audit report and submitting the report to the competent authority.

Beaufort West 22 kV power lines, Western Cape Province, South Africa, Eskom, 2015 - 2016, Environmental Control Officer (ECO)

The project involved providing environmental control officer (ECO) services for the construction of six 22 kV powerlines through undeveloped land in Beaufort West. Responsible for ECO services.

Environmental impact assessment (EIA) for the extension of ashing facilities at Kriel Power Station, Mpumalanga Province, South Africa, Eskom, 08/2016 - 11/2017, Senior Consultant

Appointed to undertake an environmental impact assessment (EIA) for the extension of an ash dam facility at the Kriel Power Station. The EIA was postponed after the scoping phase was completed in 2011 due to further geotechnical investigation being required for the preferred site. In 2016, Aurecon's appointment was amended to allow for a new EIA process to be undertaken in terms of the latest environmental legislation. Responsible for comparing 2014 National Environmental Management Act (NEMA) EIA regulations with the amended 2017 NEMA EIA Regulations and listing similarly listed activities.

Environmental impact assessment (EIA) for the Hotazel Solar Park, Northern Cape Province, South Africa, juwi Renewable Energies (Pty) Ltd, 05/2016 - 10/2017, Senior Consultant

The project comprised entailed an environmental impact assessment (EIA) for the development of a 200 MW solar photovoltaic (PV) facility, including a utility scale battery storage facility, as well as transmission line. Aurecon's services included environmental management and advisory, transport assessments, hydrological assessments and stormwater planning. Responsible for assisting the project leader with public participation process (PPP).

Herold Meander mixed-use development, Western Cape Province, South Africa, Sonqua Consulting, 01/2016 - 03/2017, Consultant

The project involved a mixed-used development (i.e. agricultural village) comprising various agricultural components, including amongst others hops farming, small scale product processing, flower farming, honey farming, an aquaculture facility, and grazing for livestock). The housing component and infrastructure included package plant wastewater treatment works (WWTWs), a reservoir and pipelines. The development also has various tourism activities and a community hall. Responsible for carrying out the scoping and environmental impact assessment (EIA) processes, which included compiling environmental reports, and public participation and project management duties such as specialist management and consultation with authorities.

Basic assessment (BA) process for the Bitou Public Safety Centre, Western Cape Province, South Africa, SMEC, 2015 - 2016, Consultant

The project involved a full basic assessment (BA) process for the Bitou Public Safety Centre in Plettenberg Bay. Responsible for compiling reports, including the basic assessment report (BAR) and environmental management plan (EMP); conducting a full public participation process (PPP); and all project management related duties.

Brandwacht Mediclinic amendment application, Western Cape Province, South Africa, Atterbury Property Developments, 2015 - 2016, Consultant

The project involved a Part 2 amendment application process, which included compiling an impact statement report and public participation, for the Brandwacht Mediclinic in Stellenbosch. The original decision was appealed and therefore an amendment application was submitted via the Western Cape Minister of Environmental Affairs' Office. Responsible for coordinating the amendment application process.

Uitvlug Section 24G application, Western Cape Province, South Africa, Private client, 2014 - 2016, Consultant

The project involved carrying out a full environmental Section 24G process for the illegal construction of a road and vegetation clearance in Oudtshoorn. Responsible for carrying the Section 24G rectification process.

Henque waste management licence (WML), Western Cape Province, South Africa, Henque Waste, 2015, Consultant

Responsible for carrying out a full waste management licence (WML) application for a waste management and sorting facility.

Sonskynvallei Phase 3 municipal housing project, Western Cape Province, South Africa, Mossel Bay Local Municipality, 2014 - 2015, Consultant

The project entailed providing environmental advisory services and carrying out a full basic assessment (BA) environmental process for the municipal housing development in Sonskynsvallei. Infrastructure upgrades associated with the project included increasing the capacity of an existing water reservoir, and constructing a new bulk water pipeline and sewer rising main. Specialist assessments included archaeological, botanical, heritage, traffic and visual assessments. Responsible for carrying out a full BA process, including the compilation of environmental reports such as a basic assessment report (BAR) and environmental management programme (EMPr); conducting a full public participation process (PPP) and all project management related duties, including specialist management and consultation with authorities.

Golden Valley Municipal Housing Project, Western Cape Province, South Africa, George Local Municipality, 2014, Consultant

The project entailed providing environmental advisory services and carrying out a full basic assessment (BA) environmental process for the municipal housing development in Golden Valley, Blanco, George. The project proposal included the establishment of serviced erven, streets and top structures. Responsible for carrying out a full BA process, including the compilation of environmental reports such as a basic assessment report (BAR) and environmental management programme (EMPr); conducting a full public

participation process (PPP) and all project management related duties, including specialist management and consultation with authorities.

Conville Municipal Housing Project, Western Cape Province, South Africa, George Local Municipality, 2014, Consultant

The project entailed providing environmental advisory services and carrying out a full basic assessment (BA) environmental process for the municipal housing development comprising of Community Residential Units (CRU, 2 storey walk-ups) in Conville, George. Responsible for carrying out a full BA process, including the compilation of environmental reports such as a basic assessment report (BAR) and environmental management programme (EMPr); conducting a full public participation process (PPP) and all project management related duties, including specialist management and consultation with authorities.

Thembalethu N2 Municipal Housing Project, Western Cape Province, South Africa, George Local Municipality, 2014, Consultant

The project entailed providing environmental advisory services and carrying out a full basic assessment (BA) environmental process for the municipal housing development in Golden Valley, Blanco, George. The project proposal included the establishment of serviced erven, streets and top structures. Responsible for carrying out a full BA process, including the compilation of environmental reports such as a basic assessment report (BAR) and environmental management programme (EMPr); conducting a full public participation process (PPP).

Metrogrounds Municipal Housing Project, Western Cape Province, South Africa, George Local Municipality, 2014, Consultant

The project entailed providing environmental advisory services and carrying out a full basic assessment (BA) environmental process for the municipal housing development in Golden Valley, Blanco, George. The project proposal included the establishment of serviced erven, streets and top structures. Responsible for carrying out a full BA process, including the compilation of environmental reports such as a basic assessment report (BAR) and environmental management programme (EMPr); conducting a full public participation process (PPP) and all project management related duties, including specialist management and consultation with authorities.

Erf 325 East Municipal Housing Project Amendment Application, Western Cape Province, South Africa, George Local Municipality, 2014 - 2017, Consultant

Compilation of Impact Statement Report in support of an application to amend the existing Environmental Authorisation and assist the project manager with public participation related tasks e.g. placing adverts and compiling and distributing notifications.

Pre-Feasibility Environmental Constraints Analysis for George Municipality Housing Infill, Western Cape Province, South Africa, George Local Municipality, 2014 - 2017, Consultant

Investigated various proposed infill housing sites throughout George. Compilation of a pre-feasibility constraints report which included presenting the sites spatially with all the relevant (and available) desktop based environmental GIS information and determining whether further environmental investigations in terms of NEMA would be required. A recommendation relating to the required environmental approvals were also made.

APPENDIX 3: CHANCE FOSSIL FINDS PROCEDURE

Monitoring Programme for Palaeontology – to commence once the excavations begin.

