MYEZO ENVIRONMENTAL MANAGEMENT SERVICES

Environmental Stewardship

ESKOM - GILEAD - ENVIRONMENTAL MANAGEMENT PROGRAMME

ENVIRONMENTAL MANAGEMENT PROGRAMME COMPILED AS PART OF THE ENVIRONMENTAL AUTHORISATION APPLICATION (BASIC ASSESSMENT PROCESS) IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, (ACT NO. 107 OF 1998), UNDER REGULATIONS R982 OF 2014, AS AMENDED IN 2017, FOR THE PROPOSED CONSTRUCTION ACTIVITIES FOR THE DEVIATION (APPROXIMATELY ONE (1) KM) OF AN EXISTING GILEAD POWERLINE AT GILEAD SUBSTATION, LOCATED WITHIN MOGALAKWENA LOCAL MUNICIPALITY, WATERBERG DISTRICT MUNICIPALITY IN LIMPOPO PROVINCE.

Document Name: EGB - Environmental Management Programme

Date: 25 June 2021

Document Status: Ver 1

Volume 2 of 4

Mvezo Ref: EGB 2020/12

Tel: 012 998 7642 | Fax: 102 998 7641 | C: 082 772 2418 | email: babalwa@myezo.co.za

Postnet Suite B165, Private Bag X18, Lynnwood Ridge, 0040, Pretoria, South Africa 1250

ESKOM - GILEAD - ENVIRONMENTAL MANAGEMENT PROGRAMME

ENVIRONMENTAL MANAGEMENT PROGRAMME COMPILED AS PART OF THE ENVIRONMENTAL AUTHORISATION APPLICATION (BASIC ASSESSMENT PROCESS) IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, (ACT NO. 107 OF 1998), UNDER REGULATIONS R982 OF 2014, AS AMENDED IN 2017, FOR THE PROPOSED CONSTRUCTION ACTIVITIES FOR THE DEVIATION (APPROXIMATELY ONE (1) KM) OF AN EXISTING GILEAD POWERLINE AT GILEAD SUBSTATION, LOCATED WITHIN MOGALAKWENA LOCAL MUNICIPALITY, WATERBERG DISTRICT MUNICIPALITY IN LIMPOPO PROVINCE.

Document Name: EGB - Environmental Management Programme

Date: 25 June 2021

Document Status: Ver 1

Volume 2 of 4

Myezo Ref: EGB 2020/12

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES
Environmental Stewardship

DISCLAIMER

This Environmental Management Programme has been prepared by Myezo Environmental Management Services (Pty) Ltd (Myezo) with all reasonable skill, care and diligence within the terms of the Contract with the client, incorporating all contractual agreements and taking account of the resources devoted to it by agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the applicant for environmental aurhorisation and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

OWNERSHIP OF REPORTS AND COPYRIGHTS

ESKOM - GILEAD - ENVIRONMENTAL MANAGEMENT PROGRAMME

ENVIRONMENTAL MANAGEMENT PROGRAMME COMPILED AS PART OF THE ENVIRONMENTAL AUTHORISATION APPLICATION (BASIC ASSESSMENT PROCESS) IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, (ACT NO. 107 OF 1998), UNDER REGULATIONS R982 OF 2014, AS AMENDED IN 2017, FOR THE PROPOSED CONSTRUCTION ACTIVITIES FOR THE DEVIATION (APPROXIMATELY ONE (1) KM) OF AN EXISTING GILEAD POWERLINE AT GILEAD SUBSTATION LOCATED WITHIN MOGALAKWENA LOCAL MUNICIPALITY, WATERBERG DISTRICT MUNICIPALITY IN LIMPOPO PROVINCE.

Document Name: EGB - Environmental Management Programme

Date: 25 June 2021

Document Status: Ver 1

Volume 2 of 4

Myezo Ref: EGB 2020/12

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES
Environmental Stewardship

DOCUMENT CONTROL AND REVISION LIST

Version	Nature of Amendment	Compiled by	Approved by	Date of Amendment
1	No amendments yet- Environmental Management Programme.	B. Fatyi and L. Madziwanzira	B. Fatyi	

ESKOM - GILEAD - ENVIRONMENTAL MANAGEMENT PROGRAMME

ENVIRONMENTAL MANAGEMENT PROGRAMME COMPILED AS PART OF THE ENVIRONMENTAL AUTHORISATION APPLICATION (BASIC ASSESSMENT PROCESS) IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, (ACT NO. 107 OF 1998), UNDER REGULATIONS R982 OF 2014, AS AMENDED IN 2017, FOR THE PROPOSED CONSTRUCTION ACTIVITIES FOR THE DEVIATION (APPROXIMATELY ONE (1) KM) OF AN EXISTING GILEAD POWERLINE AT GILEAD SUBSTATION LOCATED WITHIN MOGALAKWENA LOCAL MUNICIPALITY, WATERBERG DISTRICT MUNICIPALITY IN LIMPOPO PROVINCE.

Document Name: EGB - Environmental Management Programme

Date: 25 June 2021

Document Status: Ver 1

Volume 2 of 4

Myezo Ref: EGB 2020/12

MYEZO ENVIRONMENTAL MANAGEMENT SERVICES
Environmental Stewardship

DOCUMENT REVIEW AND APPROVAL

Author (s)	No. of pages	Version No.	Date of Issue
Babalwa Fatyi and Lynn Madziwanzira	64	1	25 June 2021
Authors Signature:			
Reviewer	Prudence Khosa		
Document Authorisation	Name Babalwa Fatyi	Signature	Key words: Environmental Management Programme.

ENVIRONMENTAL MANAGEMENT PROGRAMME

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

ABBREVATIONS

BAR: Basic Assessment Report

CV: Curriculum Vitae

COVID-19: Corona Virus Disease of 2019

DFFE: Department of Environment, Forestry and Fisheries

EA: Environmental Authorisation

EAP: Environmental Assessment Practitioner

EIA: Environmental Impact Assessment

Eskom: Eskom Holdings SOC Limited

GA: General Authorisation

GN: Government Notice

GPS: Global Positioning System

HIV: Human Immunodeficiency Virus

MLM: Mogalakwena Local Municipality

MSA: Middle Stone Age

Myezo: Myezo Environmental Management Services (Pty) Ltd

NEMA: National Environmental Management Act (Act 107 of 1998

NEM:BA: National Environmental Management: Biodiversity Act (No. 10 of 2004)

NEM: WA: National Environmental Management: Waste Act (No. 59 of 2008)

NWA: National Water Act

NHRA: National Heritage Resources Act (Act No. 25 of 1999)

OHSA: Occupational Health and Safety Act

SAHRA: South African Heritage Resources Agency

SDF: Spatial Development Framework

SANBI: South African National Biodiversity Institute

TB: Tuberclosis

WDM: Waterberg District Municipality

EXECUTIVE SUMMARY

This document is the Environmental Management Programme Report (EMPr) for the Eskom Chloe-Gilead power line deviation project in the Waterberg district. which is being undertaken by Eskom Holdings Soc (Eskom). The EMPr outlines the roadmap which the construction and operational phase of the relocation project will adhere to, in order to minimise identified environmental impacts and uphlold nature conservation principles, as per requirements of the National Environmental Management Act (No.107 of 1998 (NEMA).

Electricity in Mogalakwena Local Municipality is supplied and serviced by Eskom in conjunction with the local municipality. However, the majority of the rural areas receive their electricity supply directly from Eskom. Eskom is divided into several operating units and the unit that manages and supplies within Mogalakwena Local Municipality is the Limpopo Operating Unit (LOU). LOU has identified a need to upgrade the electricity distribution infrastructure between the existing Chloe and Gilead substations in order to improve the reliability of the existing electricity supply and also where possible provide new supply for any additional customers. For the pole structures, Eskom will make use of wooden material which is currently being used on site. However, it has been observed that the wooden poles that are currently being utilised do not have a long lifetime span due to wood material's susceptibility to environmental effects which can lead to overall deterioration of the wood structure through decay. This has therefore necessitated the use of steel monopole structures which a stronger and cheaper option in terms of cost per year. Thus, the use of steel monopoles is considered as an alternative option to wooden poles which are considered as the preferred option.
Using information collected by specialist during the site visits and experience from past projects of the same nature, potential impacts were compiled and assessed in this EMPr and management and mitigation measures suggested. Major impacts expected are soil erosion due to land clearing and movement of both workers and machinery. These, amongst other impacts, will be minimised or avoided by use of effective and easy to implement methods such as mechanically stabilising the soil or avoiding unnecessary vegetation clearing. Public participation and stakeholder consultations were also done to identify how the development would impact the local communities. It is expected that if there is need for casual labour, it will be sourced from the local communities.
With the advertent implementation of this EMPr during the project's construction and operational phases, environmental and social risks will be minimised, mitigated and managed in a way that results in a net positive benefit to both humans and the environment. The success of the EMPr implementation is dependent on the allocation of resources for the execution of the development mitigation measures. The designated roles will be supported with necessary tools and equipment including information that will enable the assigned personnel to enforce the commitments presented in the EMPr. A dedicated environmental control officer is recommended to ensure that there is an

assigned designated accountable officer who will be reporting to the competent authority on the effectiveness of the environmental control during the project implementation stages. A contractor has to appoint this person and should the ECO be appointed by Eskom, the accountability roles will be structured such that the ECO reports directly to the social officer.

I. INTRODUCTION

The construction of infrastructure can have a major impact on the natural environment. It is therefore imperative that precautions are taken to ensure that environmental degradation is minimised while the project is undertaken. This requires a concerted effort from the project team and proper planning is of utmost importance.

Myezo Environmental Management Services (Pty) Ltd (Myezo) has been appointed by Eskom Holdings SOC Limited (Eskom) to undertake environmental studies for the proposed construction activities for the deviation (approximately one (1) km) of an existing Gilead Powerline at Gilead Substation located within Mogalakwena Local Municipality, Waterberg District Municipality in Limpopo Province. This Environmental Management Programme (EMPr) has been compiled as part of the environmental studies and will be a guideline for the mitigation and management measures to be implemented during the construction phase of the project as well as during the rehabilitation phase. This EMPr is a living document that guides the day-to-day activities throughout the lifecycle of the project; it may from time to time, require revisions as may be dictated by the course of construction.

This EMPr has been compiled in compliance with Section 28 of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) which imposes a duty of care and remediation of environmental damage. It has also been complied in line with NEMA regulations Government Notice No.326, Appendix 4, thus, this EMPr structured is in accordance with the Appendix 4 as presented in Table 1.1-1.

1. Details and Expertise of the Environmental Assessment Practitioner

This section provides details and expertise of the Environmental Assessment Practitioner (EAPs) together with the EAP's detailed Curriculum Vitae as prescribed under Section a (i) and (ii) of Appendix 4. The compilation of this Environmental Management Programme (EMPr) was done by Myezo Environmental Management Services (Pty) Ltd. Ms. Babalwa Fatyi is an environmental consultant with over 20 years' experience carrying out Basic Assessments and Water Use Licence Applications for different clients including Eskom and working with government departments such as the Department for Environmental Affairs. She led, project managed and participated in over 25 environmental impact assessments and more than 20 Basic Assessment Reports (BARs) and compiled more than 25 Environmental Management Plans (EMPs

As a qualified EAP, Babalwa has been instrumental in the coordination of the Public Participation Process, either as a lead stakeholder engagement specialist and or as an overseer of the process. Partaking her duties as public participation leader, her duties included designing stakeholder

Table 1.1-1: Content of an EMPr as per the EIA Regulations

No	Requirement	Reference in EMPr
a	Details of i) The EAP who prepared the EMPr; and ii) The expertise of the EAP to prepare an EMPr, including a curriculum vitae;	Section 1.1 and Appendix 1.1-1
b	A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.	Section 2
c	A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers.	Section 3
d	A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development, including: i) Planning and design; ii) Pre-construction activities; iii) Construction activities; iv) Rehabilitation of the environment after construction and where applicable post closure; and v) Where relevant, operation activities.	Section 4
f	A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in 1d and 1e above will be achieved.	Section 4
g	The method of monitoring the implementation of the impact management actions contemplated in 1f above.	Section 4

No	Requirement	Reference in EMPr
h	The frequency of monitoring the implementation of the impact management actions contemplated in 1f.	Section 4
i	An indication of the persons who will be responsible for the implementation of the impact management actions.	Section 4
j	The time periods within the impact management actions must be implemented.	Section 4
k	The mechanism for monitoring compliance with the impact management actions.	Section 5
l	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations.	Section 4
m	An environmental awareness plan describing the manner in which i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment.	Section 4 & 5
n	Any specific information that may be required by the competent authority.	N/A

engagement strategy that would provide Interested and Affected Parties (IAPs) with an opportunity to raise their issues and concerns, regarding the proposed project activities and enable those suggestions. concerns, to be adequately captured by the allocated team that was responsible for stakeholder engagement process, addressed and included in the Environmental Report. In addition, Babalwa has experience with working and engaging specialists since a number or environmental reports she compiled to date required that she engage with specialist. When engaging with specialists, her duties include designing of terms of references (ToRs) that are project specific and ensure that specialist studies reports' findings and recommendations are included as part of the EIA report to be submitted to the Competent Authority for environmental authorisation.

Babalwa Fatyi has experience directing and managing environmental sustainability projects current across various industries and sectors, including: environmental management programmes and associated stakeholder engagements and impact evaluation and development of environmental management plan in support of environmental authorisation applications. She has a broad range of experience in leading the implementation of environmental management plans on sites through development of implementation plans with clear set objectives and structures, roles and responsibilities, design of performance monitoring plans and designing communication and risk management plans throughout the project implementation phases. She is also experienced in conducting Performance assessment audits as well as developing and maintaining integrated Safety, Health and Quality management systems.

Babalwa is a registered Environmental Assessment Practitioner (EAP) and Professional Natural Scientist (400123/01). Having graduated with BSc Degree Majoring in Zoology and Botany in 1997 at the University of Witwatersrand, she went on to pursue and complete her Masters of Science qualification, at the same university, graduating cum laude. A detailed CV for the EAP is attached as Appendix 1.1-1.

1.1 Need for the Project

Electricity in the Mogalakwena Local Municipality is supplied and serviced by Eskom in conjunction with the local municipality. However, most of the rural areas receive their electricity supply directly from Eskom. Eskom is divided into several operating units and the unit that manages and supplies within Mogalakwena Local Municipality is the Limpopo Operating Unit (LOU). LOU has identified a need to upgrade the electricity distribution infrastructure between the existing Chloe and Gilead substations, to improve the reliability of the existing electricity supply and also where possible provide new supply for any additional customers.

The Mogalakwena Local Municipality (MLM) if facing electricity challenges, that are attributed more specifically to dilapidated electricity infrastructure as well as the lack of capacity on Eskom main feeder lines (Mogalakwena Local Municipality Integrated Development Plan 2019/2020). The project aims at renovating the existing Chloe - Gilead 66 kV powerline due to wooden poles that have reached their lifespan and are no longer serving their purpose effectively. A new feeder has also been constructed on site; thus, the new powerline will then be connected to the new feeder. The project will allow the local municipality to meet its mandate to provide electricity to residents and businesses without disruptions.

1.2 Scope and Purpose of the EMPr

This EMPr is applicable to Eskom's Chloe-Gilead powerline deviation project. It is a management programme to be complied with, by the developer and his contractor during the construction and rehabilitation phases of the Project and encompasses associated environmental aspects of the works.

The purpose of this document is to provide guidelines for the application of environmental best practice to Eskom Holdings and its appointed Contractor, commissioned to construct the proposed project.

