

# Merensky-Uchoba 132kV Power Line Second Route Deviation Steelpoort, Limpopo Province

## Site Specific Environmental Management Programme Part C of the Gazetted Generic EMPr

May 2023

### Applicant

Eskom Holdings SOC Limited care of the Eskom Limpopo Operating Unit  
92 Hans van Rensburg Street, Polokwane, 0700  
Contact person: Ms Tshifhiwa Matamela  
015 299 0498 / MatameTE@eskom.co.za

### Compiled by

Landscape Dynamics Environmental Consultants  
Contact persons: Annelize Erasmus (082 566 4530) and Susanna Nel (082 888 4060)  
info@landscapedynamics.co.za



---

#### Western Cape Province- Cape Town Office

3 Palomino Close, Somerset West, 7130  
021 855 0912 / 082 888 4060  
info@landscapedynamics.co.za  
susanna@landscapedynamics.co.za

#### Representation Offices

Mpumalanga Province  
Kwazulu-Natal Province

#### Gauteng Province- Pretoria Office

91 Wenning Street, Groenkloof, Pretoria, 0181  
PO Box 947, Groenkloof, Pretoria, 0027  
012 460 6043 / 082 566 4530  
info@landscapedynamics.co.za  
annelize@landscapedynamics.co.za

## List of Content

<b>CHAPTER 1: GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME.....</b>	<b>3</b>
1.1    Gazetted Generic Environmental Management Programme .....	3
<b>CHAPTER 2: CONTACT DETAILS AND EXPERTISE OF THE EAPS .....</b>	<b>5</b>
2.1    Contact Details and Expertise of the EAP .....	5
<b>CHAPTER 3: SITE SPECIFIC SENSITIVITIES / ATTRIBUTES .....</b>	<b>6</b>
3.1    Environmental Sensitivity Maps as provided by the Specialists .....	7
3.1.1    Ecological (Flora and Fauna) Environmental Sensitivity Maps .....	7
3.1.2    Aquatic Environmental Sensitivity Maps .....	11
3.1.3    Avian Environmental Sensitivity Map .....	14
3.1.4    Heritage Environmental Sensitivity Map.....	16
3.1.5    Combined Environmental Sensitivity Map .....	17
3.2    Mitigation: Ecological Assessment (Fauna, Flora and Aquatic) .....	18
3.3    Mitigation: Avifauna .....	21
3.4    Mitigation: Archaeological Resources.....	22
3.5    Mitigation: Palaeontological Resources .....	24

### **Addenda**

*Addendum 1 – Landscape Dynamics Company Profile and Condensed CVs of the EAPs*

# CHAPTER 1: GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME

## 1.1 Gazetted Generic Environmental Management Programme

On 22 March 2019 a *Generic Environmental Management Programme (EMPr)* was promulgated in terms of Section 24 of NEMA and gazetted as Government Notice No 435. This EMPr is applicable where application is made for Environmental Authorisation for substations and overhead electricity transmission and distribution infrastructure as identified in terms of

- activity 11 or 47 of EIA Regulations Listing Notice 1 of 2014, as amended, or for
- activity 9 of EIA Regulations Listing Notice 2 of 2014, as amended, and
- any other listed and specified activities necessary for the realisation of such infrastructure.

The EMPr is a legally binding document and contains general as well as site specific mitigation measures.

The Generic Environmental Management Programme consists of the following:

- APPENDIX A: DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE and
- APPENDIX B: DEVELOPMENT AND EXPANSION OF OVERHEAD ELECTRICITY INFRASTRUCTURE

*The Merensky-Uchoba 132kV Power Line Deviation project consists of the construction of a 132kV power line and Appendix B are thus applicable to this project.*

Both Appendixes are divided into the following:

1. Part A (General Guidance and Information)
2. Part B: Section 1 (Pre-approved Generic EMPr Template)
3. Part B: Section 2 (Site Specific Information and Declaration)
4. **Part C (Site Specific Sensitivities / Attributes) (this document)**
5. Method Statements

### **PART A (GENERAL GUIDANCE AND INFORMATION)**

- Provides general guidance and information such as definitions, acronyms, roles & responsibilities, documentation and reporting. This section is not legally binding.

### **PART B: SECTION 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
- 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. Once completed and

signed, the template represents the EMPr for the activity approved by the Competent Authority (CA) and is legally binding.

- The template is not required to be submitted to the CA because the generic EMPr was gazetted for implementation and has therefore been approved by the CA.
- The EAP must make this section available for public consideration.

#### **PART B: SECTION 2 (SITE SPECIFIC INFORMATION and DECLARATION)**

- Contains preliminary infrastructure layout *and* a declaration that the applicant/holder of the EA
  - will comply with the pre-approved generic EMPr as contained Part B: Section 1;
  - understands that the impact management outcomes and impact management actions **are legally binding**.
- The preliminary infrastructure layout must be submitted with the Environmental Sensitivity Report ensuring that all impact management outcomes and impact management actions have been either preapproved or approved in terms of Part C.
- This section must be submitted to the CA together with the Environmental Sensitivity Report. 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 site and **is legally binding**.