1. The following procedure is only required if fossils are seen on the surface and when excavations commence.

2. When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the project activities will not be interrupted.

3. Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones (for example see Figures 4, 5). This information will be built into the EMP's training and awareness plan and procedures.

4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.

5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.

6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits.

7. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to SAHRA once the project has been completed and only if there are fossils.

8. If no fossils are found and the excavations have finished then no further monitoring is required.

forestry, fisheries
& the environment
Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X 447· PRETORIA ·0001· Environment House ·473 Steve Biko Road, Arcadia· PRETORIA

DFFE Reference: 14/12/16/3/3/1/2416
Enquiries: Ms Thabile Sangweni
Telephone: (012) 399 9409 **E-mail:** Tsangweni@dffe.gov.za

Mr Louis Dewavrin
Umoyilanga (Pty) Ltd
Waterfront Business Park
Building 5 – Ground Floor
1204 Humerail
PORT ELIZABETH
6000

Telephone Number: (041) 506 4900
Email Address: louis.dewavrin@edf-re.co.za

PER EMAIL

Dear Mr Dewavrin

ENVIRONMENTAL AUTHORISATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, ACT NO. 107 OF 1998, AS AMENDED: FOR THE UPGRADE OF THE GORDONIA-AVONDALE 132kV TRANSMISSION LINE, UPINGTON, NORTHERN CAPE

With reference to the above application, please be advised that the Department has decided to grant authorisation. The Environmental Authorisation (EA) and reasons for the decision are attached herewith.

In terms of Regulation 4(2) of the Environmental Impact Assessment Regulations, 2014, as amended (the EIA Regulations), you are instructed to notify all registered interested and affected parties, in writing and within fourteen (14) days of the date of the decision, of the Department's decision as well as the provisions regarding the submission of appeals that are contained in the Regulations.

In terms of the Promotion of Administrative Justice Act, Act No. 3 of 2000, you are entitled to the right to fair, lawful and reasonable administrative action; and to written reasons for administrative action that affects you negatively. Further your attention is drawn to the provisions of the Protection of Personal Information Act, Act No. 4 of 2013 which stipulates that the Department should conduct itself in a responsible manner when collecting, processing, storing and sharing an individual or another entity's personal information by holding the Department accountable should the Department abuses or compromises your personal information in any way.

Your attention is drawn to Chapter 2 of the National Environmental Management Act, Act No. 107 of 1998 National Appeal Regulations published under Government Notice R993 in Government Gazette No. 38303 dated 08 December 2014 (National Appeal Regulations, 2014), which prescribe the appeal procedure to be followed. Kindly include a copy of this document (National Appeal Regulations, 2014) with the letter of notification to interested and affected parties in this matter.

Should any person wish to lodge an appeal against this decision, he/she must submit the appeal to the appeal administrator, and a copy of the appeal to the applicant, any registered interested and affected party, and any organ of state with interest in the matter within 20 days from the date that the notification of the decision was sent to the registered interested and affected parties by the applicant; or the date that the notification of the decision was sent to the applicant by the Department, whichever is applicable.

Appeals must be submitted in writing in the prescribed form to:

The Director: Appeals and Legal Review of this Department at the below mentioned addresses.

By email: appeals@environment.gov.za;

By hand: Environment House
473 Steve Biko
Arcadia
Pretoria
0083; or

By post: Private Bag X447
Pretoria
0001

Please note that in terms of Section 43(7) of the National Environmental Management Act, Act No. 107 of 1998, as amended, the lodging of an appeal will suspend the environmental authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged, you may not commence with the activity until such time that the appeal is finalised.

To obtain the prescribed appeal form and for guidance on the submission of appeals, please visit the Department's website at https://www.environment.gov.za/documents/forms#legal_authorisations or request a copy of the documents at appeals@environment.gov.za.

Yours faithfully

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Forestry, Fisheries and the Environment
Date: 26/11/2021

cc:	Wynand Loftus	Zutari (Pty) Ltd	E-mail: Waynand.Loftus@zutari.com

forestry, fisheries & the environment

Department
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Environmental Authorisation

In terms of Regulation 20(1)(a) of the Environmental Impact Assessment Regulations, 2014, as amended

The upgrade of the Gordonia-Avondale 132kV Transmission Line near Upington within the Dawid Kruiper Local Municipality in the Northern Cape Province

ZF Mgcawu District Municipality

Authorisation register number:	*14/12/16/3/3/1/2416*
Holder of authorisation:	*Umoyilanga (Pty) Ltd*
Location of activity:	*Erf 4350 Upington;* *Portion 2 of Farm Koras 412;* *RE of Farm Uizip 413;* *Portion 7 of Farm Uitkomst 420;* *Portion 11 of Farm Uitkomst 420;* *RE of Farm Rouxville 605;* *RE of Farm Sandflats 653;* *RE of Farm Melkstroom 563;* *Portion 2 of Farm Kameelpoort 414;* *Portion 1 of Farm Avondale 410;* *Portion 18 of Farm UAP 418;* *Dawid Kruiper Local Municipality* *ZF Mgcawu District Municipality* *Northern Cape Province*

This authorisation does not negate the holder of the authorisation's responsibility to comply with any other statutory requirements that may be applicable to the undertaking of the activity.

Decision

The Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this Environmental Authorisation, that the applicant should be authorised to undertake the activities specified below.

Non-compliance with a condition of this Environmental Authorisation may result in criminal prosecution or other actions provided for in the National Environmental Management Act, Act No. 107 of 1998, as amended and the EIA Regulations, 2014, as amended.

Details regarding the basis on which the Department reached this decision are set out in Annexure 1.

Activities authorised

By virtue of the powers conferred on it by the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment Regulations, 2014, as amended, the Department hereby authorises –

UMOYILANGA (PTY) LTD

with the following contact details –

Mr Louis Dewavrin
Waterfront Business Park
Building 5 – Ground Floor
1204 Humerail
PORT ELIZABETH
6000

Telephone Number: (041) 506 4900
Email Address: louis.dewavrin@edf-re.co.za

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to undertake the following activities (hereafter referred to as "the activity") indicated in Listing Notice 1 and Listing Notice 3 of the EIA Regulations, 2014 as amended:

Activity number	Activity description
Listing Notice 1, Item 19: *"The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse."*	A number of the existing pylons are located inside a defined watercourse and removal of the existing foundations would result in the movement of more than $10m^3$ of soil within a watercourse.
Listing Notice 1, Item 48: *"The expansion of-* *(i) Infrastructure or structures where the physical footprint is expanded by 100 square metres or more; where such expansion occurs-* *(a) within a watercourse;* *(b) in front of a development setback; or* *(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse."*	Upgrading of the line will result in the expansion of pylon footprints in excess of $100m^2$ and will take place within 32m of the watercourses at the site as delineated by the aquatic specialist.
Listing Notice 3, Item 12: *"The clearance of an area of 300 square metres or mote of indigenous vegetation within* *(i) The Northern Cape* *ii. Within Critical Biodiversity Areas identified in bioregional plans."*	±58 of the existing pylons are located inside a CBA. Should the same number of new pylons be constructed inside the CBA it would result in the clearance of $371m^2$ of indigenous vegetation.
Listing Notice 3, Item 23: *"The expansion of—* *(ii) infrastructure or structures where the physical footprint is expanded by 10 square metres or more; where such expansion occurs—* *(a) within a watercourse;*	Pylons to be upgraded inside a CBA are located within 32m of a watercourse and the expansion of the pylon footprints in these areas would be in excess of $10m^2$.