This document shall be seen as part of the contract with the appointed contractor. The EMPr together with appropriate enabling clauses, will thus be part of the enquiry document, to make recommendations as set out in this document, enforceable under the general conditions of the contract. It will be ensured that relevant environmental management specifications, as contained in the EMPr are incorporated into the tender and contract documentation. Relevant payment items shall be incorporated into the bill of quantities. During the tender evaluations, the ability of the potential contractors to adequately manage the environmental issues will be assessed.

The EMPr has a long-term objective to ensure that:

- Environmental management considerations are implemented from the start of the project including:
- Ensure that the activity is undertaken in compliance with national and provincial environmental legislations as well as local by-laws and policies;
- Detail mitigation measures, timeframes and criteria for assessing the success or failure of each measure;
- Provide detailed monitoring programmes to ensure compliance;
- Provide input and strategies for environmental quality control and risk management;
- To preserve the natural environment by limiting destructive actions on site;
- Ensure appropriate restoration of areas affected by construction;
- Prevent long term environmental degradation;
- Ensure that precautions against damage and claims arising from damage are taken timeously; and
- The completion date of the contract is not delayed due to avoidable environmental issues arising that could be mitigated through a well-structured EMPr.

2. A DETAILED DESCRIPTION OF THE ASPECTS OF THE ACTIVITY THAT ARE COVERED BY THE EMPR AS IDENTIFIED BY THE PROJECT DESCRIPTION

2.1 PROJECT DESCRIPTION

This section gives a description of the specific activities that will be taking place with the aim of deviating the Chloe-Gilead powerline (approximately one (1) kilometre. Furthermore, the section also identifies aspects related to the proposed activity.

2.1.1 Technical Details

The technical undertaking will involve the following: -

- The erection of poles and lines for a length of about 1 km
- A servitude of about 36 meters, 18 meters 18 metres to both sides from the centre of the structure.
- Clearance of vegetation on the servitude and the construction laydown area.
- There are no access roads to be constructed since the proposed powerlines is situated along existing routes.

The proposed powerline structures include wooden pole structures and steel monopole structures and these are detailed in Sections 3 and 7 of the BAR.

2.2 Development Corridor

For the proposed activities, the methodology applied include undertaking desktop studies as well as field or site surveys. Initial desktop studies undertaken include generation of a screening report making use of the Department of Forestry, Fisheries and Environment (DFFE) (2021) screening tool where a 500-metre buffer zone was employed. The DFFE Screening Tool results are attached as Appendix 2.2.1. The results of the screening tool were also reinforced by a field assessment that was undertaken. Subsequent to the desktop study and site survey, Biodiversity (Ecological and Avifaunal) Specialists and Heritage and Paleontological Specialists were commissioned. The specialists also utilised desktop studies and field assessments during their studies and a study corridor of about 500 metres was utilised during field studies. However, due to the nature of the studies, for Biodiversity (Ecological and Avifaunal) Studies, aspects such as drainage of the ephemeral channel; the Ecological Support Areas; vegetation classification; and Bird Areas were mapped beyond the 500 metres buffer zone used during field assessments.

2.3 Identified Aspects

In order to oversee the successful construction of the project and associated infrastructure, various construction activities as well as their associated aspects have been identified. From the identified aspects it is possible to determine the associated environmental impacts and therefore set the base to formulate measures to manage and mitigate these environmental impacts on site. Identified aspects are covered in Section 4 of this EMPr

3. Description of Locality

This Section gives a description of the project locality as well as providing graphical presentation, maps, of the proposed site as well as the environmental sensitive areas and the associated infrastructures.

The proposed project will be undertaken at Eskom Gilead Substation located on Portion R/2 of Farm Gillimberg 861LR, under the jurisdiction of Mogalakwena Local Municipality within Waterberg District Municipality, Limpopo Province. The Surveyor-general 21-digit codes for the site are TOLR00000000086100002.

The project will involve the construction of a powerline (approximately 1 km) and the dismantling of the existing powerline as well as connecting the powerline to an already existent feeder. A detailed project locality is provided in Section 2.2 of the Basic Assessment Report (BAR). Project locality map is presented on Figure 3.1-1 and Figure 3.1-2 shows the powerline deviation route. There is an ephemeral stream on the site and this is shown on Figure 3.1-3. Project Maps are also attached as Appendix 3.1-1. Project infrastructure layout plan will be done before commencement of works and this will be submitted to the competent authority for approval.

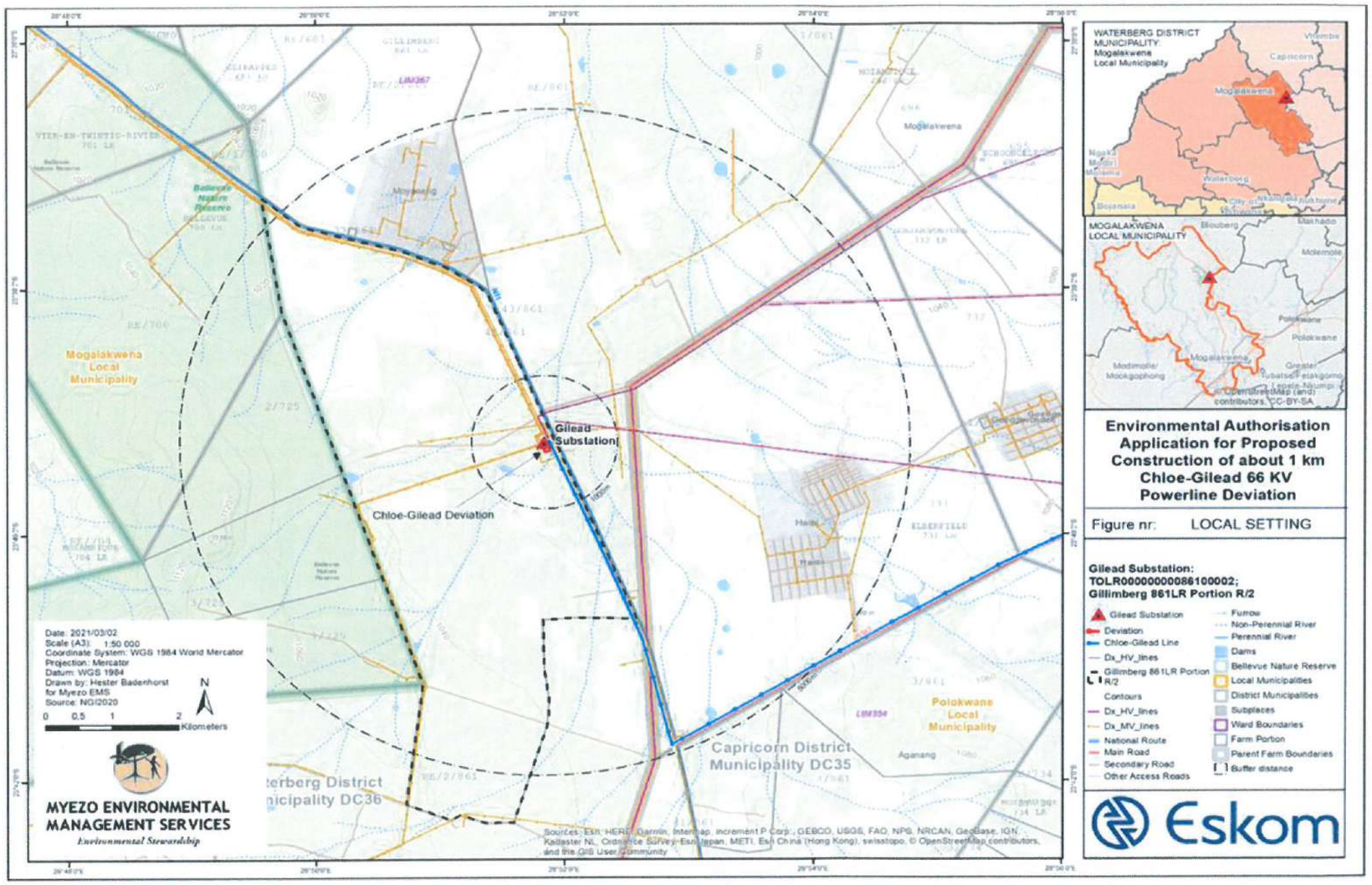
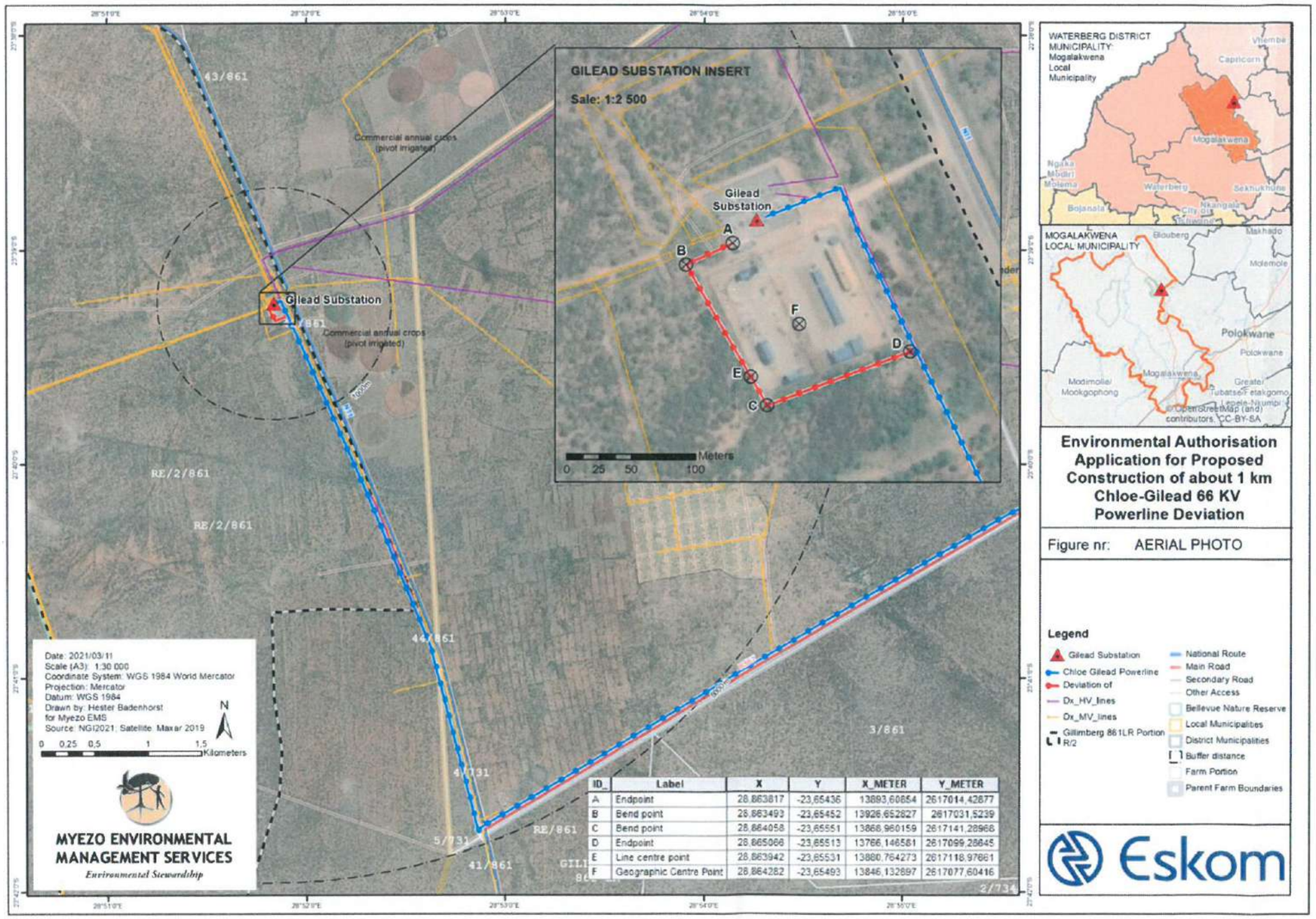


Figure 3.1-1: Project Locality Map



ID_	Label	X	Y	X_METER	Y_METER
A	Endpoint	28.863817	-23,65436	13893,60854	2617014,42677
B	Bend point	28.863493	-23,65452	13926,652827	2617031,5239
C	Bend point	28.864058	-23,65551	13868,960159	2617141,28968
D	Endpoint	28.865066	-23,65513	13766,146581	2617099,28645
E	Line centre point	28.863942	-23,65531	13880,764273	2617118,97661
F	Geographic Centre Point	28.864282	-23,65493	13846,132897	2617077,60416

Figure 3.1-2: Map Showing Powerline Deviation

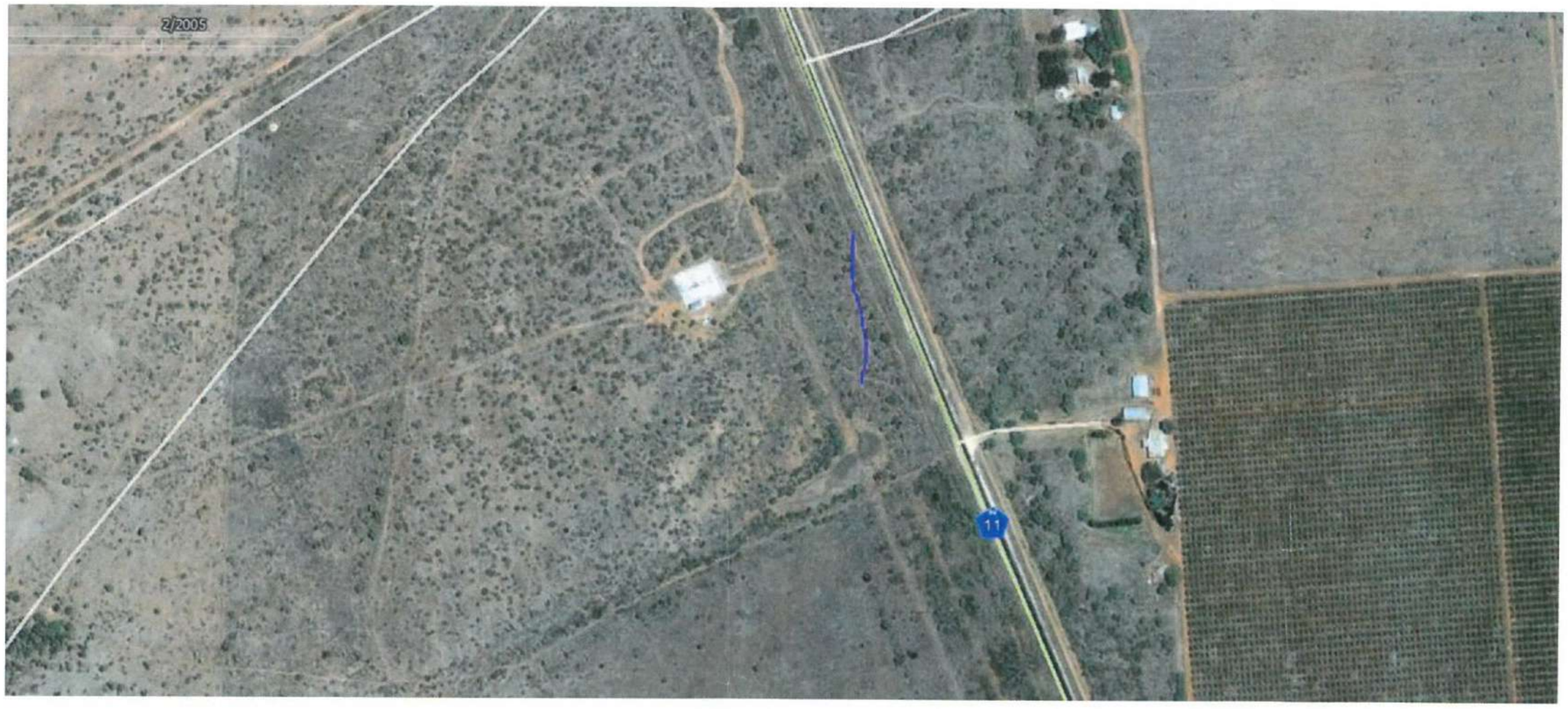


Figure 3.1-3: Map showing ephemeral stream (blue line) in relation to the site (white patch)

4. IMPACT MANAGEMENT OUTCOMES

4.1 DESCRIPTION OF PROJECT RELATED ACTIVITIES AND ASPECTS

In order to oversee the successful construction of the project and associated infrastructure, various construction activities as well as their associated aspects have been identified and listed. From the identified aspects it is possible to determine the associated environmental impacts and therefore set the base to formulate measures to manage and mitigate these environmental impacts on site. For the mitigation measures developed, management actions need to be formulated and this need to implemented, thus, responsibilities for implementation should be allocated as prescribed in Section (i) of Appendix 4 of NEMA Regulations.