#### **PART C (SITE SPECIFIC SENSITIVITIES / ATTRIBUTES) (THIS DOCUMENT)**

- Any site specific management outcomes and management actions not included in the pre-approved generic EMPr must be included in this section.
- These specific environmental attributes must be referenced spatially and impact management outcomes and impact management actions must be provided.
- These outcomes and actions must be presented in the format of Part B: Section 1.
- This section will not be required should the site contain no specific environmental sensitivities or attributes.
- If Part C is applicable it is required to be submitted together with the Environmental Sensitivity Report to the CA for consideration.
- 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**.

#### **METHOD STATEMENTS**

- It 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.

## CHAPTER 2: CONTACT DETAILS AND EXPERTISE OF THE EAPS

### 2.1 Contact Details and Expertise of the EAP

#### Contact details of the EAP

Name of EAP : Landscape Dynamics Environmental Consultants (Pty) Ltd  
: Annelize Erasmus and Susanna Nel  
Tel No : 082 566 4530 and 082 888 4060 &  
E-mail address : info@landscapedynamics.co.za

#### Expertise of the EAP

Landscape Dynamics is an environmental consultancy firm established in May 1997. The main line of business since that time up to present is the compilation of environmental impact assessments. Landscape Dynamics has a broad client base from both the private and government sectors which has developed over the past 24 years of professional services supplied. The operating base for Landscape Dynamics is the entire South Africa; with local representation in Gauteng, the North West Province, Mpumalanga, the Western Cape, the Northern Cape and Limpopo. The Environmental Assessment Practitioners (EAPs) for this project are Ms Susanna Nel and Ms Annelize Erasmus.

*Refer to the Addendum of this EMP for a Company Profile and Curriculum Vitae's of the EAPs.*

## CHAPTER 3: SITE SPECIFIC SENSITIVITIES / ATTRIBUTES

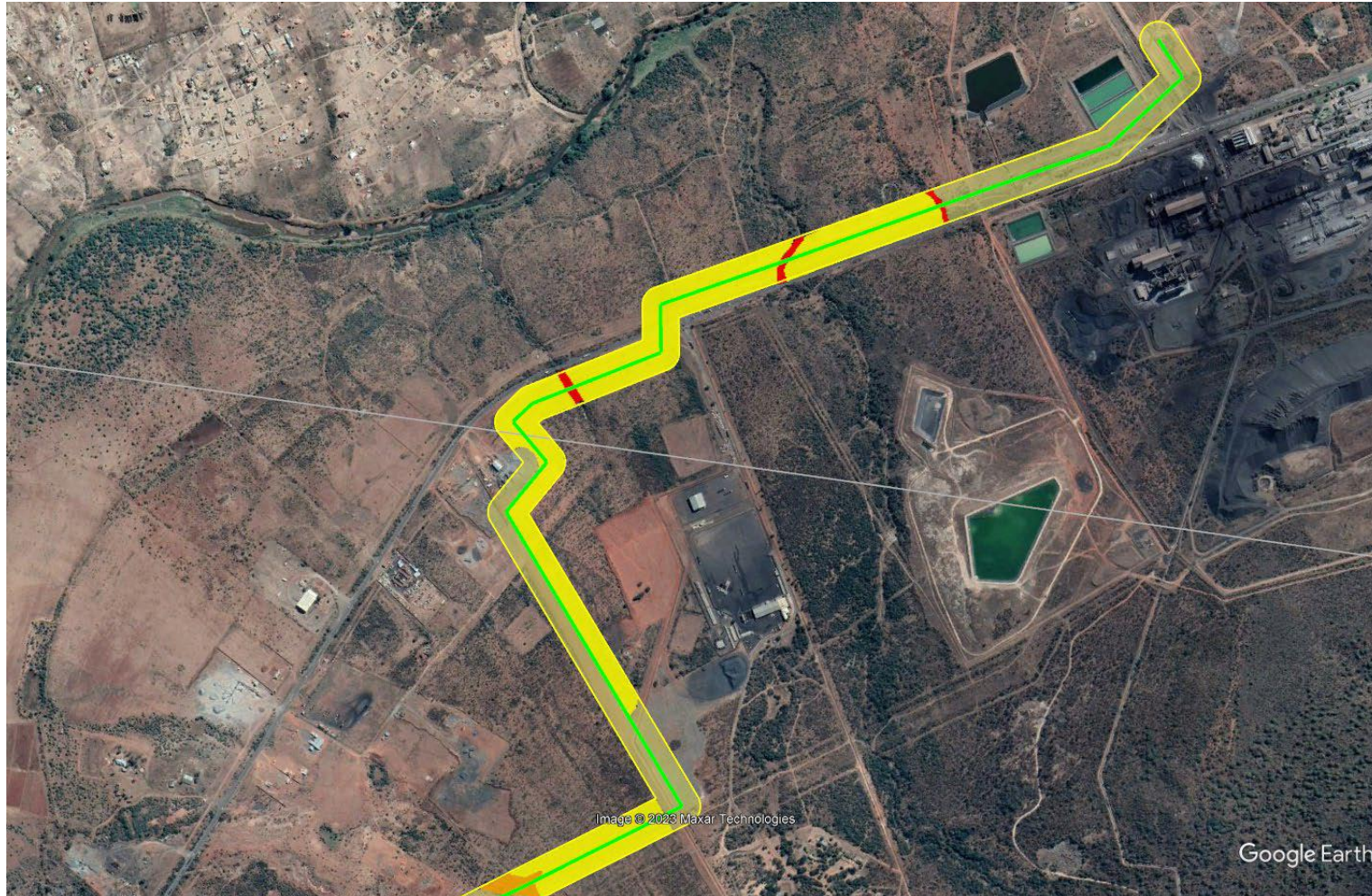
Specific environmental sensitivities/attributes which are present on the site and which require more specific impact management outcomes and actions are included in this section. These outcomes and actions are not covered in the generic EMPr template.