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(c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; *(i) Northern Cape* *i. sensitive areas."*	

as described in the Basic Assessment Report (BAR) dated October 2021 at:

21 Digit SG Code

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C	0	2	8	0	0	0	0	0	0	0	0	0	4	2	0	0	0	0	0	7
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C	0	2	8	0	0	0	0	0	0	0	0	0	4	1	4	0	0	0	0	2
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- for the upgrade of the Gordonia-Avondale 132kV Transmission Line near Upington in the Northern Cape Province, hereafter referred to as "the property".

The development will comprise the following:

- Transmission line and pylon structures;
- Pylon foundations;
- Substations;
- Access and service roads;
- Temporary laydown areas and site camps;
- Specifications for bird flight diverters installation on a power line; and
- Provision of services required during construction i.e. labour, water supply and waste.

Conditions of this Environmental Authorisation

Scope of authorisation

1. The upgrade of the Gordonia-Avondale 132kV Transmission Line near Upington in the Northern Cape Province, as described above is hereby approved.
2. Authorisation of the activity is subject to the conditions contained in this environmental authorisation, which form part of the environmental authorisation and are binding on the holder of the authorisation.
3. The holder of the authorisation is responsible for ensuring compliance with the conditions contained in this environmental authorisation. This includes any person acting on the holder's behalf, including but not limited to, an agent, servant, contractor, sub-contractor, employee, consultant or person rendering a service to the holder of the authorisation.
4. The activities authorised may only be carried out at the property as described above.
5. Any changes to, or deviations from, the project description set out in this environmental authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further environmental authorisation in terms of the regulations.
6. The holder of an environmental authorisation must apply for an amendment of the environmental authorisation with the competent authority for any alienation, transfer or change of ownership rights in the property on which the activity is to take place.
7. This activity must commence within a period of ten (10) years from the date of issue of this environmental authorisation. If commencement of the activity does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activity to be undertaken.
8. Construction must be completed within five (5) years of the commencement of the activity on site.
9. Commencement with one activity listed in terms of this environmental authorisation constitutes commencement of all authorised activities.

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Notification of authorisation and right to appeal

10. The holder of the authorisation must notify every registered interested and affected party, in writing and within 14 (fourteen) calendar days of the date of this Environmental Authorisation, of the decision to authorise the activity.
11. The notification referred to must –
    11.1. specify the date on which the authorisation was issued;
    11.2. inform the interested and affected party of the appeal procedure provided for in the National Appeal Regulations, 2014;
    11.3. advise the interested and affected party that a copy of the authorisation will be furnished on request; and
    11.4. give the reasons of the Competent Authority for the decision.

Commencement of the activity

12. The authorised activity shall not commence until the period for the submission of appeals has lapsed as per the National Appeal Regulations, 2014, and no appeal has been lodged against the decision. In terms of Section 43(7), an appeal under Section 43 of the National Environmental Management Act, Act No. 107 of 1998, as amended will suspend the Environmental Authorisation or any provision or condition attached thereto. In the instance where an appeal is lodged you may not commence with the activity until such time that the appeal has been finalised.

Management of the activity

13. A final site layout plan for the upgrade of the Gordonia-Avondale 132kV transmission and all associated infrastructure, as determined by the detailed engineering phase and micro-siting of the power line route and pylon structures, and all mitigation measures as dictated by the final site layout plan, must be submitted to the Department for approval prior to construction. A copy of the final site layout map must be made available for comments to registered Interested and Affected Parties and the holder of this environmental authorisation must consider such comments. Once amended, the final development layout map must be submitted to the Department for written approval prior to commencement of the activity. All available biodiversity information must be used in the finalisation of the layout map. Existing infrastructure must be used as far as possible e.g., roads. The layout map must indicate the following:

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13.1. The position of the substation (indicating the Independent Power Producer's Section and Eskom's section, if applicable);

13.2. The final delineation of the centreline of the power line within the approved corridor;

13.3. The specific position of the pylon structures and foundation footprints;

13.4. All existing infrastructure on the site, especially roads;

13.5. All heritage/palaeontology sites identified as significant;

13.6. All associated infrastructure within the assessed study area, including the service road, the expanded sections of the existing roads and bridges, O&M buildings, including the dangerous goods facility, and temporary laydown areas. The dimensions of the structures must be indicated;

13.7. All sensitive environmental features that will be affected by the transmission power line;

13.8. All watercourse areas (inclusive of buffers); and

13.9. All "no-go" and buffer areas.

14. Part C (Site Specific Environmental Attributes) of the generic Environmental Management Programmes (EMPrs) for the upgrade of the Gordonia-Avondale 132kV transmission and all associated infrastructure, submitted as part of the final BAR dated October 2021, is not approved. Part C must be amended to include measures as dictated by the final site lay-out map and micro-siting, and the provisions of this environmental authorisation. Part C of the generic EMPrs must be made available for comments to registered Interested and Affected Parties and the holder of this environmental authorisation must consider such comments. Once amended, the generic EMPrs must be submitted to the Department for written approval of Part C prior to commencement of the activity. Part C of the generic EMPrs must be amended to include the following:

14.1. The requirements and conditions of this environmental authorisation;

14.2. Measures as dictated by the final site lay-out map and micro-siting;

14.3. All recommendations and mitigation measures recorded in the BAR and the specialist reports as included in the final BAR dated October 2021;

14.4. All recommendations and mitigation measures to be implemented for the operational phase of the dangerous goods facility;

14.5. An effective monitoring system to detect any leakage or spillage of any hazardous substances during their transportation, handling, use or storage. This must include precautionary measures to limit the possibility of oil and other toxic liquids from entering the soil or storm water systems;

14.6. A fire management plan to be implemented during the construction and operation of the facility;

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14.7. A re-vegetation and habitat rehabilitation plan. The plan must provide for restoration to be undertaken as soon as possible after completion of construction activities, to reduce the amount of habitat converted at any one time and to speed up the recovery to natural habitats.

14.8. An aquatic rehabilitation and monitoring plan, particularly for watercourse features that will be infilled and / or excavated;

14.9. A stormwater management plan; and

14.10. The final site layout map.

15. Once approved the generic EMPrs must be implemented and adhered to. They shall be seen as dynamic documents and shall be included in all contract documentation for the development.

16. Changes to the approved EMPrs must be submitted in accordance with the EIA Regulations applicable at the time.

17. The Department reserves the right to amend the approved EMPrs, should any impacts that were not anticipated or covered in the BAR be discovered.

Frequency and process of updating the EMPr

18. The EMPr must be updated where the findings of the environmental audit reports, contemplated in Condition 29 below, indicate insufficient mitigation of environmental impacts associated with the undertaking of the activity, or insufficient levels of compliance with the environmental authorisation or EMPr.

19. The updated EMPr must contain recommendations to rectify the shortcomings identified in the environmental audit report.