4.1.1 Environmental Management Structure

In fulfilment of Section (i) of Appendix 4, there will be a number of functional posts that will either directly or indirectly have an environmental management function as shown in Figure 4.1-1. Important to note, that although the functions area shown and described separately, these functions could be the responsibility of one post within the organisation, except for the Environmental Control Officer (ECO) post, which is an independent body reporting to the Competent Authority.

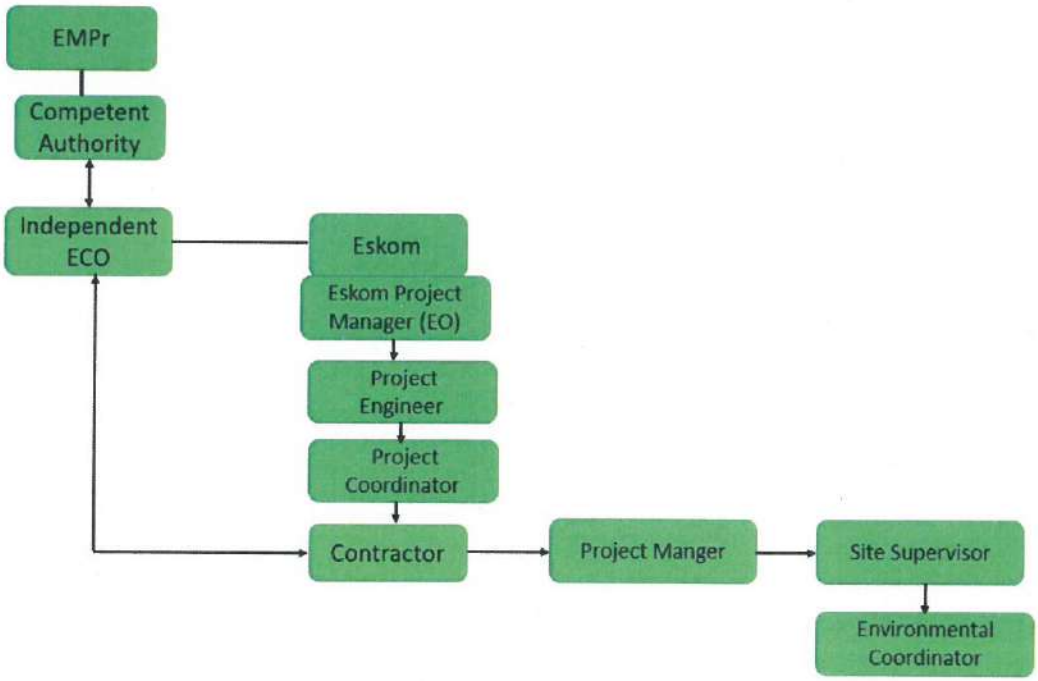


Figure 4.1-1: Environmental Management Structure

4.1.2 ROLES AND RESPONSIBILITY

Effective environmental management during the design and construction phases of the Eskom Gilead Project will be critically dependent on a number of project personnel. The purpose of this section is to define roles for personnel and to detail associated responsibilities in the execution of the EMPr. Before doing so it is also necessary to define the various parties that bear environmental management responsibilities for the Eskom Gilead Project, during design and construction.

Project Owner – Eskom

Eskom is the owner of the Chloe-Gilead powerline deviation project and is the independent decision-making authority and ultimately accountable and responsible with respect to implementation of the contract and compliance with this EMPr as well as the compliance to the applicable legislation, the EA, and all relevant Eskom Standard Policies. In addition, Eskom will be responsible for overseeing the implementation of the project requirements that include, but are not limited to:

- Finalise Design Requirements
- Access to site;
- The surveying of the site
- Acquiring of all relevant permits and licences;
- Social aspects related to the employment of local labour;
- Development of construction Method Statements where applicable;
- Environmental Awareness Training; and
- Photographic record of areas prior to site establishment and construction.

Contractor

Eskom will appoint an approved contractor through its normal procurement processes. The requirements of this EMPr will form part of the tender documents and Bill of Quantities to ensure that the approved contractor will price and fully comply with all environmental legislation and requirements.

The contractor is responsible for the implementation and compliance with recommendations and conditions of the EMPr, ensuring compliance with the EMPr at all times during construction activities. The Contractor will:

- Provide all necessary supervision during the execution of the project.
- Appoint a Environmental Coordinator (EC).
- Implement the projects as per the approved project EMPr.
- Ensure that implementation is conducted in an environmentally acceptable manner.
- Fulfil all obligations as per the agreed contract.

- Ensure all Sub-contractors under his supervision adhere to the applicable environmental contract specifications in accordance with the requirements of the EMPr.
- Report any incident, including environmental, to the Project Coordinator and Eskom Environmental Officer (Eskom EO) immediately and follow the initial notification with a flash report within 24hours of the event occurring. The flash report will include details of the incident, which includes the extent, reasons, preventative actions, and corrective actions taken.
- Ensure that all employees and Sub-contractors attend Environmental Awareness Training provided by Eskom EO, EC or ECO.
- Ensures compliance with pertinent environmental legislations and other legally binding documents.
- Undertake toolbox talks on environmental and safety issues.
- Ensure safe housekeeping and clean environment.

Environmental Manager (Eskom Environmental Officer)

The Eskom Environmental Project Manager will focus on oversight and contractor compliance. The Environmental Manager can be the Project Owners representative, therefore, reports to Eskom. The role of the Environmental Manager is to support the successful implementation of the EMPr through:

- Plan and direct the implementation of the EMPr.
- Ensure that the requirements of the EMPr are communicated, understood and enforced by personnel on site.
- Ensure that contractors on site develop, implement and monitor the required environmental management functions.
- Evaluate the applicability and accuracy of the EMPr and the Method Statements throughout the construction process.
- Ensure that all statutory requirements are met.
- Manage all public and interested and affected party complaints, claims and recommendations.

Contractor Environmental Coordinator

The Environmental Coordinator (EC) is employed by the Contractor and is responsible for overseeing the implementation of the EMPr and relevant specifications for the duration of the project. The EC should have a clear understanding of the project as well as all the environmental matters pertaining to the project and should have a good knowledge on the applicable environmental legislation and processes.

Responsibilities of the EC include:

- Aiding the Contractor to comply with all the project environmental requirements.
- Develop documents such as environmental checklist, environmental incident log, complaints register .....
- Ensure that the developed documentation is available onsite and is being used.
- Conduct environmental activities and environmental awareness training (EA and EMPr) of all personnel on site.
- To record and forward complaints received from the public to the Project coordinator or any other involved Department within Eskom.
- Resolve conflicts.
- Keep detailed and accurate records of the EMPr related activities on site.
- Conduct EA and EMPr induction for all site employees and visitors.
- Report to the ECO on the monitoring of environmental issues.

Environmental Control Officer

Eskom shall appoint a suitably qualified and experienced independent Environmental Control Officer (ECO) who will be responsible for the bi-monthly monitoring of the project compliance with the Environmental Authorisation, EMPr and applicable environmental legislation. The contract for the ECO will extend from the commencement of the Construction Phase to the handover of the site by the Contractor to Eskom.

The responsibilities of the ECO include but are not limited to:

- Undertaking a due diligence audit bi-monthly upon commencement of construction activities when the site is handed over to the contractor.
- Review and analyse the monitoring data which will include but not be limited to water, dust and noise monitoring, complaints and pollution incidents and non-conformances against the limits that have been set in the environmental specifications and/or the Environmental Authorisation.
- Site inspections will be conducted in such a way that all the construction activities are covered in the month. The site inspection will include a physical visit to the construction sites and a report will be compiled to summarise the findings.
- Every month the ECO will also provide a monitoring report to the Competent Authority based on the data gathered by the Contractor and evaluate the information against the performance of the EA and EMPr compliance.

It is expected that the ECO will maintain open communications with Eskom to ensure that non-conformances are addressed as soon as possible on site.

Eskom Project Coordinator

- Ensure that the requirements as set in the EA and EMPr are adhered to.
- Ensure that all approval required are obtained before construction start and that they are kept on site.
- Direct the Contractor/s whenever necessary to comply with the conditions of the EA and EMPr.
- The Site Manager must attend site meetings, where required, to be able to report on and respond to any environmental issues and be issued with copies of minutes of such meetings.
- Advise the project team on environmental issues within the defined work and surrounding areas.
- Recommend corrective action where there is non-compliance with the EMPr and EA.

Contractor Site supervisor

- Keep an up-to-date diary of site activities and complaints.
- Completing documents such as environmental checklists, environmental incident log, complaints register, daily site register; and non-compliance record.
- Liaise closely with the Engineer and the ECO and ensure that the works on site are conducted in an environmentally sensitive manner.
- Will Notify the ECO, Eskom EO and project coordinator of all incidents, accidents and transgressions on site with respect to environmental management as well as requirements of the EMPr and corrective actions/remedial action take.
- Ensure that all of its sub-contractors, employees, suppliers, agents etc. are fully aware of the environmental requirements detailed in the EMPr, as well as that of the subsequent method statements.
- Liaise closely with the Engineer and the ECO and ensure that the works on site are conducted in an environmentally sensitive manner.

Engineer

- The engineering designer must adhere to any site-specific mitigation measures supplied by specialist study reports, EA and EMPr.
- The final design of the power lines must accommodate any requirements of the landowners, if any, as communicated during the Public Participation Process.

4.2 Construction Environmental Management Programme

Construction refers to the phase in the project during which the building and associated infrastructure will take place.

Project activities will be divided into the following phases:

1. Planning and Infrastructure Design
2. Pre-construction activities or Site establishment and infrastructure.
3. Construction activities.
4. Rehabilitation

Relevant activities and associated aspects as well as impacts were identified and management or mitigation measures were developed for each phase listed above. The activities and associated aspects which have been identified for the proposed projects as well as some environmental elements which need to be managed are listed in Table 4.2-1 to Table 4.2-4.

For the proposed project, an assessment of possible impacts during the project life cycle stages was done through the establishment of a standardised and internationally recognised methodology to assess the significance of the potential environmental impacts. For each impact, the SEVERITY (size or degree), DURATION (time scale) and EXTENT (spatial scale) were used to determine the CONSEQUENCE of the impact. A description of the methodology applied is detailed in Section 9 of the BAR.

Impacts identified for this project are listed under the Impacts columns in Tables 4.2-1 to 4.2-4.

A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all the project phases are presented in detailed under Section 9 and 10 of the BAR. In addition, these are summarised under Tables 4.2-1 to 4.2-4 for ease of implementation.

In addition, Tables 4.2-1 to 4.2-4 provides description of the proposed impact management actions identifying the manner in which the impact management outcomes will be achieved, including actions to avoid, remedy and control an activity or process which causes pollution or environmental degradation. Therefore, the prescription of Section d to Section I of Appendix 4, NEMA Regulations have been incorporated under Tables 4.2-1 to 4.2-4.

Table 4.2-1: Planning and Infrastructural Design Phase

Activity/Aspect /Environmental elements	Impacts	Outcomes	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
• Infrastructure Design	• Degradation of sensitive areas.	• To ensure that no infrastructure will be positioned in sensitive areas. • To avoid destruction and degradation of sensitive areas.	• Identified sensitive areas such as ephemeral drainage will be avoided.	• Infrastructure layout Plan showing infrastructure outside sensitive areas.	• Eskom Engineer • Eskom EO	• Prior to commencement of construction activities
• Method Statements	• Environmental degradation	• To minimise degradation of resources.	• The Contractor to submit Method Statements (MS) prior or after commencement of activities. The following MS, containing details of all site layouts and environmental protection measures proposed, to be submitted to Eskom EO for review and acceptance: ➢ Site access (including entry and exit points). ➢ Refuelling procedure or plan ➢ Environmental Incident Management plan ➢ All material and equipment storage areas including storage	• Approved Method Statements	• Contractor E Coordinator • ECO • EEO • Engineer	• Prior to commencement of construction activities

Activity/Aspect /Environmental elements	Impacts	Outcomes	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			areas for hazardous substances. ➢ Construction offices (if necessary). ➢ Security requirements. ➢ Waste Management plan. ➢ Provision of potable water and mobile chemical ablution facilities.			

Table 4.2-2: Pre-construction activities or Site establishment and infrastructure.

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
• Site Establishment / Laydown area construction	• To minimise disturbance of resources • To minimise habitat destruction • To minimise complaints from community members	• Biodiversity loss	• Construction camps on the site will be required to be established in appropriate locations prior to the commencement of construction, preferably within already disturbed areas. • After completion of the contract, these areas will be rehabilitated. • No unauthorised access to the construction laydown area. • High visibility temporary barriers shall be installed, demarcating the perimeter of restricted access areas as well as the project site. • The use of razor wire for fencing will be avoided.	• Observations • Pictorial Records • Employee Records	• EEO • Contractor • EC	• Pre-construction activities • Site Establishment

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
		Vegetation loss	• The area does not have rare or endangered plant species. • Unnecessary vegetation clearing, especially outside of demarcated project area, will be avoided at all cost. • Project area to be cleared will be visibly demarcated to avoid unnecessary vegetation clearing. • Only trees and shrubs directly affected by the works may be felled or cleared, provided that a permit is not requirement. • The natural vegetation encountered on the site will be conserved and left intact as much as possible.			
		• Socio-economic	• The Contractor will provide water for human consumption will be available at the site offices and at other convenient locations on site. • The contractor shall establish a demarcated lay down or site camp area and provide electricity; sanitation facilities; and portable water for domestic consumption. • The Contactor will ensure that the construction workers' movements are monitored and locals' norms and traditions will be observe. • In line with Eskom's policy on BBBEE, the contractors and sub-contractors shall be required to purchase an			

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			agreed to quota of materials, goods and services from local businesses. • The Contractor will give preference for casual labour will be given to local communities. This creates temporary employment. • Contractor will ensure that for casual labour, women and people with disabilities are also given an opportunity. • The Contractor will keep employee records. • Contractor shall comply with labour legislation and standards. • The contractor will ensure that all employees have undergone the police screening process mentioned in the Scope of Work.			
		• Water and Soil pollution	• Should there be need for ablution, chemical toilets shall be supplied and will be regularly cleaned and maintained by the contractor. • The Contractor shall arrange for regular emptying of toilets and will be entirely responsible for enforcing their use and for maintenance. • The ablution facilities will be at least 100m distance from the watercourses and associated buffers. • No construction workers will stay on site.			