The management controls including impact management outcomes and impact management actions are presented in the format of the preapproved generic EMPr template.

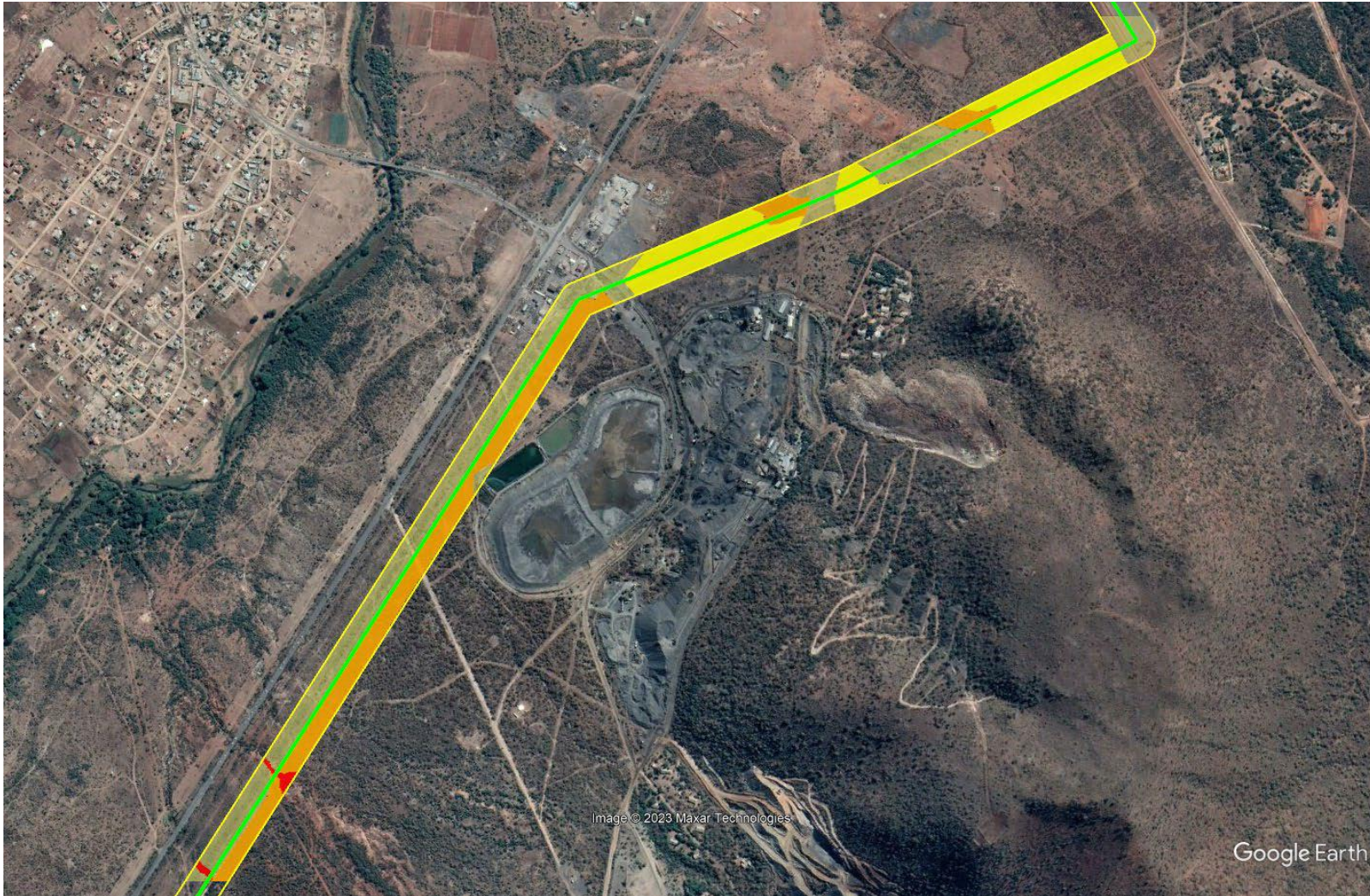
Part C is submitted to the CA together with the Environmental Sensitivity Report for consideration of, and decision on, the application for EA. Once approved, Part C forms part of the EMPr for the site and is legally binding.