20. The updated EMPr must be submitted to the Department for approval together with the environmental audit report, as per Regulation 34 of GN R. 982. The updated EMPr must have been subjected to a public participation process, which process has been agreed to by the Department, prior to submission of the updated EMPr to the Department for approval.

21. In assessing whether to grant approval of an EMPr which has been updated as a result of an audit, the Department will consider the processes prescribed in Regulation 35 of GN R.982 as amended. Prior to approving an amended EMPr, the Department may request such amendments to the EMPr as it deems appropriate to ensure that the EMPr sufficiently provides for avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.

22. The holder of the authorisation may apply for an amendment of an EMPr, if such amendment is required before an audit is required. The amendment process is prescribed in Regulation 37 of GN R.982, as

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amended. The holder of the authorisation must request comments on the proposed amendments to the impact management outcomes of the EMPr or amendments to the closure objectives of the closure plan from potentially interested and affected parties, including the competent authority, by using any of the methods provided for in the Act for a period of at least 30 days.

Monitoring

23. The holder of the authorisation must appoint an experienced Environmental Control Officer (ECO) for the construction phase of the development that will have the responsibility to ensure that the mitigation/rehabilitation measures and recommendations referred to in this environmental authorisation are implemented and to ensure compliance with the provisions of the approved EMPr.
24. The ECO must be appointed before commencement of any authorised activities.
25. Once appointed, the name and contact details of the ECO must be submitted to the Director: Compliance Monitoring of the Department at Directorcompliance@environment.gov.za.
26. The ECO must keep record of all activities on site, problems identified, transgressions noted and a task schedule of tasks undertaken by the ECO.
27. The ECO must remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.

Recording and reporting to the Department

28. All documentation e.g. audit/monitoring/compliance reports and notifications, required to be submitted to the Department in terms of this environmental authorisation, must be submitted to the Director: Compliance Monitoring of the Department at Directorcompliance@environment.gov.za.
29. The holder of the environmental authorisation must, for the period during which the environmental authorisation and EMPr remain valid, ensure that project compliance with the conditions of the environmental authorisation and the EMPr are audited, and that the audit reports are submitted to the Director: Compliance Monitoring of the Department at Directorcompliance@environment.gov.za.
30. The frequency of auditing and of submission of the environmental audit reports must be as per the frequency indicated in the EMPr, taking into account the processes for such auditing as prescribed in Regulation 34 of GN R. 982, as amended.

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31. The holder of the authorisation must, in addition, submit environmental audit reports to the Department within 30 days of completion of the construction phase (i.e. within 30 days of site handover) and a final environmental audit report within 30 days of completion of rehabilitation activities.
32. The environmental audit reports must be compiled in accordance with Appendix 7 of the EIA Regulations, 2014, as amended, and must indicate the date of the audit, the name of the auditor and the outcome of the audit in terms of compliance with the environmental authorisation conditions as well as the requirements of the approved EMPr.
33. Records relating to monitoring and auditing must be kept on site and made available for inspection to any relevant and competent authority in respect of this development.

Notification to authorities

34. A written notification of commencement must be given to the Department no later than fourteen (14) days prior to the commencement of the activity. Commencement for the purposes of this condition includes site preparation. The notice must include a date on which it is anticipated that the activity will commence, as well as a reference number.

Operation of the activity

35. A written notification of operation must be given to the Department no later than fourteen (14) days prior to the commencement of the activity operational phase.

Site closure and decommissioning

36. Should the activity ever cease or become redundant, the holder of the authorisation must undertake the required actions as prescribed by legislation at the time and comply with all relevant legal requirements administered by any relevant and competent authority at that time.

Specific conditions

37. Disturbance of the red sand dune on the Farm Uizip 413 must be avoided.
38. Bird Flight Divertors are to be attached to the transmission line for a distance of at least 5.2km each side of the Verreaux's Eagle nests and 5km each side of the Martial Eagle nests.

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39. For the Verreaux's Eagle and Martial Eagle nests, alternative nesting platforms of appropriate design must be designed and constructed in consultation with BirdLife South Africa (BLSA) and the Endangered Wildlife Trust (EWT) in the immediate vicinity of the existing nests.
40. Pylon replacement activities (including site access) must not occur within 1 000m of the identified Verreaux's Eagle or Martial Eagle new nesting platforms during the breeding period (May, June, July, August, September).
41. An area 1 000m from the new nesting platforms must be clearly demarcated during these periods and considered to be temporary 'No-Go' areas.
42. An appropriately suitably qualified Terrestrial Ecologist, an Aquatic Ecologist, an Archaeologist, a Palaeontologist and an Avifaunal Specialist must be present for the 'walk-through' of the approved corridor, to identify spans that mitigate the impact of collisions and tower/pylon placements that avoid sensitive vegetation and watercourses.
43. The final route alignment must be submitted to this Department prior to construction commencing.
44. All construction camps, lay down areas, batching plants or areas and any stores must be more than 32m from any demarcated water courses and 50m from a wetland.
45. Anti-collision devices such as bird flappers must be installed where the power line crosses avifaunal corridors. The input of an avifaunal specialist must be obtained for the fitting of the anti-collision devices onto specific sections of the line once the exact positions of the towers have been surveyed and pegged.
46. A permit must be obtained from the relevant nature conservation agency for the removal or destruction of any indigenous protected and endangered plant and animal species if required.
47. Ablution facilities must be placed outside of the 1:100 year floodline of a watercourse.
48. No exotic plants may be used for rehabilitation purposes. Only indigenous plants occurring within a ten (10) kilometre radius of the development site must be utilised.
49. Vegetation clearing must be kept to an absolute minimum. Mitigation measures must be implemented to reduce the risk of erosion and the invasion of alien species.
50. Construction must include design measures that allow surface and subsurface movement of water along drainage lines so as not to impede natural surface and subsurface flows. Drainage measures must promote the dissipation of storm water run-off.
51. An integrated waste management approach must be implemented that is based on waste minimisation and must incorporate reduction, recycling, re-use and disposal where appropriate.
52. Any solid waste, which will not be recycled, must be disposed of at a landfill licensed in terms of section 20 (b) of the National Environment Management Waste Act, 2008 (Act No. 59 of 2008). No waste material may be left on site after construction.

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53. If any evidence of archaeological sites or remains (e.g., remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, marine shell and charcoal/ash concentrations), unmarked human burials, fossils or other categories of heritage resources are found during construction, the South African Heritage Resources Agency (SAHRA) must be alerted immediately, and a professional archaeologist or palaeontologist, must be contacted to inspect the findings.
54. The recommendations of the EAP in the BAR dated October 2021 and the specialist studies attached must be adhered to. In the event of any conflicting mitigation measures and conditions of the Environmental Authorisation, the specific condition of this Environmental Authorisation will take preference.

General

55. A copy of this environmental authorisation, the audit and compliance monitoring reports, and the approved EMPr, must be made available for inspection and copying-
    55.1. at the site of the authorised activity;
    55.2. to anyone on request; and
    55.3. where the holder of the environmental authorisation has a website, on such publicly accessible website.
56. National government, provincial government, local authorities or committees appointed in terms of the conditions of this authorisation or any other public authority shall not be held responsible for any damages or losses suffered by the holder of the authorisation or his/her successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the holder of the authorisation with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.