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
• Environmental Awareness Training	• To ensure that all site personnel have basic level of environmental awareness training.	• Non-compliance with the EMPr and EA conditions	• Environmental induction should be done to all workers on site. • Daily toolbox talks at the start of each day with all workers onsite should be held. At these sessions relevant environmental and communications requirements should be raised to alert workers to particular concerns associated with their tasks for that day or the area which they are working.	• Signed training attendance register •	• Contractor • ECO • Eskom EO	• Site Establishment to ongoing

Table 4.2-3: Construction

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
• Movement of construction vehicles and machinery (this aspect is also relevant during pre-construction phase, thus measures will be implemented)	• To minimise disturbance of resources • To minimise soil and water pollution	• Soil and water contamination	• No vehicle servicing and maintenance will be done on the construction site. If that's not possible, refuelling or repairs will be done on an impervious surface and at least 30 metres away from watercourses. • Dust suppression will be done as in when required. This reduces the severity of the impact. Use of binding agents can be employed to reduce frequency of water use. • Well serviced machinery and vehicles will be used in order to reduce noise and vibration levels.	• Noise monitoring • Observations • Pictorial Records • Complaints Register	• Site supervisor • EC • Eskom Project Coordinator • ECO	• On-going during the construction phase

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			• Vehicle and machinery use will be minimum to moderate hence the severity.		Site Supervisor.	
		• Negative health impacts to humans and animals caused by noise	• Where levels go beyond 85 dB, noise protection devices such as earplugs will be used. • Operations shall be restricted to normal working hours as stipulated in the contract.			
• Alien Species Control	• To conserve flora. • To ensure the control of alien invasive species	• Spread of alien invasive species and possible damage to endangered vegetation	• Alien species found onsite include *Cereus jamacaru, Melia azedarach, Tagetes minuta* and *Agave sisalana* and these will be cut and burnt before any vegetation clearing begins. • An alien vegetation management will be implemented	• Observations • Pictorial Record	• Eskom EO • EC • ECO	• Pre-site establishment • Construction
• Erosion control	• To avoid soil erosion of areas within and downstream of the construction activities.	• Impact on soils and habitats and sensitive environs.	• Identified areas where erosion could occur should be appropriately protected by installing the necessary temporary and/or permanent drainage works as soon as possible and by taking other appropriate measures to prevent water from being concentrated in the watercourse. • Any erosion channels which develop during the construction period should be suitably backfilled, compacted and restored to a proper condition (i.e. vegetated etc.). • Where excavation takes place, the	• Bi-weekly visual inspections of erosion sensitive areas • daily inspections after rainfall events. • Recording and reporting will be through inspections	• Site supervisor • ECO	• On-going during Construction activities

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			affected area should be properly stabilised and revegetated to minimise erosion risk. • All erosion protection measures should be maintained on a continual basis. • Corrective actions should be taken as and when required to stop any signs of erosion.	notes and monthly monitoring report.		
• Water Resources	• To avoid water resources contamination • To conserve water resources at all times.	• Possible water contamination from spillages.	• Under no circumstances must surface or ground water be polluted. • Adequate oil containment precautions must be taken. • Vehicles shall not be serviced on site. • Ensure that measures to contain spills are readily available on site (oil spill kits and oil drip trays). • If a spill from a construction vehicle occurs it must be reported to the Environmental Management Officer with immediate effect. A bio-remediation contractor must be appointed to rehabilitate large oil spillages. Small oil spillages must be cleaned immediately with an oil spill kit. • If pollution of any surface or groundwater occurs, the Regional Representative of the Department of Water Affairs as well as Eskom's Environmental Management Officer must be informed within 24 hours. • Use oil drip trays to contain any possible spill of oil from faulty	• Incident Recording Spills and management thereof.	• Contractor EO • ECO • EM •	• On-going during Construction

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			equipment containing oil and construction vehicles while parked overnight.			
• Air quality management	• To ensure that dust emissions from construction activities do not result in adverse health or other negative effects.	• Dust nuisance from hole excavations, vegetation clearing and dirt roads.	• Vegetation cover will preferably be maintained e.g. removal of vegetation should be avoided until such time as soil stripping is required. • Excavation, handling and transport of erodible materials should be avoided during periods of excessive wind. • Location and management of stockpiles is of great importance.	• Visual observations of dust levels • Dust management to be done through dust suppression as and when required	• Contractor Site supervisor • ECO	• On-going Construction
• Traffic Management	• To ensure that traffic impacts as a result of construction activities are minimised. • To ensure that workers are not injured by vehicles or machinery • To protect locals from injuries	• Decrease in biota integrity and change in water quality	• A speed limit of 30 km/h for heavy vehicles; and 50 km/h for other construction vehicles will be strictly enforced. On public roads the specified speed limit would be applicable. • Where possible, construction traffic should be scheduled in off-peak traffic times. • Appropriate traffic safety signage should be provided to warn the public of construction traffic and flagmen will be on duty where traffic merges with normal road traffic. • Construction vehicles shall be limited on any road in the vicinity between 7:00 to 18:00, Monday to Friday. • Locals should not be allowed to cross construction areas.	• Placement of road signs when necessary.	• Contractor Site supervisor • ECO	• On-going construction

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
	and noise					
• Waste Management	• To ensure the efficient management of waste on site • To ensure minimal impact on the surrounding environment • . Minimise waste material being strewn in the environment	• Water pollution •	• The areas around storage of potential contaminants such as oil and fuel should make use of 150% bunding. • Proper waste bins will be put in place in contractor camps that will also accommodate dismantled wooden poles and cable conductors. • Organic solid waste, such as vegetation from bush clearing, to be composted. • Waste will be collected regularly to approved sites. • No discharge of pollutants such as cement, concrete, chemicals, fuels or oils should be allowed into any water resource.	• Intermittent observation • Waste Disposal Records	• Contractor • ECO • EC • EM	• On-going during construction phase
• Archaeological Resources	• To preserve any heritage, cultural or archaeological sites that might be encountered during	• Destruction of sites of archaeological and heritage significance.	• No archaeological artifacts were observed on site and the likelihood of finding any artefacts is very low. • If any artefacts are found during excavation or digging, an archaeologist will be notified and works temporarily ceased. • A qualified archaeologist will be engaged with simultaneous notification of SAHRA if there are any artefacts	• Intermittent observation	• Contractor • Contractor EO • ECO • EO • PC	• On-going during site establishments and construction

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
	the constructio n phase.		discovered during the works. • Project Coordinator, ECO and Eskom Environmental Officer should be notified within 24 of discovering archaeological artefacts.			
• Public Health	• To ensure the public health standards are complied with. • To minimise diseases	• Diseases • Water and Soil pollution	• Workers will make use of existing facilities for ablution. The Contractor must ensure that there are sufficient mobile toilets available for the workers onsite. The Contactor will also ensure that waste disposal certificates are issued by the service provider. • Mobile toilets will be placed at least 100 metres away from any water bodies or downhill of any drinking water source. These will be properly and firmly secured to the ground to avoid tipping over and causing a spill. • Mobile toilets will be emptied regularly by the service provider and will provide disposal certificates.	• Intermittent observation • Sewage collection slips.	• Contractor • EC • ECO • Eskom EO • PC	• Site Establishm ent • Constructi on • Rehabilitat ion
• Safety, Health and Environment	• To ensure safety for both human and animals	• Injury of humans. • Spread of infectious diseases such as COVID-19 and STIs	• During the safety induction, the employees will be informed of all environmental, health and safety issues. • The Contractor will provide all employees or other persons entering the site with health and safety induction training pertaining to the hazards prevalent on the site and with the necessary Personal Protective Equipment (PPE).	• Observation • Incident register • COVID Screening Register	• Contractor • PC • ECO	• Ongoing during all project phases

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			• All employees will also be informed of the relevant emergency procedures. • Daily safety briefings can be conducted to reduce incidences of injury. • There will be a first aid kit on site and at least one worker with first aid knowledge. • Barricade construction site and strictly control entry to authorised personnel only and all personnel should be required to wear protective gear. • The construction area shall make use of warning signs. • All construction vehicles will adhere to the national traffic regulations. • Workers will undergo COVID-19 screening before coming on site.			
• Project Communication and Environmental documentation management	• To ensure compliance with the requirements of the regulatory authority • To assign roles and responsibilities to ensure compliance. • To	• Non-compliance with the conditions of the EMPr and EA.	• A copy of the EMPr and the EA will be made available on site at all times. • The EMPr as well as the EA will be used for referral as the project progresses. The EA will also be presented to the authorities at any random time that they might visit the site. To ensure effective on-site communication and maintained environmental performance, copies of all documentation described in the EMPr will be maintained on site at all times and will be provided on request to authorities or stakeholders for inspection.	• Availability of an EMPr and EA copy onsite.	• Contractor • Eskom EO • ECO	• Pre-site establishment to Ongoing

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
	implement and comply with the requirements of the EMPr.		• The Site Instruction book will be kept on site for recording of instructions. • An ECO monitoring compliance report to be maintained and to be kept on site at all times and will be provided on request to authorities or stakeholders for inspection. • Regular site meetings will be held amongst all project stakeholders. The purposes of the meetings shall be: • To discuss and resolve non-conformance to all environmental legal requirements. • To assess the general state of the environment on site and discuss any environmental problems which may have arisen; • To accommodate all stakeholders in the decision-making process regarding social and environmental issues on site.			
• Vegetation clearance and biodiversity management	• To conserve flora. • To ensure the control of alien invasive species and to ensure	• Damage to endangered vegetation • Damage to topsoil	• The footprint area should be kept as small as possible and therefore no additional areas will be cleared except for the immediate work areas. • Minimum clearing to the bushveld vegetation be observed in order to limit impacts. • Construction workers will not be allowed to poach or make use of ecosystem services. • Where use of herbicides is unavoidable, only registered operators	• Observation	• Contractor • ECO	• Site Establishment Construction • Rehabilitation

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			will be contracted.			
• Hazardous Substances Management, Waste and Pollution Control	• To ensure safe handling, storage use and disposal of hazardous substances. • To ensure full compliance with the requirements of the applicable legislation.	• Impact on soil and water resources due to accidental spillages.	• Storage of hazardous substances to be minimized. Non-toxic alternatives will be used where possible. • All hazardous substances will be stored in appropriate containers with at least 60% bunding with SABS approved lining. • All stored hazardous substances will have a Materials Safety Data Sheet onsite. • The Contractor will provide a spill kit for minor spills and drip trays for equipment leakages. • Workers handling hazardous substances will be properly trained and equipped with appropriate PPE. • Fuel storage tanks shall be on smooth and impermeable surfaces. • Remove from site all pollution containment structures such as temporary sanitary infrastructure. • Take care to avoid leaks, overflows and spills and dispose of any waste in the approved manner. • The following preventative measures should be undertaken: ➢ All sensitive sites should be identified such as rivers and wetlands and procedures developed to ensure proper handling of oil/fuel or chemical	• Observation • Incident Report	• Contractor • ECO • PC • Eskom EO	• Continuous throughout the construction phase

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			spillages in these areas. • It should be ensured that all employees are aware of the procedure to be followed in case of accidental spills and leaks.			
• Emergency Planning and Response	• To minimise the destruction of properties and habitats • To prevent avoidable fires and spillages	• Destruction of properties and injuries of people due to fire. •	• The Contractor shall develop plans for action (site specific method statements), that are in line with Eskom's existing Standard Operating Procedures, to be taken in the cases of emergencies specifying the emergency procedures for: ➢ fire ➢ accidental leaks and spillages ➢ medical emergencies • An accident register should be compiled every month. • Emergency contact numbers should be displayed in prominent places which should include the Police, Fire Department and Ambulance Services. • A designated emergency meeting point should be established, and all employees should be informed of the locality and procedures. • It should be ensured that there is basic and adequate fire-fighting equipment available on site. • The Contractor will ensure that there are 'No smoking' areas marked, including the workshop and fuel storage	• Emergency plans Emergency meeting point	• Contractor • PC • Eskom EO • ECO •	• Pre-site establishment • Construction

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
			areas. • The Contractor will ensure that all employees are aware of procedures to be followed in the event of fire.			
Monitoring and evaluation • Non-conformance management	• To manage non-conformance	• Non-compliance with the conditions of the EMr and EA	• The non-conformance report will be updated on completion of the corrective measures indicated on the finding sheet. The report will indicate that the remediation measures have been implemented timeously as well as the effectiveness of the remediation measure in order for the non-conformance to be closed-out at the satisfaction of the Eskom EO and ECO. • All project stakeholders will be allowed to report non-conformances to Eskom EO, PC and ECO. • Non-conformance reports will describe, in detail, the cause, nature and effects of any environmental non-conformance by the Contractor.	• Non-conformance Register or Reports •	• Contractor • ECO • PC • Eskom EO	• Ongoing

Table 4.2-4: Rehabilitation

Activity/Aspect /Environmental elements	Outcomes	Impacts	Mitigation/Management actions	Monitoring & Reporting	Responsibility	Frequency/ Time Periods
• Removal of structures	• To ensure that the rehabilitation of indigenous vegetation is as close to the original state as possible.	• Habitat destruction • Biodiversity loss	• The removal of all construction facilities and materials from the construction camp will be required and rehabilitation will have to be carried out, including the removal of the following: ➢ Removal of construction site and/or camp. ➢ Clear and completely remove from site all construction plant, equipment, storage containers, temporary. ➢ fencing, temporary services, fixtures, concrete and compact earth platforms, fuel storage tanks and bund areas, chemical toilets and any other temporary works. ➢ Materials that will not be used again will be removed by the Contractor.	• Observations • Pictorial Records	• Contractor • Eskom EO • ECO • PC	• Continuous during Rehabilitation
• Inert Waste and Rubble	• To ensure that rubble and inert waste is removed onsite	• Soil and water pollution	• Clear site of all inert waste and rubble, including surplus rock, foundations, batching plant aggregate and soil crete. After the material has been removed, the site shall be re-instated and rehabilitated. • Remove from site all domestic waste and dispose of in the approved manner at a registered waste disposal site. Proof of this will be provided by the Contractor.	• Observations • Pictorial Records • Disposal Certificates	• Contractor • Eskom EO • ECO • PC	• Continuous during Rehabilitation

4.3 Applicable Standards

In addition, compliance with prescribed environmental management standards or practices as well as applicable provisions of the Act regarding the proposed activities, as prescribed in Section f (ii) and (iii) of Appendix 4 of NEMA Regulations are summarised below.

The management outcomes provided in the Table 4.2-1 to Table 4.2-4 were designed with an aim of ensuring compliance with these standards.

4.3.1 The Constitution of South Africa (Act No 108 of 1996)

In accordance with the Constitution, the Government of South Africa has separate national, provincial and local levels that are mutually dependent and interconnected. All three areas of government have legislative and administrative functions and thus have responsibility for the management of the environment.

The Bill of Rights (Chapter 2 of the Constitution) is a fundamental cornerstone of environmental law in South Africa and makes provisions for environmental issues.

Section 24 of the Bill of Rights states that:

"Everyone has the right -

a. to an environment that is not harmful to their health or well-being; and
b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that -
    i.) prevent pollution and ecological degradation;
    ii.) promote conservation; and
    iii.) secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development".

    Therefore, all the matters pertaining to site management must be done with sensitivity and avoid infringing on people's constitutional rights.

4.3.2 Common Law

South Africa's common law is composed of the foundational Roman-Dutch legal principles as modified and interpreted by judicial precedent.