### 3.1 Environmental Sensitivity Maps as provided by the Specialists

#### 3.1.1 Ecological (Flora and Fauna) Environmental Sensitivity Maps

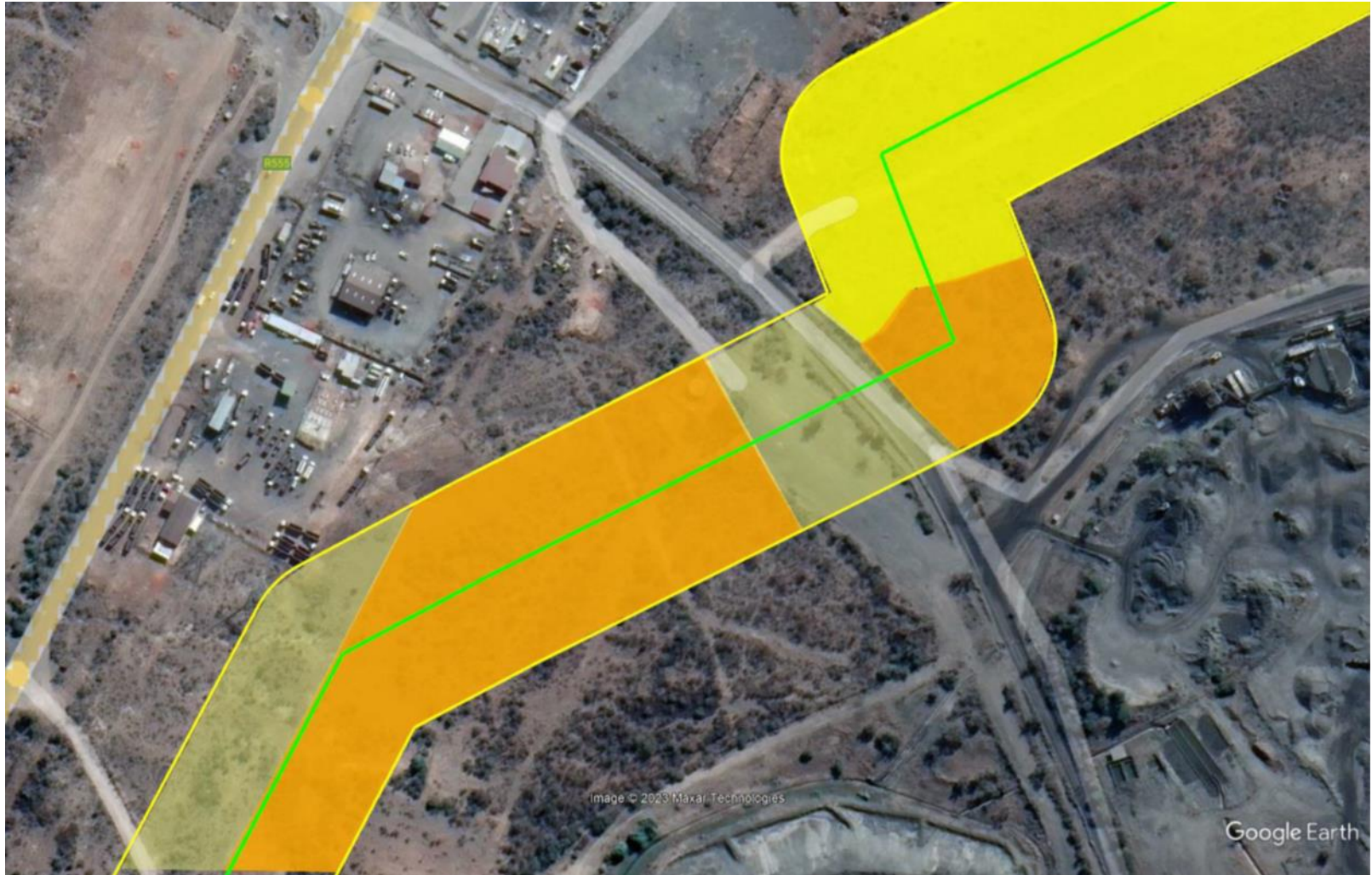


Map of relative plant sensitivity (Red=High; Orange=Medium; Yellow=Low; Light yellow=Very low)



Map of relative plant sensitivity (Red=High; Orange=Medium; Yellow=Low; Light yellow=Very low)





Area where an additional assessment was made to accommodate a slight deviation: Map of relative plant sensitivity (Red=High; Orange=Medium; Yellow=Low; Light yellow=Very low) (Source: Google Earth, 2023)