Date of environmental authorisation: 26/11/2021

Mr Sabelo Malaza
Chief Director: Integrated Environmental Authorisations
Department of Forestry, Fisheries and the Environment

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Annexure 1: Reasons for Decision

1. Information considered in making the decision

In reaching its decision, the Department took, *inter alia,* the following into consideration -

a) The listed activities as applied for in the application form received on 20 August 2021.
b) The information contained in the BAR dated October 2021.
c) The comments received from interested and affected parties as included in the BAR dated October 2021.
d) Mitigation measures as proposed in the BAR and the EMPr dated October 2021.
e) The information contained in the specialist studies contained within the appendices of the BAR dated October 2021.

2. Key factors considered in making the decision

All information presented to the Department was taken into account in the Department's consideration of the application. A summary of the issues which, in the Department's view, were of the most significance is set out below.

a) The findings of all the specialist studies conducted and their recommended mitigation measures.
b) The need for the proposed project stems from the evacuation of electricity from the Avondale Hybrid Solar Facility to the national grid.
c) The BAR dated October 2021 identified all legislations and guidelines that have been considered in the preparation of the BAR.
d) The methodology used in assessing the potential impacts identified in the BAR dated October 2021 and the specialist studies have been adequately indicated.
e) A sufficient public participation process was undertaken and the applicant has satisfied the minimum requirements as prescribed in the EIA Regulations, 2014, as amended for public involvement.

3. Findings

After consideration of the information and factors listed above, the Department made the following findings -

a) The identification and assessment of impacts are detailed in the BAR dated October 2021 and sufficient assessment of the key identified issues and impacts have been completed.
b) The procedure followed for impact assessment is adequate for the decision-making process.
c) The information contained in the BAR dated October 2021 is deemed to be accurate and credible.

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d) The proposed mitigation of impacts identified and assessed adequately curtails the identified impacts.

e) EMPr measures for the pre-construction, construction and rehabilitation phases of the development were proposed and included in the BAR dated October 2021 and will be implemented to manage the identified environmental impacts during the construction phase.

In view of the above, the Department is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the authorised activities will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the National Environmental Management Act, Act No. 107 of 1998, as amended, and that any potentially detrimental environmental impacts resulting from the authorised activities can be mitigated to acceptable levels. The environmental authorisation is accordingly granted.

Legend

- New Pylon Locations
- Existing Avondale-Gordonia Transmission Line
- Existing Lattice Structures
- Access Tracks
- Substations
- 30m Registered Servitude

Avifauna

- Nest Buffer (seasonal no-go for construction phase)

Aquatic

- Alluvial watercourses with riparian vegetation to be avoided by pylons

Gordonia Substation

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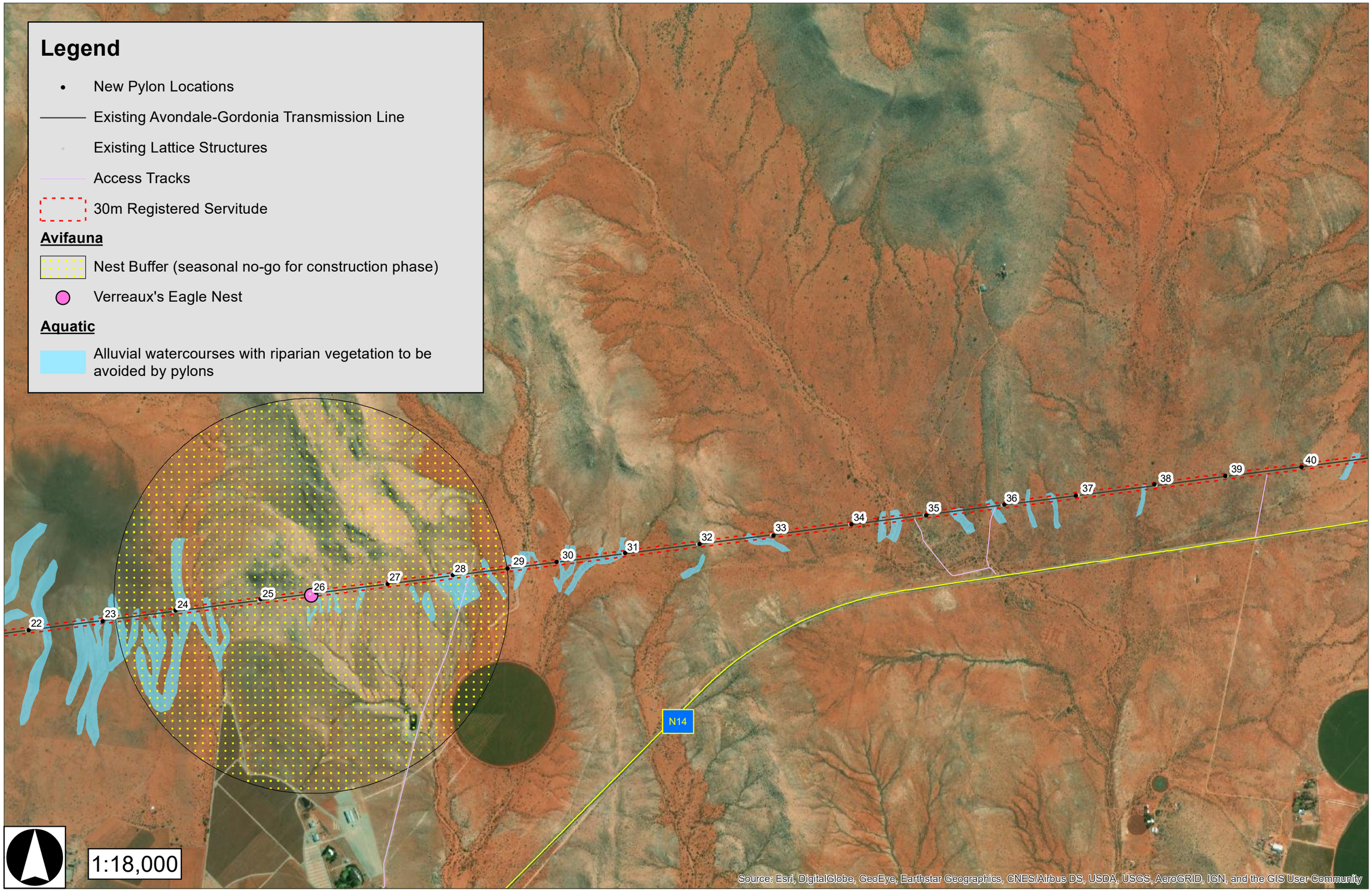
Source: Esri, Digital©'

Job No: 1001408 Map by: WL

Projection: GCS_WGS_1984

Avondale-Gordonia Transmission Line - Final EMPr

Environmental Sensitivities: Map 1 (Pylon 1 to 25)