4.3.3 National Legislation pertaining to this Project

Below are all the standards which are applicable to the elements and aspects presented in Table 1.11. The implementers of the EMPR mus ensure that for each element, the applicable standards are visited, reviewed and compliance maters are identified and compliance facilitated. An aspects and legal register must be developed for the site.

The statutes which must be complied with are presented below.

- National Environmental Management Act (No. 107 of 1998) (NEMA)
- National Environmental Management: Biodiversity Act (No. 10 of 2004) (NEM: BA)
- National Environmental Management: Protected Areas Act (No. 57 of 2003) (NEM: PAA)
- National Environmental Management: Air Quality Act (No. 39 of 2004) (NEM: AQA)
- National Environmental Management: Waste Act (No. 59 of 2008) (NEM: WA)
- National Water Act (No. 36 of 1998) (NWA)
- National Heritage Resources Act (No. 25 of 1999) (NHRA)
- National Road Traffic Act (No. 93 of 1996)
- Occupational Health and Safety Act (No. 85 of 1993) (OHSA)
- Hazardous Substances Act (No. 15 of 1973) (HSA)
- Noise Control Regulations in terms of the Environmental Conservation, 1989 (No. 73 of 1989) (Noise Control Regulations)
- Basic Conditions of Employment Act (No 75 of 1997)
- Promotion of Administrative Justice Act (No 3 of 2000)
- Municipal Structures Act (No 117 of 1998)
- Traditional Leadership and Governance Framework Amendment Act (No 23 of 2009)
- Local Government: Municipal Systems Act (No 32 of 2000)

4.3.3.1 National Environmental Management Act (No 107 of 1998)

The NEMA objectives include co-operative environmental governance, sustainable development, environmental justice and the "polluter pays" principle. NEMA Regulations incorporate requirements for environmental impact assessments which are approved or authorised in the form of Environmental Authorisations (EAs).

4.3.3.2 Environmental Impact Assessment Regulations, 2014, as amended

The Environmental Impact Assessment (EIA) Regulations of 2014, as amended are also published under NEMA. Section 19 of these EIA regulations require the applicant to submit, within 90 days after receipt of the application by the competent authority, a basic assessment and EMPr.

Appendix 4 of the Regulations stipulates the required content of an EMPr. Table 1.1-1 indicates these requirements and where it can be found within this EMPr.

4.3.3.3 National Environmental Management: Biodiversity Act (No 10 of 2004)

Permit applications shall be made to the relevant authority for the removal of any Red Data or Protected Species found in the proposed alignment and construction areas. These permit applications will be made in conjunction with requirements of the National Forests Act (No 84 of 1998). The identified protected species are listed later in the report.

The Biodiversity Act also holds Mogalakwena Local Municipality responsible for the eradication of any alien or invasive species which establish on site as a result of the construction activities using methods which are appropriate to the species concerned and the environment in which it occurs.

4.3.3.4 National Environmental Management: Protected Areas Act (No. 57 of 2003)

The purpose of this Act is to provide for the protection, conservation and management of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.

4.3.3.5 National Environmental Management: Air Quality Act (No. 39 of 2004)

The object of the Act is to protect the environment by providing reasonable measures for the protection and enhancement of the quality of air and to prevent pollution of air and ecological degradation.

Section 32 of The National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004) deals with dust control measures in respect of dust control. Whilst none are promulgated at present, it provides that the Minister or MEC may prescribe measures for the control of dust in specified places or areas, either in general or by specified machinery or in specified instances, the steps to be taken to prevent nuisance by dust or other measures aimed at the control of dust.

4.3.3.6 National Environmental Management: Waste Act (No 59 of 2008)

All wastes, both general and hazardous, generated during the construction of the Project and associated infrastructure will be disposed of at an appropriately licensed waste disposal site. Copies of the permits or licences will be obtained and kept on site before the commencement of construction.

4.3.3.7 National Water Act (No 36 of 1998)

This Act provides for fundamental reform of law relating to water resources and use. The preamble to the Act recognizes that the water resource management is to achieve National benefit of all users and that the protection of the quality of water resources is necessary to ensure sustainability of the nation's water resources in the interests of all water users.

4.3.3.8 National Heritage Resources Act (No 25 of 1999)

According to the NHRA archaeological and destruction permits are required for the removal of a structure or element of cultural significance.

4.3.3.9 National Road Traffic Act (No 93 of 1996)

Relevant provisions of the Road Traffic Act will be complied with pertaining to the correct licensing for all drivers on site as well as the ensuring that all vehicle and plant is road worthy.

4.3.3.10 Hazardous Substances Act (No 15 of 1973)

Hazardous substances will be stored and handled in accordance with the appropriate legislation and standards, which include the Hazardous Substances Act, the Occupation Health and Safety Act, relevant associated Regulations and applicable SANS and internal standards. The Implementer will ensure that all relevant Material Safety Data Sheets are present on site at all times.

4.3.3.11 Noise Control Regulations in terms of the Environmental Conservation, 1989 (No. 73 of 1989)

The assessment of impacts relating to noise pollution management and control, where appropriate, will form part of the EMPr. Applicable laws regarding noise management and control refer to the National Noise Control Regulations issued in terms of the Environment Conservation, 1989 (Act 73 of 1989).

4.3.3.12 Occupational Health and Safety Act (No 85 of 1993)

All provisions of the Occupational Health and Safety Act will be complied with. The Act will not only provide for the health and safety of the persons connected to the construction but also the persons in the surrounding areas which are affected by the construction.

4.3.3.13 Basic Conditions of Employment Act (No 75 of 1997)

The Basic Conditions of Employment Act details employment conditions applies to all workers and employers and will be obeyed even if other agreements are different. It includes specifications regarding working time, leave, job information and payment, and termination of employment. The

proponent and all its contractors will adhere to the requirements of this Act in the recruitment and employment of labour for construction.

4.3.3.14 World Bank's International Finance Corporation Performance Standards

To demonstrate commitments with operating within the global Environmental and Social Governance (ESG) framework and international standards, the IFC standards were applied as presented in Table 4.3-14.

4.3.3.15 Standard Eskom Policies

Construction activities will comply with a number of Eskom Standard Policies in addition to this EMPr, the environmental authorisation (EA) and all the approved licences. It is the responsibility of all parties involved in the implementation of the EMPr to ensure that the most recent updated Eskom policies/documents are used.

Table 4.3-14: Applicable IFC standards

IFC Standard	How it was (or will be) applied
1. Assessment and Management of Environmental and Social Risks and Impacts	i. Effective community engagement through disclosure of project-related information ii. Proper management of environmental and social impacts through the EMPr iii. The proponent is capable of financing the costs of environmental and social risks.
2. Labour and Working Conditions.	i. The planning phase is being conducted with communication with relevant authorities to meet their requirements. ii. The construction phase will be done following the relevant labour laws and ethical practices. iii. For casual labour, preference shall be given to locals
3. Resource Efficiency and Pollution Prevention	i. Through the use of the EMPr, measures will be put in place to avoid and reduce pollution during the construction phase ii. The construction phase will involve the construction of a powerline and the decommissioning of the existing powerline, and as such heavy machinery might be used for extended periods of time iii. Mention the consideration of dust regulations (cite what they are and also the Air quality Act
4. Community Health, Safety, and Security	i. During the construction phase, the area will be fenced and signs erected to protect the public from occupational risks ii. The planning and construction phases will be done with authorisations from competent authorities. iii. Recommendation of the biodiversity and social studies will be implemented (Volume 4)
5. Biodiversity Conservation and Sustainable Management of Living Natural Resources	i. The proposed project areas fall within areas listed as a biodiversity important area in the Limpopo Conservation Plan documents, with sections of the farm Gilead 729 LR included as an Ecological Support (ESA). Project activities will be done with the knowledge and recommendations made by the Biodiversity Specialist.

5. ENVIRONMENTAL AWARENESS PLAN

All site staff should be made aware of the environmental management requirements for the project. This should be achieved through training as part of their induction. Details regarding environmental awareness on site is detailed on Table 4.2-2.

6. MONITORING AND REPORTING

6.1 Introduction

The purpose of monitoring and reporting is to ensure that implementation in the design, construction and rehabilitation phases of the life cycle of the project is accomplished in such a manner that the organisation's environmental policy, objectives and targets are met as outlined in this document. Monitoring and Reporting mechanisms are also covered in Section 4 of this EMPr.

Eskom has resolved to focus on environmental issues, with emphasis on attaining a high level of environmental conscience and as a responsible business take the lead in its field. The Resort recognises that every being has the right to an environment that is not harmful to their health or wellbeing and that the nature of its activities could impact on the environment.

The philosophy that will be followed is based on the Deming Cycle, namely, Plan, Do Check, Act, that allows for continual improvement of all activities on site. The objectives are:

- Identify possible impacts that may emanate from its activities;
- Implement mitigation measures to prevent, reduce and minimize the impacts;
- Create an awareness among all employees;
- Incorporate environmental issues into the company's business strategy.

6.1.1 Plan

The planning is intended to ensure that all activities of the project are carried out in a methodical fashion that allows for a concise intervention that is in concurrent with environmental management principles.

6.1.2 Do

The implementation will be through the development of Management and Mitigation Plans for each significant construction activity and its aspects that have an impact on the environment.

6.1.3 Check

This EMPr can only be effectively implemented if it is accompanied by monitoring, auditing and reporting on compliance with the management and mitigation plans. The monitoring programme will be designed in a manner that ensures that all the components of the Project that have the potential to impact the environment are accurately monitored.

6.1.4 Act

Without acting on non-compliances and implementing corrective measures all actions on site will be fruitless. The Project will be subject to both internal monitoring, and external auditing to ensure compliance to relevant legislation and standards (including this EMPr).

The following basic elements will be included in establishing and maintaining procedures for investigating and correcting non-conformance:

Identifying the cause of the non-conformance
Identifying and implementing the necessary corrective action. Implementing or modifying controls necessary to avoid repetition of the non- conformance.
Recording any changes in written procedures resulting from the corrective action.

6.2 Environmental Control Documents

6.2.1 Health and safety incidents and/or near misses reporting

The following actions will be followed / addressed during incidents, accidents and near misses

- All accidents, incidents and near misses will be reported to the Eskom Project Coordinator, Eskom EO and ECO
- Accidents will be addressed in terms of the Health and Safety Plan. If injured, workers will be taken to an appropriate health care facility for treatment. The accident will be documented, including the nature and cause of the accident and the subsequent measures to prevent a similar accident from recurring.
- The corrective actions will be discussed during the next day's toolbox discussion.
- The Contractor will forward the incident report to the Employer or its representative.
- The incident report will be kept on file and will be available for review during audits.

6.2.2 Environmental Monitoring and Community Complaints Records

Records are evidence of the ongoing activities of the operation. Typical records that will be kept include:

- Environmental Incidence Register
- Environmental Incident Report
- Hazardous Waste Disposal Register
- Method Statement Proforma
- Hazardous Substances Register
- Community / Guests / Staff Complaints Register
- Environmental File
- Relevant Letters of Appointment
- Environmental Compliance Report
- Environmental Induction

The environmental records will be legible, identifiable, and traceable to the activity involved. Records will be maintained to demonstrate conformance to all requirements.

6.3 Environmental Monitoring

The main objective of the monitoring programme with respect to project activities is as follows:

- To establish trends
- To ensure compliance with regulatory authorities' requirements
- To asses effectiveness of the proposed mitigation measures
- To detect environmental contamination as early as possible

In order to fulfil the above-mentioned objectives, the monitoring programme will cover issues related to the following environmental components:

- Public health – noise and dust
- Protected fauna and flora species – search and rescue and destruction
- Protection of paleontological resources

The details of the aspects which will be monitored as are presented under Tables 4.1-1 to 4.1-4. This tables present:

- the method of monitoring the implementation of the impact management actions.
- the frequency of monitoring the implementation of the impact management actions.
- roles and responsibilities for the implementation of the impact management actions.

- the time periods within which the impact management actions.
- the mechanism for monitoring compliance with the impact management actions.

7. CONCLUSION

The use of this Environmental Management Programme will ensure that the project complies with legislative requirements. This EMPr, as an integrated environmental management plan tool, assists with the analysis, mitigation, monitoring and reporting of processes and impacts which will enable a proactive and holistic approach. Different stakeholders involved in the various aspects of this project are considered and empowered to work together in a synergistic way to fulfil the objectives of the relocation exercise. Various specialist studies supported and enabled the consolidation of this tool hence its value in project implementation is crucial.

APPENDIX 1.1-1: CURRICULUM VITAE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

CURRICULUM VITAE OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Name	:	Babalwa Atalanta Fatyi
Profession	:	Professional Scientist
Specific Function	:	Project Leader/ EAP
Experience	:	20 years
Nationality	:	South African
BI & Male/Female Status	:	Black Female
Professional Qualifications	:	MSc [Cum Laude] University of Witwatersrand 1999 BSc Honours (Botany) University of Witwatersrand 1997 Bachelor of Science University of Witwatersrand 1996
Professional Membership	:	SACNASP - Professional Scientist – 1993 (Registration No. 400123/01). Registered Environmental Auditor: (IEMA), Lincoln, UK (Registration No. 0025153). Associate Member: Land Rehabilitation Society of Southern Africa (LaRSSA) (Registration No. 91430). International Association for Impact Assessment South Africa (IAIAsa): Registered Member and Mentor Institute of Waste Management of Southern Africa (IWMSA): Member (Registration No.10105011)

LANGUAGE	SPEAK	READ	WRITE
English	Y	Y	Y
Xhosa	Y	Y	Y
Zulu	Y	Y	N

SYNOPSIS

Babalwa is an elite environmental consultant with over 20 years' experience carrying out Basic Assessments and Water Use Licence Applications for different clients including Eskom and working with government departments such as the Department for Environmental Affairs. Her qualifications, experience with similar work and an impeccable professional record of working on Eskom projects and delivering exceptional results in time, her involvement this project would be the project leader. In addition to that, she has led the Transhex Reuning Telecommunications Tower Project within the Ritchtersveld National Park.

Experience – Project Management, Basic Assessment, Water Use Licence Applications

With over 20 years' experience conducting, coordinating and leading Environmental Impact Assessments and providing environmental solutions to corporates, NGOs, government departments and clients from other industry sectors such as construction and mining. She has extensive experience managing environmental issues and licence applications for large scale construction projects. She is a South African female business owner and entrepreneur who is determined to be a voice of consciousness, an instrument of change in the manner in which development and environmental matters are handled. Babalwa has worked for a consulting company, SRK Consulting from 1999 to 2002. She worked for a mining company Transhex (Pty) Ltd from 2002 to 2005 (and later as an independent consultant to-date), responsible for overseeing the company's compliance with its environmental obligations and was active in promoting environmental consciousness through all the different mining development phases. Her work experience gave her an insight with respect to sector specific environmental requirements ranging from authorizations, implementation and monitoring and auditing.

She led, project managed and participated in over 25 environmental impact assessments and more than 20 Basic Assessment Reports (BARs) and compiled more than 25 Environmental Management Plans (EMPs) and programmes in the construction industry, power sector, mining and other industries. Babalwa has developed site specific construction Environmental Management Programmes (EMPrs) for various sites such as railway sidings, linear activities such as power lines, and roads within mining areas and pipelines. She has experience managing projects of all sizes for construction activities in nature reserves and protected areas. Also, she developed more than 40 Rehabilitation Plans, Closure plans and associated Performance Assessment Audits for several mining companies. During the compilation of environmental studies, Babalwa applied environmental laws and regulations such as National Environmental Management Act (Act No. 107 of 1998); National Environmental Management: Biodiversity Act (Act No. 10 of 2004); National Environmental Management: Waste Act (Act No. 59 of 2008); National Environmental Management: Protected Areas Act (Act No. 57 of 2003) as guidelines.