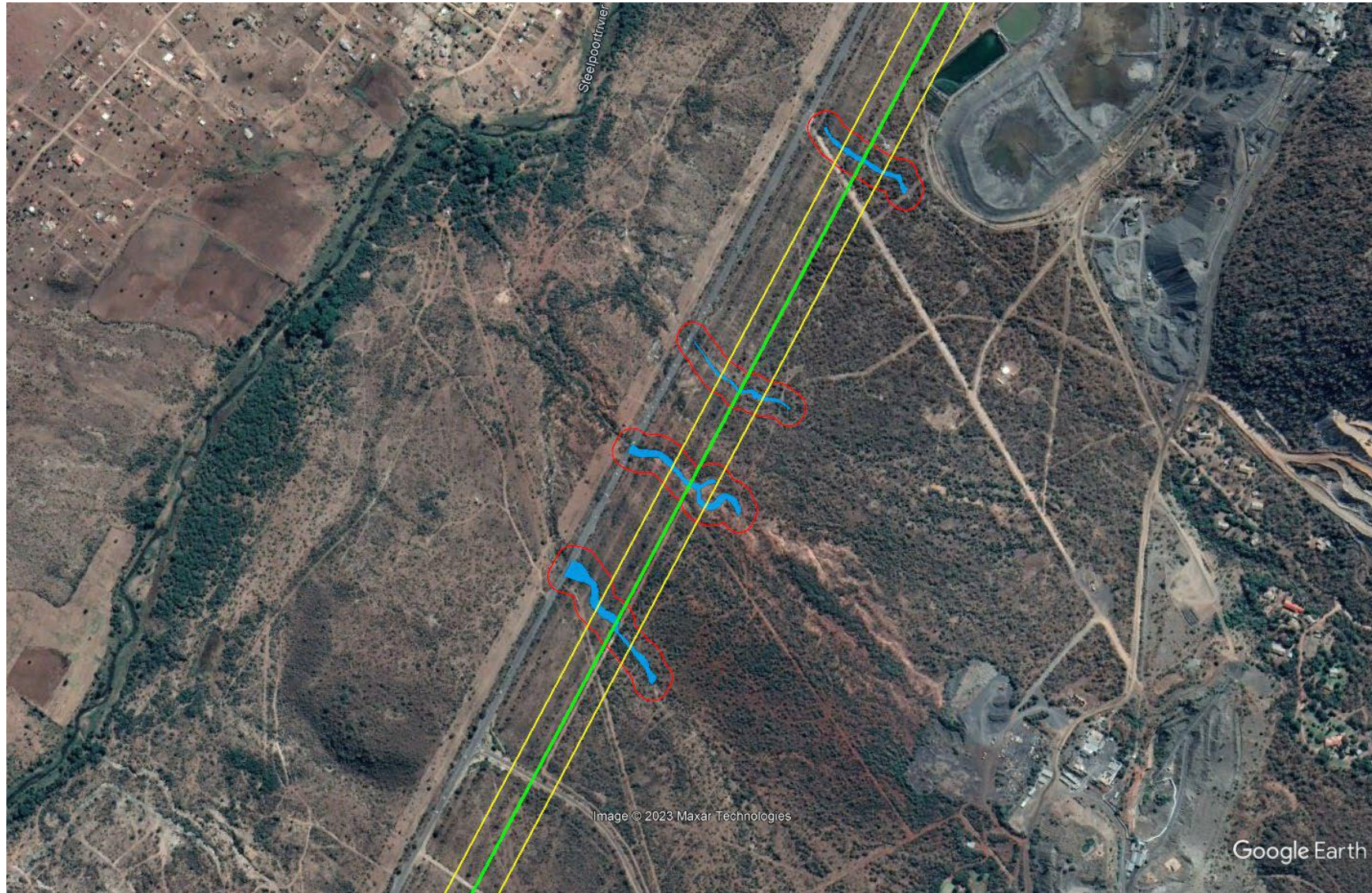


Map of relative plant sensitivity (Red=High; Orange=Medium; Yellow=Low; Light yellow=Very low)

### 3.1.2 Aquatic Environmental Sensitivity Maps



No Go Areas: Watercourses and associated 32m buffer zones (Blue=Tributaries; Red=32m buffer zones)