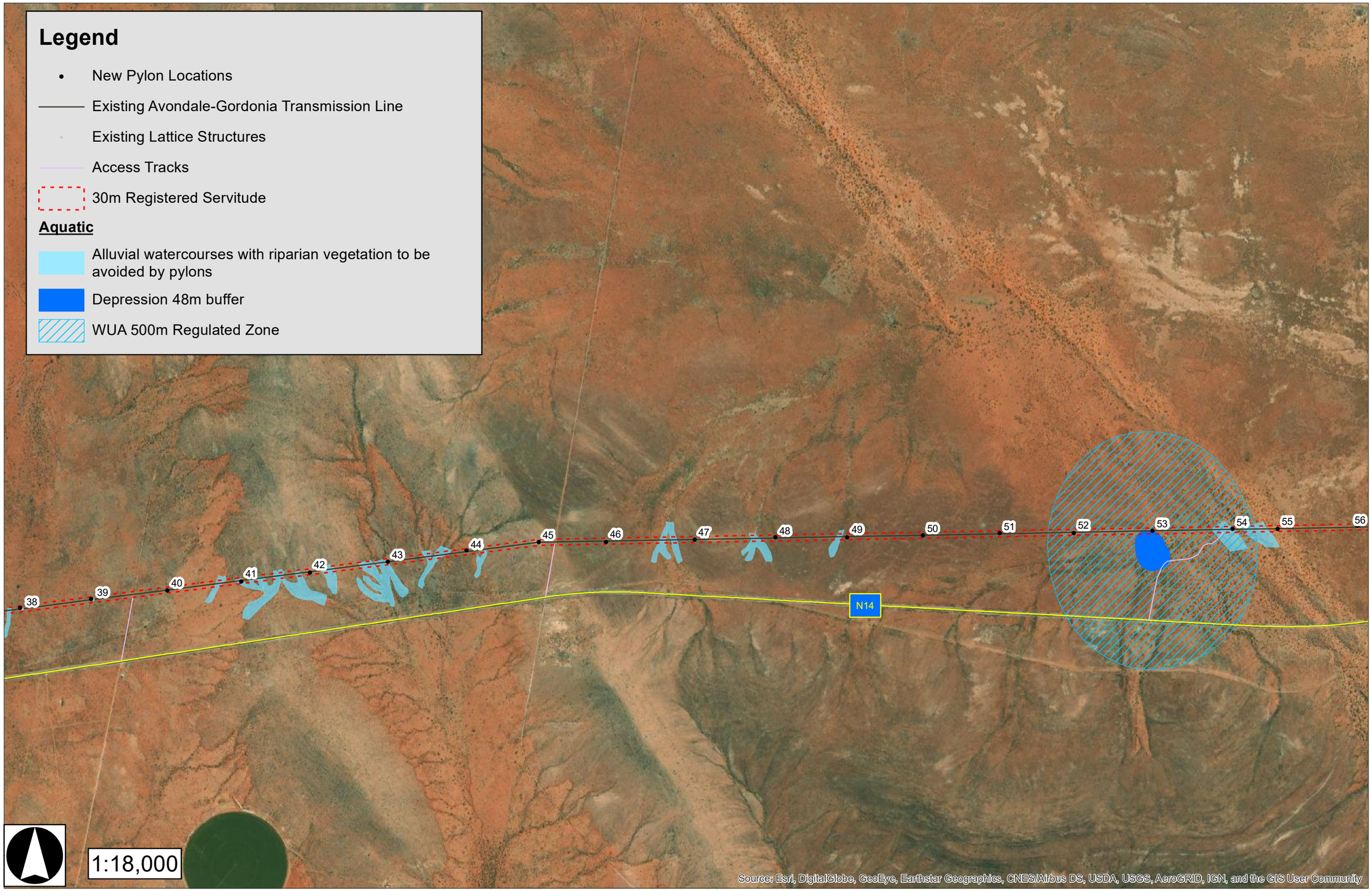


Job No: 1001408 Map by: WL

Projection: GCS_WGS_1984

Avondale-Gordonia Transmission Line - Final EMPr

Environmental Sensitivities: Map 2 (Pylon 23 to 39)



Job No: 1001408 Map by: WL

Projection: GCS_WGS_1984

Avondale-Gordonia Transmission Line - Final EMPr

Environmental Sensitivities: Map 3 (Pylon 39 to 55)

Legend

- New Pylon Locations
- Existing Avondale-Gordonia Transmission Line
- Existing Lattice Structures
- Access Tracks
- 30m Registered Servitude

Avifauna

- Nest Buffer (seasonal no-go for construction phase)
- Martial Eagle Nest

Aquatic

- Alluvial watercourses with riparian vegetation to be avoided by pylons

Botanical: Hoodia officinalis subsp. officinalis
S 28° 22' 15.37" E 21° 30' 47.71"
This plant is located within the 25 m radius working zone and should be carefully transplanted to a safe location if it is to be disturbed.

54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

N14

1:20,000

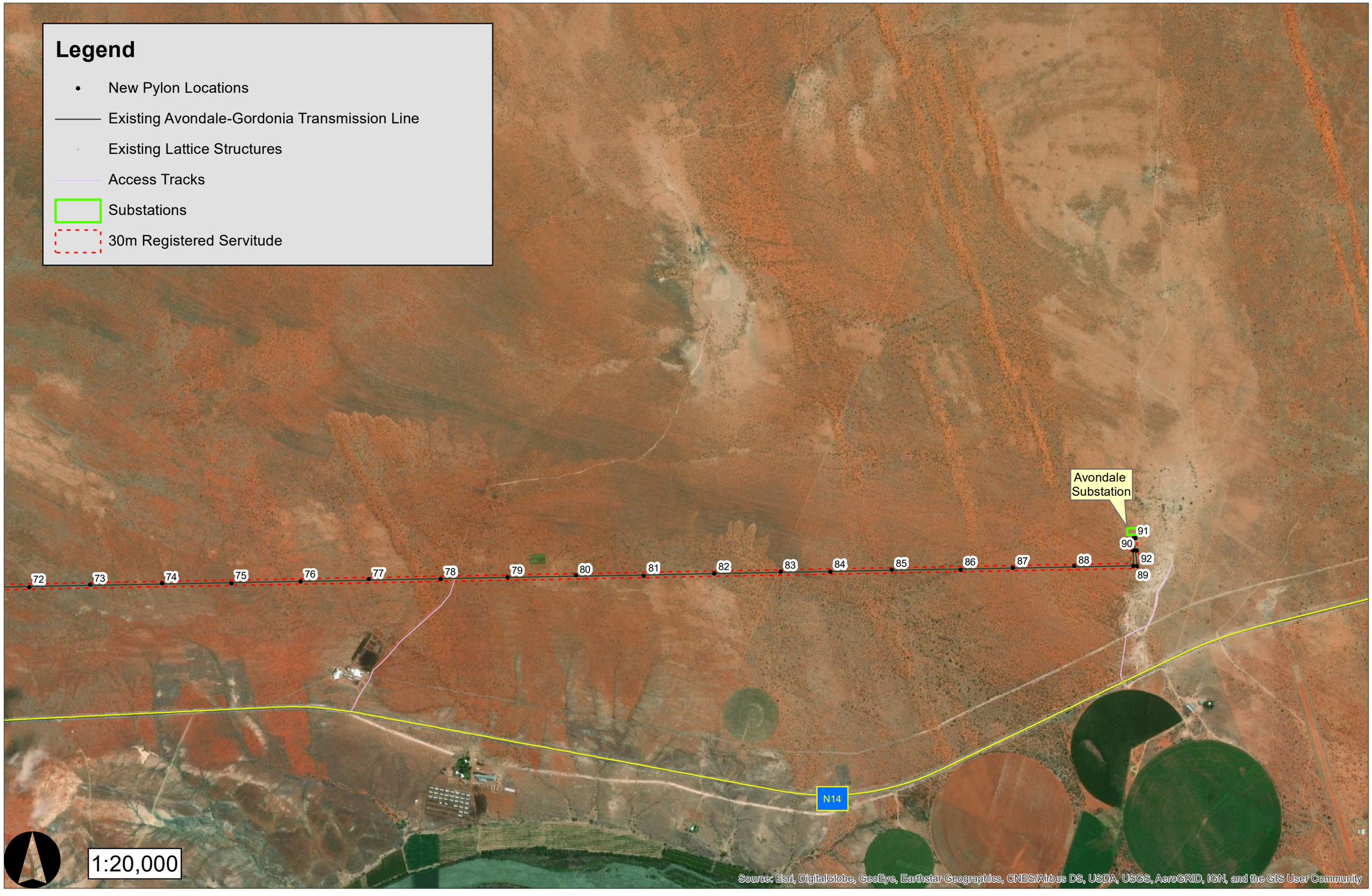
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Job No: 1001408 Map by: WL