As a qualified EAP, Babalwa has been instrumental in the coordination of the Public Participation Process either as a lead stakeholder engagement specialist and or as an overseer of the process. Partaking her duties as Public participation leader, her duties included engaging with Interested and Affected Parties (IAPs) so as to ensure that their issues and concerns regarding the proposed project activities are adequately captured, addressed, included in the Environmental Report. In addition, Babalwa has experience with working and engaging specialists since a number or environmental reports she compiled to date required that she engage with specialist. When engaging with specialists, her duties include designing of terms of references (ToRs) that are project specific and ensure that specialist studies reports findings and recommendations are included as part of the EIA report to be submitted to the Competent Authority for environmental authorisation.

In addition, she has practical knowledge of water use licence application where she has been involved in conducting legal analysis, ensuring that the requirements of all legislations and applicable policies and standards are considered during the application of the Water Use Licence as well as the development of other relevant documents and reports. In addition, was responsible for the compilation of associated documents such as Integrated Water and Waste Management Plans (IWMMPs), Risk Assessment Reports, River Management Plans and submitting all the reports to the regulatory. During the process, was also involved in the arrangement of pre-consultation meetings with the relevant regulatory authorities, conducting follow up meetings and well as ensuring continual engagement until licence granting. Furthermore, stakeholder engagement was undertaken as part of the Water Use Licence application as set out within the regulations. In addition, was a project leader responsible for overseeing and managing actions by the team throughout the duration of the project as well as Management of the team outputs.

Babalwa Fatyi has experience directing and managing environmental sustainability projects current across various industries and sectors, including: environmental management programmes and associated stakeholder engagements and impact evaluation and development of environmental management plan in support of environmental authorisation applications. She has a broad range of experience in leading the implementation of environmental management plans on sites through development of implementation plans with clear set objectives and structures, roles and responsibilities, design of performance monitoring plans and designing communication and risk management plans throughout the project implementation phases. She is also experienced in conducting Performance assessment audits as well as developing and maintaining integrated Safety, Health and Quality management systems.

Holding the position of Director since 2005, Babalwa has been executing managerial duties working with a team of employees whom she directs, manages, plans, oversees their activities and operations, motivate and provide management programs as part of team building. In executing her duties, Babalwa develops operational components and provide overall direction for each project, manages managers and all employees ensuring that the set targets, policies and goals are implemented and achieved, continually monitor operations and assessments so as to provide optimal environmental services. For the past 14years as a Director, Babalwa has managed to deliver strong operational performance meeting the standards required by industries as well as regulatory authorities.

In addition, Babalwa is a qualified and registered Lead Auditor, who has undertaken several Performance Assessment Audits as a lead auditor or as part of a team, and this has strengthened her capabilities to work and successfully yield positive results working as part of a team. Over the years, Babalwa has used legislations and regulations such as National Environmental Management: Air Quality Act (Act No. 39 of 2004); National Water Act (Act No. 36 of 1998) and many other applicable legislations and regulations as a measure for compliance. Babalwa has managed to develop operational control measures that aim at meeting all the regulatory measures and company policies ultimately achieving compliance. Furthermore, Babalwa has developed audit Terms of References, Audit Plans and Schedule clearly setting the objectives of the audit, Audit checklist for all the audits she conducted, Also, she has been able to advice and ensure that corrective actions are taken whenever necessary as well as development of legal registers so as to ensure that the client complies with all the relevant statutes. This experience will enable Babalwa to ensure that all applicable permits will be applied for during the environmental authorisation application process.

To incorporate latest developments within the regulatory realm, Babalwa has attended several workshops so that she has knowledge regarding any statutory changes. For the period from 2010 to 2019 Babalwa has attended workshops that include Strategic Climate Change Legal Briefing: Legal and Business Implications of COP15 and the Copenhagen Accord; Legal Training Workshop: Water Law in South Africa; National Environmental Management: Integrated Coastal Management Act Legal Training Workshop; National Environmental Management: Air Quality Workshop; Contaminated Land Legal workshop; Environmental Law update workshop; Environmental Impact Assessment (EIA) 2014 Legal Regime workshop; Mine Closure and Recent Case Law Development Workshop; and the Carbon Tax Half Day Workshop among other workshops.

Qualifications & Professional Registration – Masters, SACNASP, IAIAsa

Babalwa is a registered Environmental Assessment Practitioner (EAP) and Professional Natural Scientist (400123/01). Having graduated with BSc degree Majoring in Zoology and Botany in 1997 at the University of Witwatersrand, she went on to pursue and complete her Masters of Science at the same university, graduating cum laude. She is a Registered Environmental Auditor with the Institute of Environmental Management in Lincoln, UK (Registration No. 0025153) and an Associate Member with the Land Rehabilitation Society of Southern Africa (LaRSSA) (Registration No. 91430). She is also a registered member and mentor with the International Association for Impact Assessment South Africa (IAIAsa).

Over the years, she has pursued and completed several courses such as the Tyre Industry in the Republic of South Africa; Management Plans that was hosted by the Department of Environmental Affairs in 2018, Environmental Impact Assessment (EIA) 2014 Legal Regime Workshop hosted by Imbewu Sustainability Legal Specialists in 2014 and the IAIAsa Annual Conference: 22nd Annual National Conference focusing on inspiring integrated environmental management; crafting innovative solutions to persistent environmental and social problems in 2017.

Publications, Personal Work and Social Responsibility – journals, poetry, guest speeches

Babalwa Fatyi's contribution to scientific journals demonstrate her leadership in the environmental sector as her publications are referenced across the world. Her co-authored journals appear the South African Journal of

Botany and the Journal of Arid Environments. In 2001, a publication which she co-authored was presented at the Chamber of Mines Conference on Environmentally Responsible Mining. In 2014 she published *Greetings from my core*, a poetry book about acknowledging our role in the sustainability agenda through all the areas of our lives.

As a leader whose expertise is valued and beneficial to both society and business community, she is often engaged as keynote or guest speaker on different national occasions. In 2018 at the International Association for Impact Assessment South Africa and IAP2 Conference, she rendered a presentation themed: "Dynamic and Rapid Changing Nature of Public Consultation and Engagement by Civil Society within the Field of Environmental Management". At the same conference she also collaborated with Dim-Dep faces for environmental success doing a stage act and poetic narration of the "Value of protection of our natural resources" as part of welcome dinner for international delegates. At the IAIA18 Conference (2018a) she was a guest speaker on the topic of "Indigenous Knowledge: A Poetic Narrative". Where the highlight was on information and knowledge, through the opportunity of honouring our indigenous knowledge and incorporating it into the sustainability agenda.

In 2018, she was also a guest speaker at the South African Council for Natural Scientific Professions (SACNASP) where she educated, registered and dispatched "For such a times as these", the natural Scientist Tale of heeding the Global trumpet call towards sustainable development/ green economy.

At International Association for Impact Assessment South Africa's Full Day Conference, she performed a poetic narrative "Indigenous knowledge" where the highlight was on information and knowledge through the opportunity of honouring our indigenous knowledge and incorporating it into the sustainability agenda.

EXPERTISE

- Project management including monitoring
- Basic Assessments and Water Use Licence Application
- Environmental Authorisations applications
- Construction sector environmental management, legislation and international standards
- Environmental legislation
- Construction environmental and safety risk management
- Management of specialist investigations and outputs
- Development of roles and resources and goals and objectives for the developmental processes
- Good understanding of stakeholder dynamics and how to manage complicated situations between stakeholders
- Design of public/stakeholder participation frameworks and facilitation as well as ensuring that there is continual engagement with all stakeholders, including the regulatory authorities
- Design and development of companies' environmental management system including input into the corporate charter and company environmental policy
- Development of operations' risk and impact analysis framework and protocols
- Development of risk assessment criteria and leading the process of development of risk controls and continual risk rating
- Sustainability reporting for input into the companies' sustainability report for legitimacy governance and stakeholder inclusivity

EXAMPLES OF PROJECTS CARRIED OUT

- **West Coast Resources (Pty) Ltd-** Amendment of an Environmental Management Programme, coupled with Environmental Impact Assessment and stakeholder engagement strategy development and facilitation, in support of a mining right held by West Coast Resources (WCR), over the Namaqualand Mines, in terms of the National Environmental Management Act (Act No. 107 of 1998) and Mineral and Petroleum Resources Development Act, (Act No. 28 of 2002), within the Administrative District of Namaqualand, Northern Cape (2013 – 2016).
- **Sound Mining Solution (Pty) Ltd:** EIA in support of the mining right for Coal prospecting proposed development in the Farm Vetleegte 304 LQ, situated in Lephalale municipality, District of Waterberg, Limpopo province (2018).
- **Aplorox (Pty) Ltd:** EIA for Forfar Railway Siding located at Portion 1 of the Farm Van Dyksput 214 IR, Bronkhorstspruit, Kungwini District Municipality, Gauteng Province (2018).
- **Eskom Holdings Soc Ltd:** Subcontracted by Nako Illiso (Pty) Ltd to undertake Public Involvement in respect to a proposed Eskom's Donatello Gas Insulated Substation within Sandton, Gauteng Province (2018).
- **Translogix (Pty) Ltd:** Environmental Management Programme for a coal handling railway siding located on Portion 237R of the farm Rietkol within the Victor Khanye Local Municipality, Nkangala District Municipality, Mpumalanga (2018).
- **Transnet SOC Ltd:** Subcontracted by Hydroscience (Pty) Ltd to conduct Stakeholder Engagement Process regarding the decommissioning of a pipeline from Johannesburg to Durban (2018-2019).
- **Vuka Africa Consulting Engineers and Project Managers (Pty) Ltd**- Basic Assessment Process and associated stakeholder engagement for the construction of the proposed Bokamoso Sewage Outfall Pipeline (current), North West Province (2012-2013).
- **SALP Constructions (Pty) Ltd-** Application of Environmental Authorisation, Basic Assessment Report with associated stakeholder engagement and facilitation, for the proposed development at Masebe Nature Reserve with the Mogalakwane Local Municipality, Limpopo (2014 – 2015).
- **Athi River Mining South Africa (Pty) Ltd:** Environmental Management Programme and stakeholder engagement and facilitation is support of a mining right in terms of Section 39 and of Regulation 50 and 51 of Mineral and Petroleum Resource Development Act, 2002 (Act No.28 of 2002), Mahikeng, North West Province. (2012-2013).
- **Enermin Africa (Pty) Ltd:** Environmental Management Programme and associate environmental studies and stakeholder engagement an facilitation, is support of a mining right in terms of Section 39 and of Regulation 50 and 51 of Mineral and Petroleum Resource Development Act, 2002 (Act No.28 of 2002), Mahikeng, North West Province. (2012-2013).
- **Trans Hex Operation (Pty) Ltd**: Development of environmental management plans and environmental performance audits for marine and land operations (2005-2012 (on going). Projects include:
  - Environmental management programme updates, audit and closure plan for Brazil Farm.
  - Environmental management programme updates for Hondeklip Bay Operation.
  - Environmental management plans for more than 30 prospecting rights application in the Limpopo, Gauteng, Northwest and Northern Cape.
  - Closure plans for more than twenty prospecting rights.

- **Environmental Resource Management (SA):** Coordination and management of an environmental impact statement for a Burkina Faso Zinc Mine (2005).

- **Mineral Capital Assets:** Development of prospecting environmental management plans for farms on the Northwest Province. (2005).
- **Department of Environmental Affairs and Tourism:** Fourth Country Report for United Nations Convention to Combat Desertification, including stakeholder engagement and facilitation of regional workshops (2008).
- **Wesizwe:** Development of sustainability framework including policies, standards and guidelines (2008-2009).
- **Etruscan Resources Inc:** Environmental Management Programme and associated stakeholder engagement and facilitation of workshops and open days, in support of a mining right application (2007)
- **Trans Hex Operations (Pty) Ltd:** Closure plans and associated performances assessment audits and financial provision calculations for prospecting farms. (200-current).
- **Unimining Joint Venture:** Implementation of environmental measures during rehabilitation of an asbestos Mine – Heningvlei (2006-2007).
- **Department of Minerals and Energy-Council for Scientific and Industrial Research Project for abandoned Mines:** Myezo subcontracted by CSIR for development of Environmental Best Practice guidelines for Granite Mines in the North –West Province. (2005).
- **Alexkor SOC Ltd:** Alexkor's Five Year Implementation Land Rehabilitation Plan at its Alexander Bay Mine in Northern Cape (2014).
- **Trans Hex Operations (Pty) Ltd:** Application for Closure Certificates in terms of Section 43 (4) of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), were prepared for various prospecting activities undertaken in the following farms in Northern Cape by Trans Hex. (10 Closure Plans were prepared) (2009).

APPENDIX 2.2.1: DFFE Screening Report

SCREENING REPORT FOR AN ENVIRONMENTAL AUTHORIZATION AS REQUIRED BY THE 2014 EIA REGULATIONS – PROPOSED SITE ENVIRONMENTAL SENSITIVITY

EIA Reference number: Eskom-Gilead-Basic Assessment

Project name: Gilead Powerline Deviation Project

Project title: Gilead Powerline Deviation

Date screening report generated: 12/02/2021 14:54:45

Applicant: Eskom Holding SOC Limited

Compiler: Myezo Environmental Management Services (Pty) Ltd.

Compiler signature:

.....