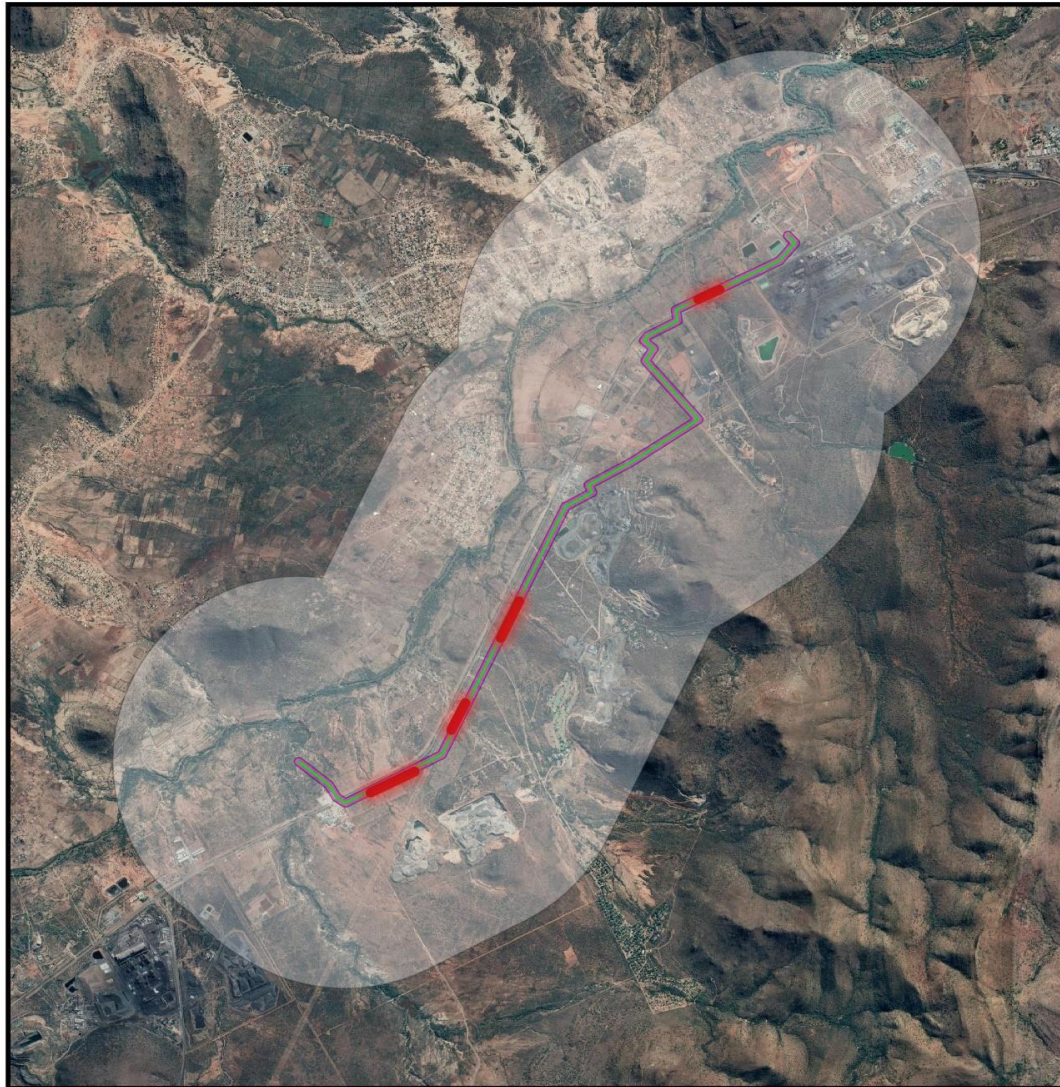


No Go Areas: Watercourses and associated 32m buffer zones (Blue=Tributaries; Red=32m buffer zones)







No Go Areas: Watercourses and associated 32m buffer zones (Blue=Tributaries; Red=32m buffer zones)

### 3.1.3 Avian Environmental Sensitivity Map



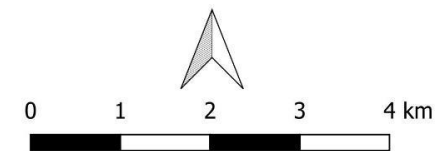
## Merensky-Uchoba 132kV Power Line Second Route Deviation

### Legend

Second Route Deviation Collision Risk Areas	
Final Second Route Deviation	
Final Second Route Deviation Corridor	
PAOI (2km Buffer)	

### SOURCES:

Landscape Dynamics, 17 May 2023



Feathers Environmental  
Services  
PO Box 786962  
Sandton, 2146  
082 683 0970  
megan@feathersenv.co.za  
www.feathersenv.co.za

Collision risk areas – ephemeral drainage lines and open grassland habitat. These areas will require collision mitigation in the form of bird flight diverters

### 3.1.4 Heritage Environmental Sensitivity Map



Two graveyards fall within the 100m wide corridor:

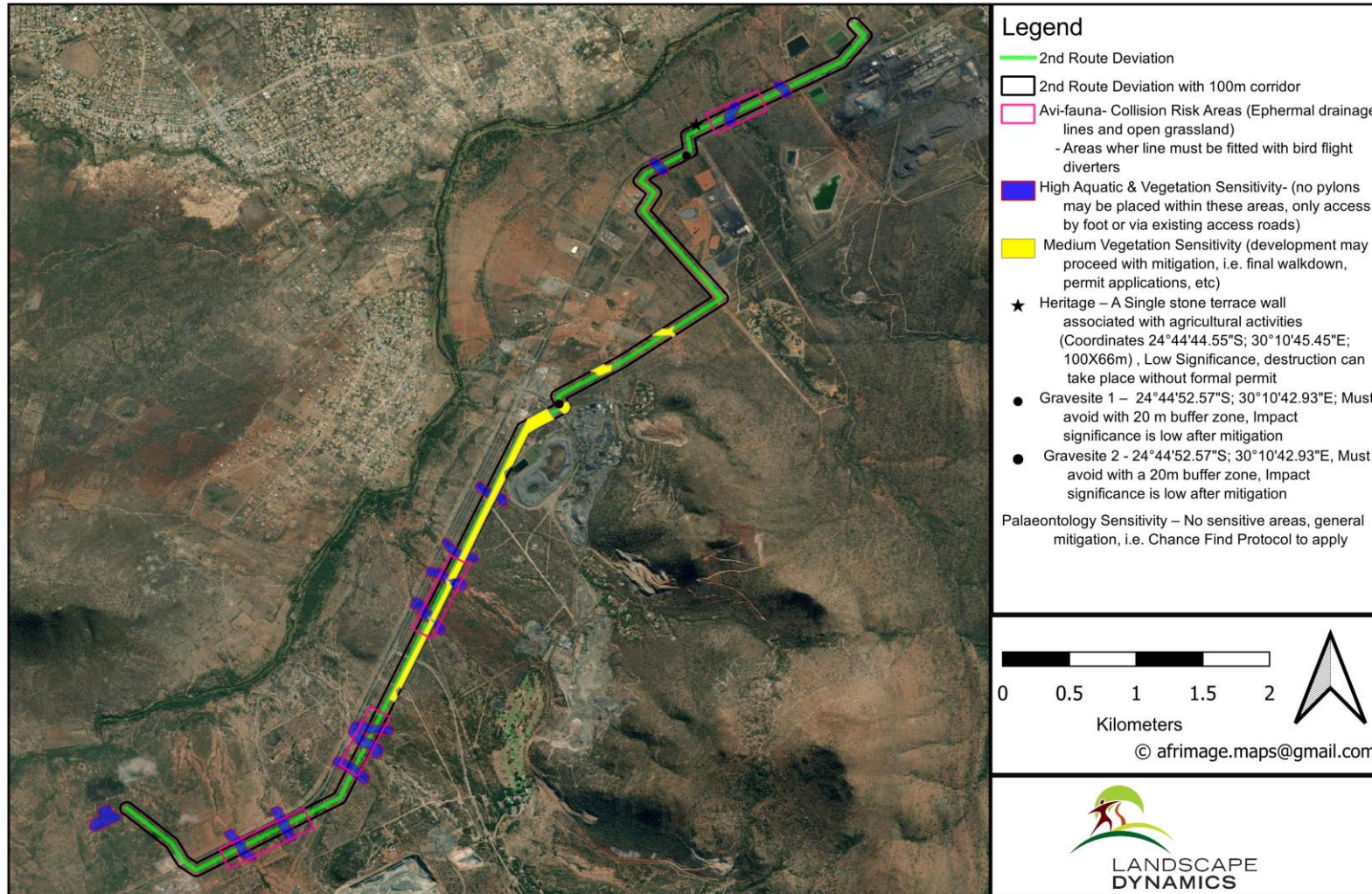
Graveyard 1 consists of at least 4 graves and is situated at 24°44'52.57"S; 30°10'42.93"E