Projection: GCS_WGS_1984

Avondale-Gordonia Transmission Line - Final EMPr

Environmental Sensitivities: Map 4 (Pylon 56 to 73)



Job No: 1001408 Map by: WL

Projection: GCS_WGS_1984

Avondale-Gordonia Transmission Line - Final EMPr

Environmental Sensitivities: Map 5 (no sensitivities) (Pylon 73 to 92)

EnviroSci (Pty) Ltd
Reg Number 2018/462716/07

Dr Brian Colloty
Ecologist (Pr Sci Nat 400268/07)
Member of the South African Wetland Society

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6070

6 December 2021

To whom it may concern

RE: EMPr FINALISATION FOR THE UPGRADE OF THE GORDONIA-AVONDALE 132kV TRANSMISSION LINE, UPINGTON, NORTHERN CAPE – AQUATIC SPECIALIST STATEMENT

The identified aquatic sensitivity features identified as part of the Basic Assessment Reporting (BAR) process inclusive of the Environmental Management Programme (EMPr) regarding the abovementioned project refer.

As part of the final pylon placement design it was found that a number of the new pylons would not be able to avoid some of the sensitive aquatic features identified as part of the BAR process.

As a mitigation measure the aquatic specialist report that informed the BAR indicated that all new pylons must avoid these sensitive features, however the specialist is aware that this may not be possible (the same challenge is being seen on other projects). This statement is to confirm that I have investigated the affected areas and relevant pylons and make the following recommendation in this regard.

Any pylons that cannot avoid the sensitive areas, or part thereof , identified during the BAR special care must be taken during the works and ensure that all the mitigation measures included in the EMPr are strictly adhered to. The ECO highlight each of these pylons to the contractor and carefully implement monitoring. The mitigation measures contained in the EMPr submitted with the Final BAR is sufficient to manage activities in these areas and must be adhered to.

This statement specifically refers to the placement of three pylons i.e. 22, 24 & 29, however it is noted that additional challenges in this regard may occur at other pylons (although unlikely) and should this be the case then the same procedure described above must be adhered to.

From an aquatic perspective the proposed placement is acceptable and will not result in unacceptable impact levels nor will it cause irreplaceable loss of resources.

Please do not hesitate to contact us should you require additional information.

Dr Brian Colloty

APPENDIX 7

LIST OF PYLON COORDINATES

Structure Number	Structure Name	Longitude (deg)	Latitude (deg)	Longitude (DMS)	Latitude (DMS)
1	132kv gantry (12.192m) (split sw).tow	21.29382	-28.4312	21°17'37.744"E	28°25'52.338"S
2	246F.tow	21.29396	-28.4315	21°17'38.273"E	28°25'53.407"S
3	246F.tow	21.29537	-28.4316	21°17'43.336"E	28°25'53.66"S
4	246F.tow	21.29623	-28.4296	21°17'46.443"E	28°25'46.626"S
5	4-7649.209 split ew.pol	21.29948	-28.4285	21°17'58.115"E	28°25'42.753"S
6	4-7649.209 split ew.pol	21.30301	-28.4274	21°18'10.85"E	28°25'38.527"S
7	246F.tow	21.30665	-28.4262	21°18'23.935"E	28°25'34.183"S
8	246E.tow	21.30684	-28.4226	21°18'24.618"E	28°25'21.491"S
9	4-7649.209 split ew.pol	21.30702	-28.4192	21°18'25.288"E	28°25'9.019"S
10	4-7649.209.pol	21.30722	-28.4156	21°18'25.985"E	28°24'56.05"S
11	4-7649.209.pol	21.3074	-28.4121	21°18'26.655"E	28°24'43.593"S
12	4-7649.209.pol	21.30759	-28.4086	21°18'27.333"E	28°24'30.97"S
13	4-7649.209.pol	21.30779	-28.4049	21°18'28.041"E	28°24'17.801"S
14	4-7649.209.pol	21.30796	-28.4017	21°18'28.669"E	28°24'6.124"S
15	4-7649.209.pol	21.30816	-28.398	21°18'29.391"E	28°23'52.678"S
16	4-7649.209.pol	21.30836	-28.3944	21°18'30.078"E	28°23'39.887"S
17	4-7649.209.pol	21.30855	-28.3908	21°18'30.775"E	28°23'26.915"S
18	4-7649.209 split ew.pol	21.30875	-28.3872	21°18'31.483"E	28°23'13.742"S
19	246F.tow	21.30892	-28.3839	21°18'32.104"E	28°23'2.181"S
20	4-7649.209 split ew.pol	21.31266	-28.3835	21°18'45.587"E	28°23'0.669"S
21	4-7649.209.pol	21.31661	-28.3831	21°18'59.809"E	28°22'59.073"S
22	4-7649.209.pol	21.32056	-28.3826	21°19'13.999"E	28°22'57.48"S
23	4-7649.209.pol	21.3245	-28.3822	21°19'28.188"E	28°22'55.888"S
24	4-7649.209.pol	21.32833	-28.3818	21°19'42.002"E	28°22'54.336"S
25	4-7649.209.pol	21.33209	-28.3813	21°19'55.515"E	28°22'52.819"S
26	4-7649.209.pol	21.33649	-28.3808	21°20'11.379"E	28°22'51.036"S
27	strsc6019ko.200.pol	21.33935	-28.3805	21°20'21.667"E	28°22'49.88"S
28	4-7649.209.pol	21.34306	-28.3801	21°20'35.007"E	28°22'48.381"S
29	4-7649.153.pol	21.34644	-28.3797	21°20'47.168"E	28°22'47.014"S
30	4-7649.153.pol	21.34927	-28.3794	21°20'57.355"E	28°22'45.868"S
31	4-7649.153.pol	21.3518	-28.3791	21°21'6.488"E	28°22'44.841"S
32	4-7649.209.pol	21.35535	-28.3787	21°21'19.254"E	28°22'43.405"S
33	4-7649.209.pol	21.35919	-28.3783	21°21'33.07"E	28°22'41.85"S
34	4-7649.209.pol	21.36302	-28.3779	21°21'46.872"E	28°22'40.297"S
35	4-7649.209.pol	21.36706	-28.3774	21°22'1.411"E	28°22'38.66"S
36	4-7649.209.pol	21.37092	-28.377	21°22'15.317"E	28°22'37.094"S
37	4-7649.209.pol	21.37496	-28.3765	21°22'29.855"E	28°22'35.457"S
38	strsc6019ko.180.pol	21.37867	-28.3761	21°22'43.223"E	28°22'33.95"S
39	4-7649.209.pol	21.38272	-28.3756	21°22'57.809"E	28°22'32.307"S
40	4-7649.209.pol	21.38639	-28.3752	21°23'11"E	28°22'30.82"S
41	4-7649.209.pol	21.39033	-28.3748	21°23'25.201"E	28°22'29.218"S
42	4-7649.209.pol	21.39416	-28.3744	21°23'38.99"E	28°22'27.663"S
43	4-7649.209.pol	21.39771	-28.374	21°23'51.757"E	28°22'26.223"S