Graveyard 2 consists of one single grave situated at 24°45'58.72"S; 30°10'8.95"E



### 3.1.5 Combined Environmental Sensitivity Map

#### Merensky-Uchoba 132kV Power Line Second Route Deviation Combined Environmental Sensitivity Map



### 3.2 Mitigation: Ecological Assessment (Fauna, Flora and Aquatic)

This mitigation below was specified by the ecologist which undertook ecological studies as part of the Registration process. The **Specialist Confirming Statement: Ecological Assessment** as well as the **Specialist Confirming Statement: Aquatic Assessment** are appended to the Environmental Sensitivity Report and can be provided on request should in-depth detailed be required.

The High Environmental Sensitive areas holds the same demarcation for both the fauna and flora as well as the aquatic features on site and have therefore similar mitigation. General mitigation for the entire route between these two disciplines are also similar.

Impact Management Outcome: Adequate protection of the ecological features (fauna, flora and aquatic) within the proposed power line route						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p><b>Areas identified as having a High Environmental Sensitivity (tributaries)</b></p> <ul style="list-style-type: none"> <li>• Pylons must not be placed within these areas and associated buffer zones (as per the aquatic delineation), but the areas may be spanned.</li> <li>• Threatened/endemic/protected species are present. No threatened plant species may be removed or trimmed without obtaining the necessary permits from the Conservation authorities.</li> <li>• No person must be allowed to enter the tributaries unless for crossing the area by foot or access via existing roads.</li> </ul>	Eskom Engineering Design	The Eskom engineers must take due cognisance of this requirement and must ensure that the High sensitive areas are spanned. An ecologist must be appointed to conduct and document the	Prior to any construction activities taking place.	Eskom Environmental Officer	Once prior to commencement of construction activities	Engineering design reports and ECO Site Reports

		findings of the walkdown.				
<p><b>Areas identified as having a Medium Environmental Sensitivity (woodlands)</b></p> <ul style="list-style-type: none"> <li>Final pylon placement within this vegetation unit must be confirmed by conducting a walkdown by a qualified ecologist/botanist to ensure that no Threatened/Endemic/Protected plants will be negatively affected. Where such species are encountered the pylon placement should preferably be adjusted.</li> <li>No threatened or protected plant species may be removed or trimmed without obtaining the necessary permits from the relevant conservation authorities.</li> <li>If a road has to be developed to gain access to construction within the medium sensitive areas it has to be confirmed that there are no Threatened/Endemic/Protected plant species present.</li> </ul>	Eskom Engineering Design, Eskom Environmental Officer, Contractor and the ECO	The Eskom engineers must take due cognisance of this requirement and must ensure that the High sensitive areas are spanned. An ecologist must be appointed to conduct and document the findings of the walkdown.	Prior to any construction activities taking place.	Eskom Environmental Officer	Continuous monitoring is required during both pre-construction and during construction to ensure compliance.	Engineering reports
<p><b>The following is applicable to the entire power line route</b></p> <ul style="list-style-type: none"> <li>To minimise the effect on the vegetation, insects, small mammals, and environment it is recommended that the construction be done within the winter period as far as possible, when most plants are dormant and animals less active.</li> <li>Vegetation clearance should be restricted to the approved development areas allowing remaining animals the opportunity to move away from the disturbance.</li> <li>No collection or gathering of firewood and medicinal plants must be allowed.</li> <li>Where vegetation needs to be “opened” to gain access it is</li> </ul>	EA Holder	The ECO must conduct regular visits to the entire route	During the entire construction period.	ECO	Bi-weekly	Records in the ECO file

<p>recommended that the herbaceous species are cut short rather than removing them.</p> <ul style="list-style-type: none"> <li>• Current servitude roads must be used as far as possible, and no unnecessary roads developed.</li> <li>• No animals should be intentionally killed or destroyed and poaching and hunting should not be permitted on the site.</li> <li>• No hunting with firearms (shotguns, air rifles or pellet guns) or catapults should be permitted on the property as well as neighbouring areas.</li> <li>• Any animals encountered in the development areas must be relocated away from the development site.</li> <li>• Where lighting is required for safety or security reasons, this should be targeted at the areas requiring attention. Yellow sodium lights should be prescribed as they do not attract invertebrates at night and will not disturb the existing wildlife. Sodium lamps require a third less energy than conventional light bulbs.</li> <li>• Alien invasive plants present within the various vegetation units must be removed and eradicated throughout all stages of the project.</li> </ul>						
--	--	--	--	--	--	--

### 3.3 Mitigation: Avifauna

This mitigation below was specified by the ornithologists which undertook ecological studies as part of the Registration process. The **Specialist Confirming Statement: Avifauna Assessment** are appended to the Environmental Sensitivity Report and can be provided on request should in-depth detailed be required.