Structure Number	Structure Name	Longitude (deg)	Latitude (deg)	Longitude (DMS)	Latitude (DMS)
44	4-7649.209.pol	21.40174	-28.3735	21°24'6.272"E	28°22'24.585"S
45	4-7649.209 split ew.pol	21.40581	-28.373	21°24'20.916"E	28°22'22.932"S
46	246E.tow	21.40954	-28.3726	21°24'34.334"E	28°22'21.417"S
47	246E.tow	21.41301	-28.3726	21°24'46.852"E	28°22'21.216"S
48	246E.tow	21.4176	-28.3725	21°25'3.345"E	28°22'20.951"S
49	4-7649.209 split ew.pol	21.42177	-28.3724	21°25'18.384"E	28°22'20.708"S
50	4-7649.209.pol	21.4255	-28.3724	21°25'31.81"E	28°22'20.491"S
51	4-7649.209.pol	21.42942	-28.3723	21°25'45.907"E	28°22'20.263"S
52	4-7649.209.pol	21.43338	-28.3722	21°26'0.178"E	28°22'20.032"S
53	4-7649.209.pol	21.43721	-28.3722	21°26'13.95"E	28°22'19.808"S
54	4-7649.209.pol	21.44129	-28.3721	21°26'28.641"E	28°22'19.569"S
55	4-7649.209.pol	21.44542	-28.372	21°26'43.501"E	28°22'19.327"S
56	4-7649.209.pol	21.44776	-28.372	21°26'51.945"E	28°22'19.189"S
57	4-7649.209.pol	21.45188	-28.3719	21°27'6.768"E	28°22'18.947"S
58	strsc6019ko.160.pol	21.45535	-28.3719	21°27'19.276"E	28°22'18.742"S
59	4-7649.153.pol	21.45797	-28.3718	21°27'28.683"E	28°22'18.588"S
60	4-7649.153.pol	21.4608	-28.3718	21°27'38.875"E	28°22'18.421"S
61	4-7649.209.pol	21.46401	-28.3717	21°27'50.45"E	28°22'18.231"S
62	4-7649.209.pol	21.4681	-28.3717	21°28'5.157"E	28°22'17.988"S
63	4-7649.209.pol	21.47101	-28.3716	21°28'15.648"E	28°22'17.815"S
64	4-7649.209.pol	21.47498	-28.3715	21°28'29.922"E	28°22'17.58"S
65	4-7649.209.pol	21.47866	-28.3715	21°28'43.162"E	28°22'17.361"S
66	4-7649.209.pol	21.48284	-28.3714	21°28'58.217"E	28°22'17.111"S
67	4-7649.209.pol	21.48686	-28.3714	21°29'12.704"E	28°22'16.871"S
68	strsc6019ko.200.pol	21.49049	-28.3713	21°29'25.764"E	28°22'16.654"S
69	4-7649.209.pol	21.49415	-28.3712	21°29'38.951"E	28°22'16.434"S
70	4-7649.209.pol	21.49759	-28.3712	21°29'51.332"E	28°22'16.227"S
71	4-7649.209.pol	21.50156	-28.3711	21°30'5.628"E	28°22'15.989"S
72	4-7649.209.pol	21.50559	-28.371	21°30'20.117"E	28°22'15.746"S
73	4-7649.209.pol	21.50977	-28.371	21°30'35.155"E	28°22'15.494"S
74	4-7649.209.pol	21.51329	-28.3709	21°30'47.84"E	28°22'15.281"S
75	4-7649.209.pol	21.51741	-28.3708	21°31'2.67"E	28°22'15.031"S
76	4-7649.209.pol	21.52139	-28.3708	21°31'17.003"E	28°22'14.79"S
77	4-7649.209.pol	21.52536	-28.3707	21°31'31.302"E	28°22'14.548"S
78	4-7649.209.pol	21.5293	-28.3706	21°31'45.483"E	28°22'14.308"S
79	strsc6019ko.200.pol	21.53343	-28.3706	21°32'0.347"E	28°22'14.057"S
80	4-7649.209.pol	21.53726	-28.3705	21°32'14.12"E	28°22'13.823"S
81	4-7649.209.pol	21.54118	-28.3704	21°32'28.242"E	28°22'13.583"S
82	4-7649.209.pol	21.5451	-28.3704	21°32'42.377"E	28°22'13.342"S
83	4-7649.209.pol	21.54913	-28.3703	21°32'56.878"E	28°22'13.095"S
84	4-7649.209.pol	21.55296	-28.3702	21°33'10.646"E	28°22'12.859"S
85	4-7649.209.pol	21.55581	-28.3702	21°33'20.91"E	28°22'12.684"S
86	4-7649.209.pol	21.55933	-28.3701	21°33'33.595"E	28°22'12.467"S
87	4-7649.209.pol	21.5633	-28.3701	21°33'47.892"E	28°22'12.221"S
88	4-7649.209.pol	21.5663	-28.37	21°33'58.691"E	28°22'12.036"S
89	4-7649.209.pol	21.56983	-28.3699	21°34'11.394"E	28°22'11.817"S
90	strsc9022ko.160.pol	21.57321	-28.3699	21°34'23.572"E	28°22'11.607"S

Structure Number	Structure Name	Longitude (deg)	Latitude (deg)	Longitude (DMS)	Latitude (DMS)
91	stfsc90uopgw.100.pol	21.5732	-28.3691	21°34'23.515"E	28°22'8.806"S
92	132kv gantry (12.192m) (split sw).tow	21.57323	-28.3685	21°34'23.629"E	28°22'6.514"S
93	132kv gantry (12.192m) (split sw).tow	21.57334	-28.3685	21°34'24.033"E	28°22'6.507"S
94	stfsc90uopgw.100.pol	21.5734	-28.3691	21°34'24.249"E	28°22'8.797"S
95	strsc9022ko.160.pol	21.57342	-28.3699	21°34'24.31"E	28°22'11.603"S