Impact Management Outcome: Adequate protection of birds within the proposed power line route by preventing and/or limiting collision risk						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>Specific sections along the powerline route have been identified as depicted in the Avifauna Sensitivity Map provided in Paragraph 3.1.3 of this document. These sections of the route have to be fitted with bird flight diverters.</p> <p><i>The recommended 132kV structure from an avi-faunal perspective is the Type DT 7641/7649.</i></p>	Eskom Engineering Design	Design must be done as per Eskom construction specifications and specifications of the Avifauna specialist to ensure that the lines are bird friendly.	The design and the ordering of material for the power line are pre-construction.	ECO during construction; thereafter the Eskom maintenance team	During construction every two week to confirm if in good order; thereafter during annual line maintenance inspections	Photos should be taken and kept on record in the ECO file. During construction it should be annual inspection reports by Eskom SHEQ or

						Maintenance and Operations department.
--	--	--	--	--	--	--

### 3.4 Mitigation: Archaeological Resources

This mitigation below was specified by the ornithologists which undertook an archaeological survey as part of the Registration process. The **Specialist Confirming Statement: Archaeological Assessment** are appended to the Environmental Sensitivity Report and can be provided on request should in-depth detailed be required.

Impact Management Outcome: Projection of archaeological resources along the entire power line route						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>Three sites had been identified:</p> <p>The first is stone walling of about 100 x 66 m in size. The site is about 33 m from the proposed development. There will be no impact and the site is of low significance in any event. No mitigation is proposed. The site coordinates are the following: 24°44'44.55"S; 30°10'45.45"E</p> <p>Two graveyards fall within the 100m wide corridor: Graveyard 1 consists of at least 4 graves and is situated at 24°44'52.57"S; 30°10'42.93"E</p>	EA holder	Construction staff must be trained at commencement of construction to make them aware of potential	Before construction commences	ECO	Continuou s	Photograp hs and records in the ECO file as per the <i>Chance Find Procedure.</i>

<p>Graveyard 2 consists of one single grave situated at 24°45'58.72"S; 30°10'8.95"E</p> <p>Site specific mitigation measures must be implemented to protect the two gravesites (which are situated within the 100m corridor) from disturbance and/or destruction. Mitigation is required consisting of in situ preservation with a buffer zone of at least 20 m and the site being fenced. The final placement of the pylons must avoid this area and the line may not span it either.</p> <p>It should be noted that the subterranean presence of archaeological and/or historical sites, features or artefacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, work on site cease immediately and a qualified archaeologist be called in to investigate the occurrence. In this regard the following '<b>Chance Find Procedure</b>' should be followed:</p> <ul style="list-style-type: none"> <li>▪ Upon finding any archaeological or historical material all work at the affected area must cease.</li> <li>▪ The area should be demarcated to prevent any further work there until an investigation has been completed.</li> <li>▪ An archaeologist should be contacted immediately to provide advice on the matter.</li> <li>▪ Should it be a minor issue, the archaeologist will decide on future action. Depending on the nature of the find, it may include a site visit.</li> <li>▪ SAHRA's APM Unit may also be notified.</li> <li>▪ If needed the necessary, permit will be applied for with SAHRA. This will be done in conjunction with the appointed archaeologist.</li> <li>▪ The removal of such archaeological material will be done by the</li> </ul>		<p>heritage resources (i. e. graves) and the actions required.</p>				
--	--	--	--	--	--	--

archaeologist in lieu of the approval given by SAHRA, including any conditions stipulated by the latter. <ul style="list-style-type: none"> <li>Work on site will only continue after the archaeologist/ SAHRA has agreed to such a matter.</li> </ul>						
--	--	--	--	--	--	--

### 3.5 Mitigation: Palaeontological Resources

This mitigation below was specified by the ornithologists which undertook an archaeological survey as part of the Registration process. The **Specialist Confirming Statement: Palaeontological Assessment** are appended to the Environmental Sensitivity Report and can be provided on request should in-depth detailed be required.

Impact Management Outcome: Projection of palaeontological resources along the entire power line route						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
<p>The palaeontological resources of the site have a Low environmental sensitivity and the following <b>Chance Find Procedure</b> is only required if fossils are seen on the surface and when drilling/excavations commence.</p> <p><b>Monitoring Programme for Palaeontology – to commence once the excavations / drilling activities begin.</b></p> <ol style="list-style-type: none"> <li>When excavations begin the rocks and discard must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (plants, insects, bone or</li> </ol>	EA holder	Check the rocks being excavated for fossil plant impressions or bones. Photographs of typical fossils are included	When excavations commence	ECO	Once when the excavations are in progress only	Photographs of excavated material; written statement



<p>coal) should be put aside in a suitably protected place. This way the project activities will not be interrupted.</p> <p>2. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones (for example see Figure 7). This information will be built into the EMP's training and awareness plan and procedures.</p> <p>3. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.</p> <p>4. If there is any possible fossil material found by the contractor or environmental officer then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.</p> <p>5. 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.</p> <p>6. 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.</p> <p>7. If no fossils are found and the excavations have finished then no further monitoring is required.</p>		hereunder.				
--	--	------------	--	--	--	--



Examples of fragmentary plant, wood and bone fossils that might be trapped in the Quaternary river sands.

\*\*\*\*\*