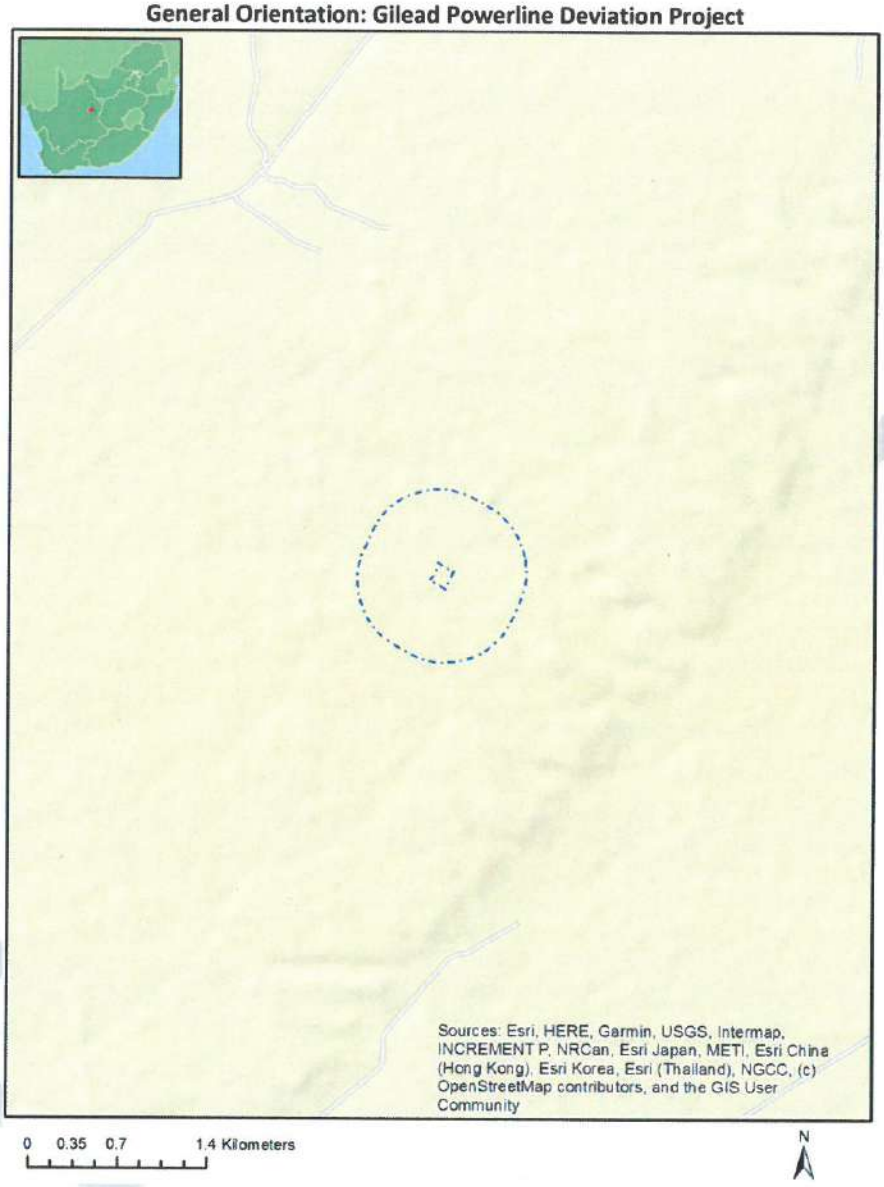
Application Category: Utilities Infrastructure|Electricity|Distribution and Transmission|Powerline

Table of Contents

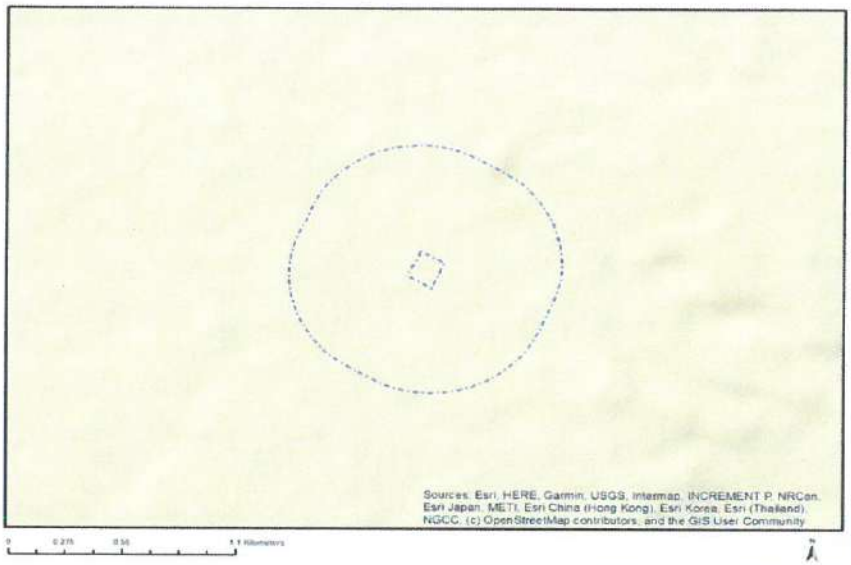
Proposed Project Location

Orientation map 1: General location

General Orientation: Gilead Powerline Deviation Project



Map of proposed site and relevant area(s)



Cadastral details of the proposed site

Property details:

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	ANNEX LINKSFONTEIN	423	0	28°50'32.95S	23°39'48.87E	Farm
2	ANNEX LINKSFONTEIN	423	0	28°51'12.09S	23°39'16.62E	Farm Portion

Development footprint[1] vertices:
No development footprint(s) specified.

Wind and Solar developments with an approved Environmental Authorisation or applications under consideration within 30 km of the proposed area

No	EIA Reference No	Classification	Status of application	Distance from proposed area (km)
1	12/12/20/2637	Solar PV	Approved	21.7
2	12/12/20/2622	Solar PV	Approved	24.2
3	12/12/20/1941	Solar PV	Approved	21.7
4	12/12/20/2643	Solar PV	Approved	21.7

[1] "development footprint", means the area within the site on which the development will take place and incudes all ancillary developments for example roads, power lines, boundary walls, paving etc. which require vegetation clearance or which will be disturbed and for which the application has been submitted.

Environmental Management Frameworks relevant to the application

No intersections with EMF areas found.

Environmental screening results and assessment outcomes

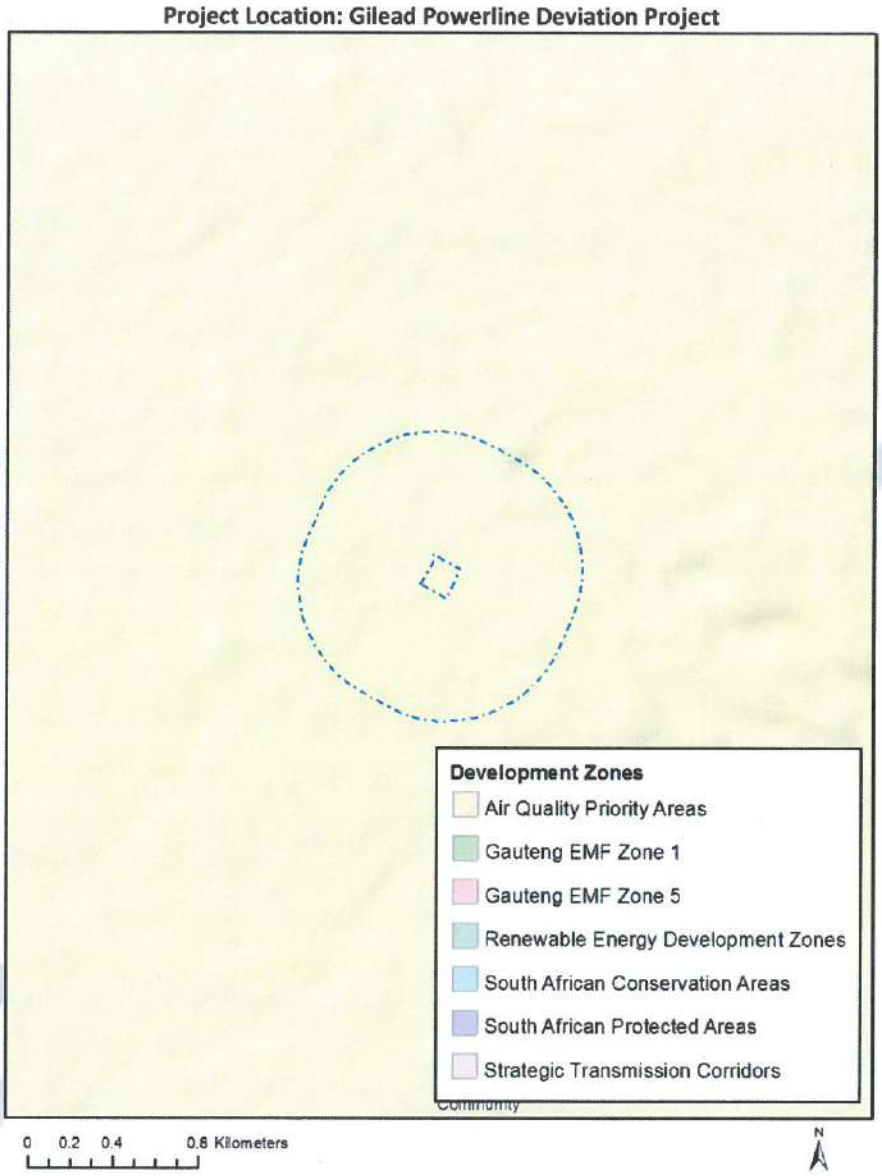
The following sections contain a summary of any development incentives, restrictions, exclusions or prohibitions that apply to the proposed development site as well as the most environmental sensitive features on the site based on the site sensitivity screening results for the application classification that was selected. The application classification selected for this report is: **Utilities Infrastructure|Electricity|Distribution and Transmission|Powerline**.

Relevant development incentives, restrictions, exclusions or prohibitions

The following development incentives, restrictions, exclusions or prohibitions and their implications that apply to this site are indicated below.

No intersection with any development zones found.

Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones



Proposed Development Area Environmental Sensitivity

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

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			

Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

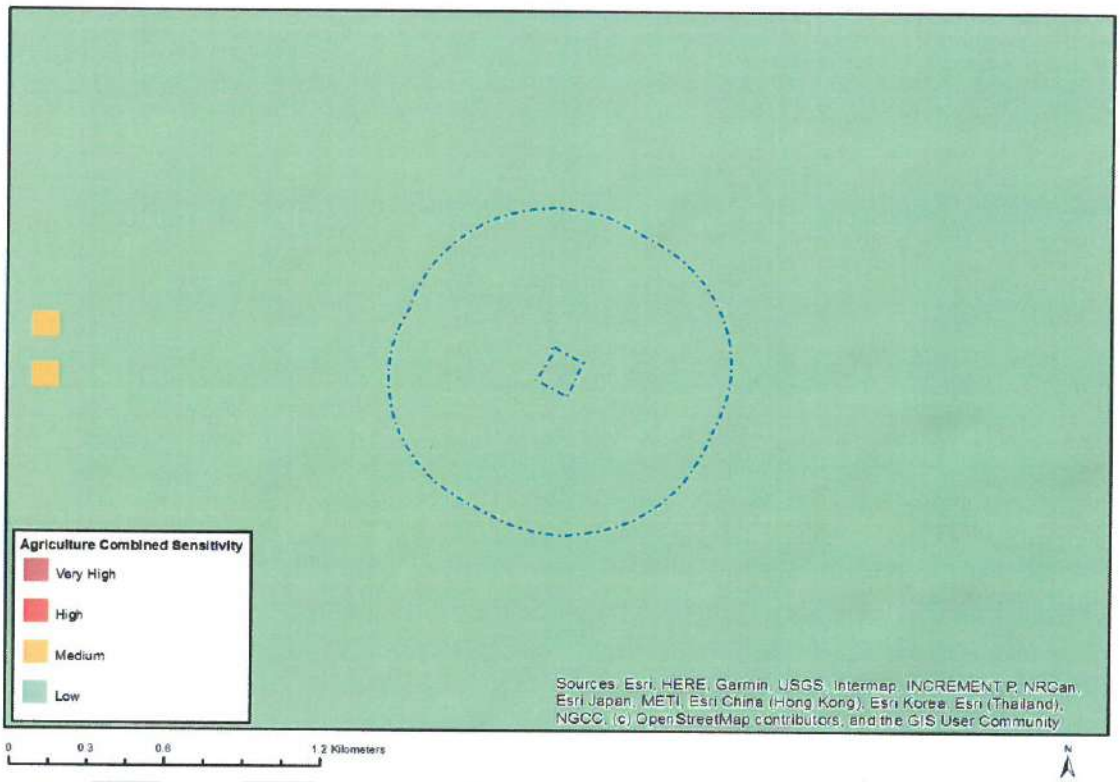
No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf
2	Landscape/Visual Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
3	Archaeological and Cultural Heritage Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
4	Palaeontology Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
5	Terrestrial Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf
6	Aquatic Biodiversity Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf

7	Avian Impact Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Avifauna_Assessment_Protocols.pdf
8	Civil Aviation Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Civil_Aviation_Installations_Assessment_Protocols.pdf
9	RFI Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
10	Geotechnical Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf
11	Plant Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf
12	Animal Species Assessment	https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf

Results of the environmental sensitivity of the proposed area.

The following section represents the results of the screening for environmental sensitivity of the proposed site for relevant environmental themes associated with the project classification. It is the duty of the EAP to ensure that the environmental themes provided by the screening tool are comprehensive and complete for the project. Refer to the disclaimer.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY

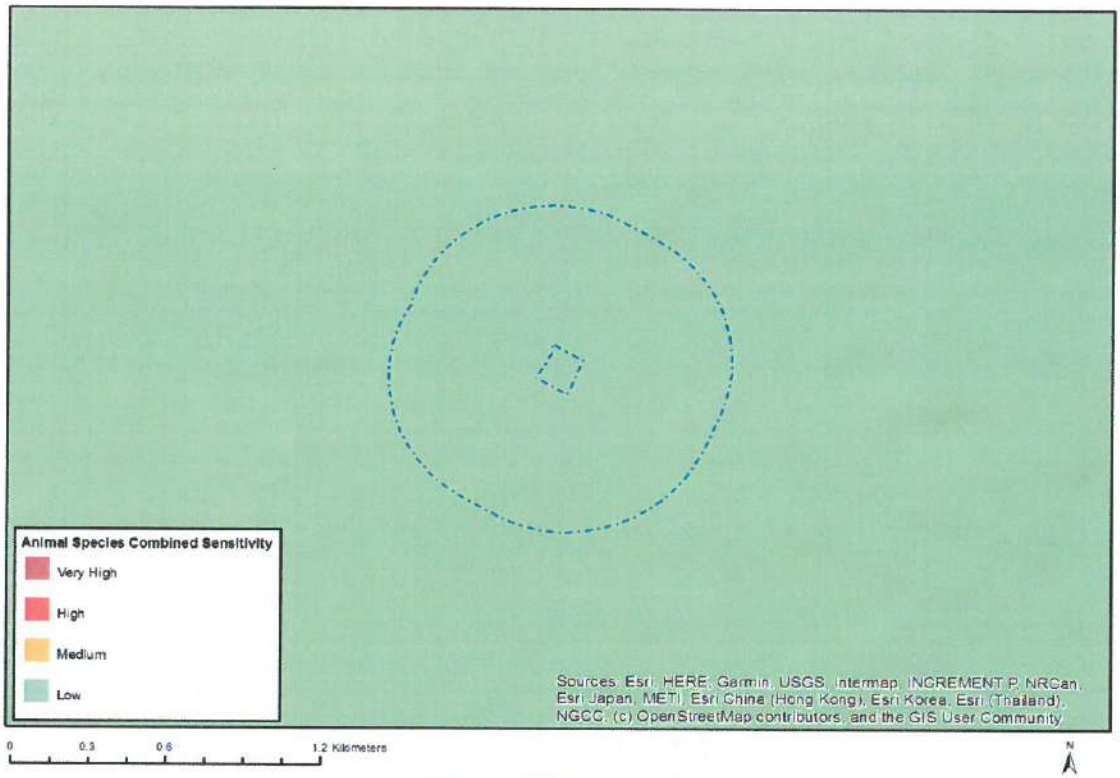


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



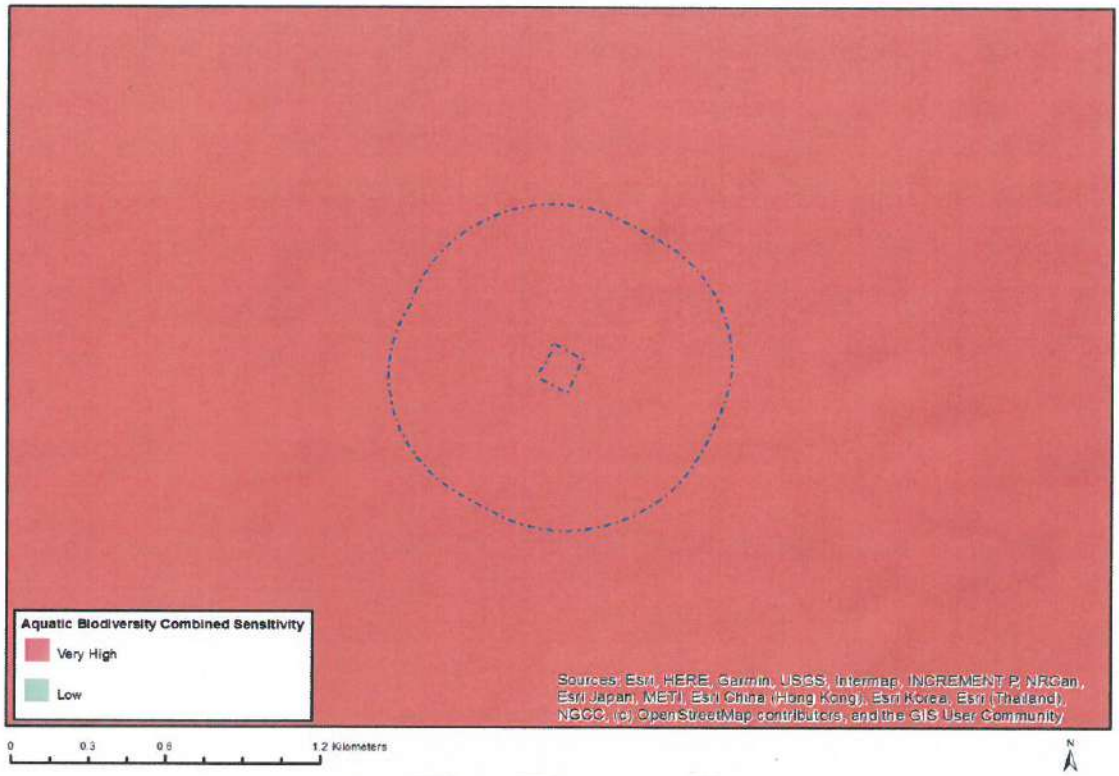
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY

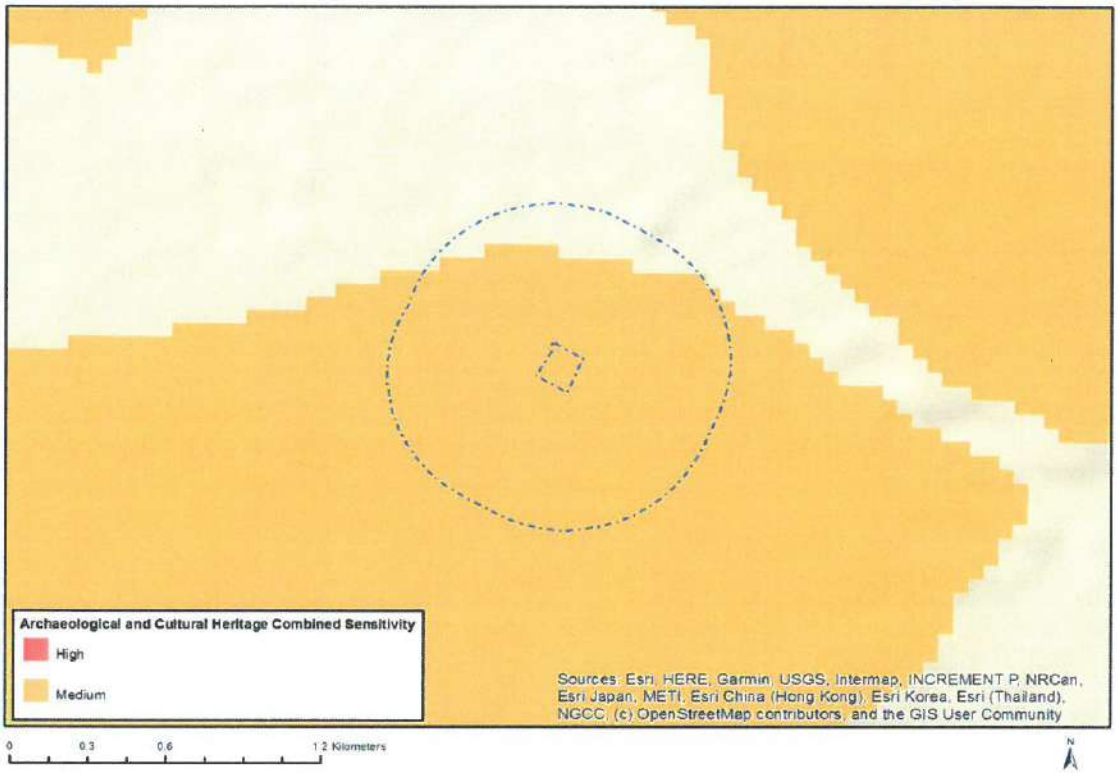


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Strategic water source area

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY

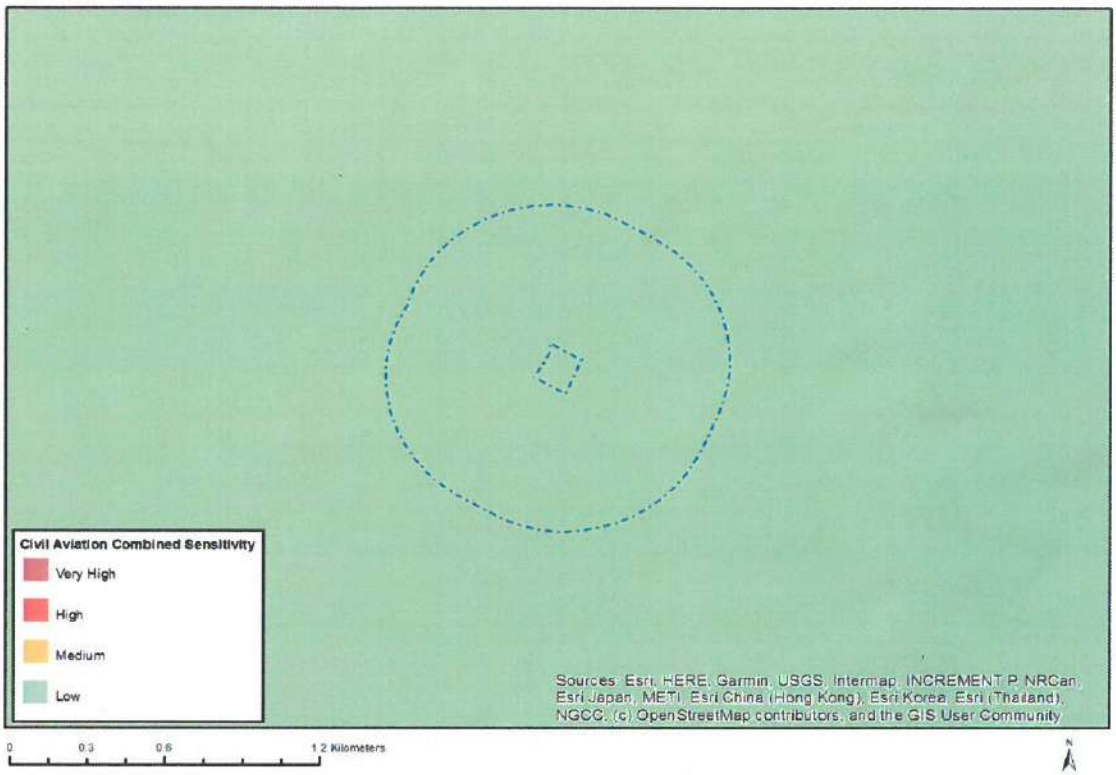


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Mountain or ridge

MAP OF RELATIVE CIVIL AVIATION THEME SENSITIVITY

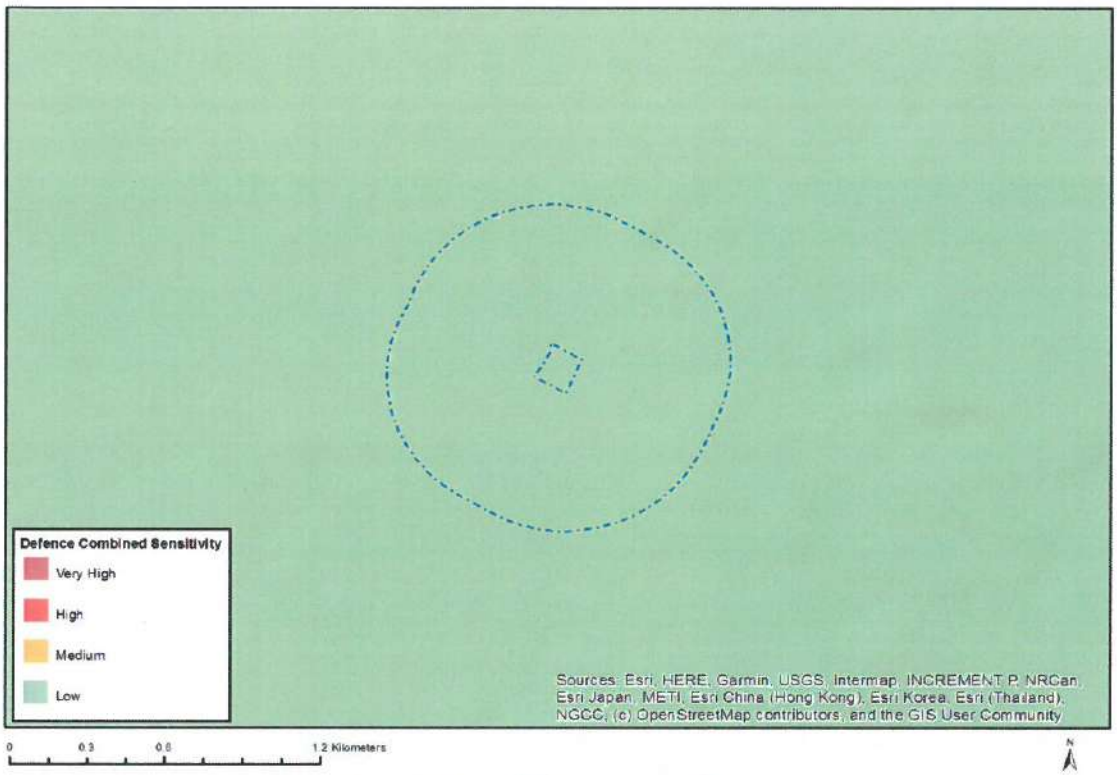


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity

MAP OF RELATIVE DEFENCE THEME SENSITIVITY

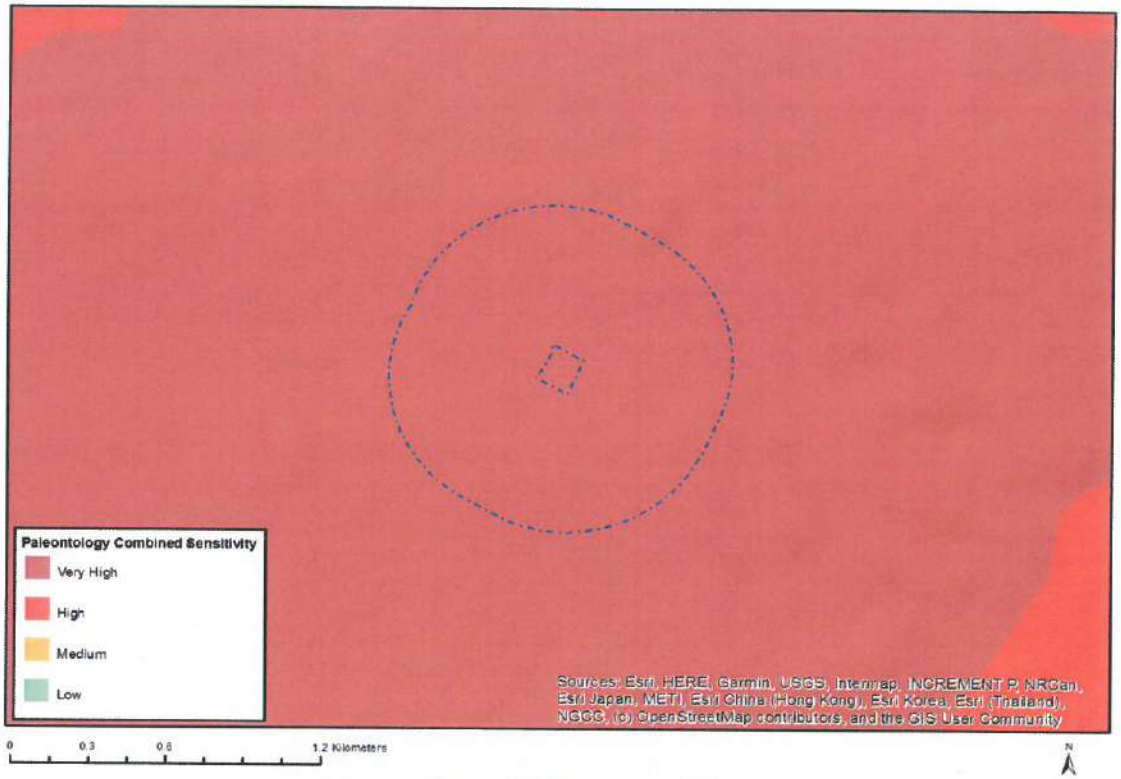


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY

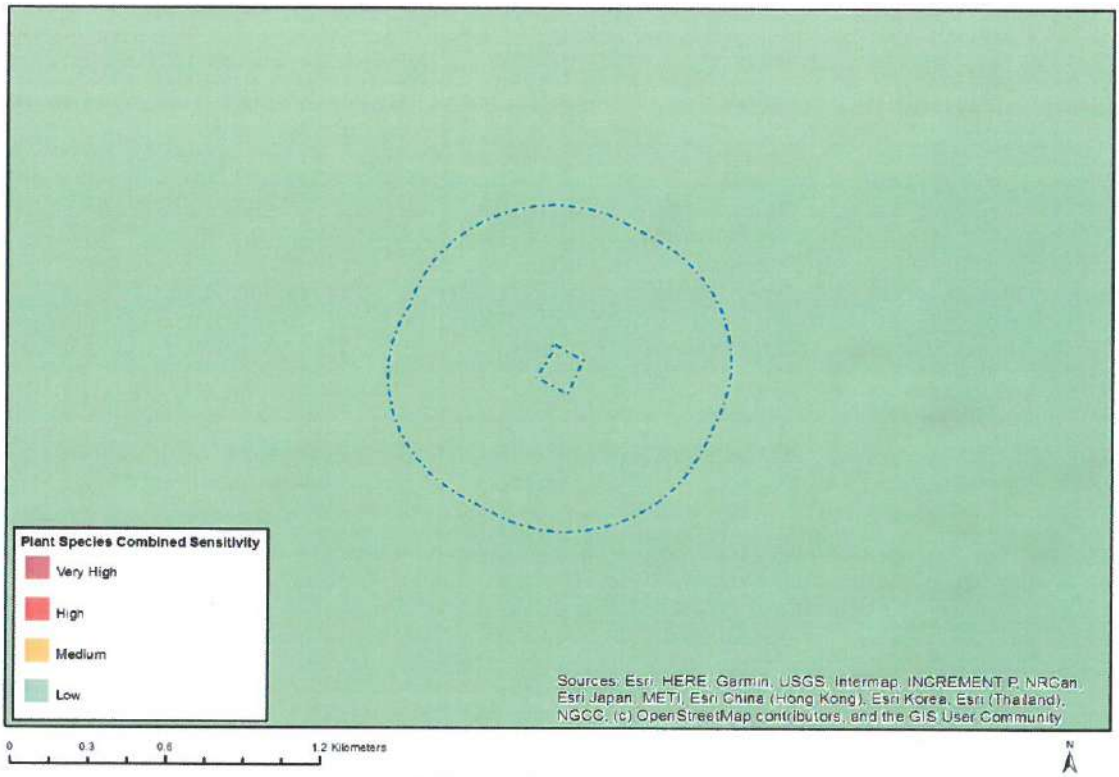


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Very High	Features with a Very High paleontological sensitivity

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



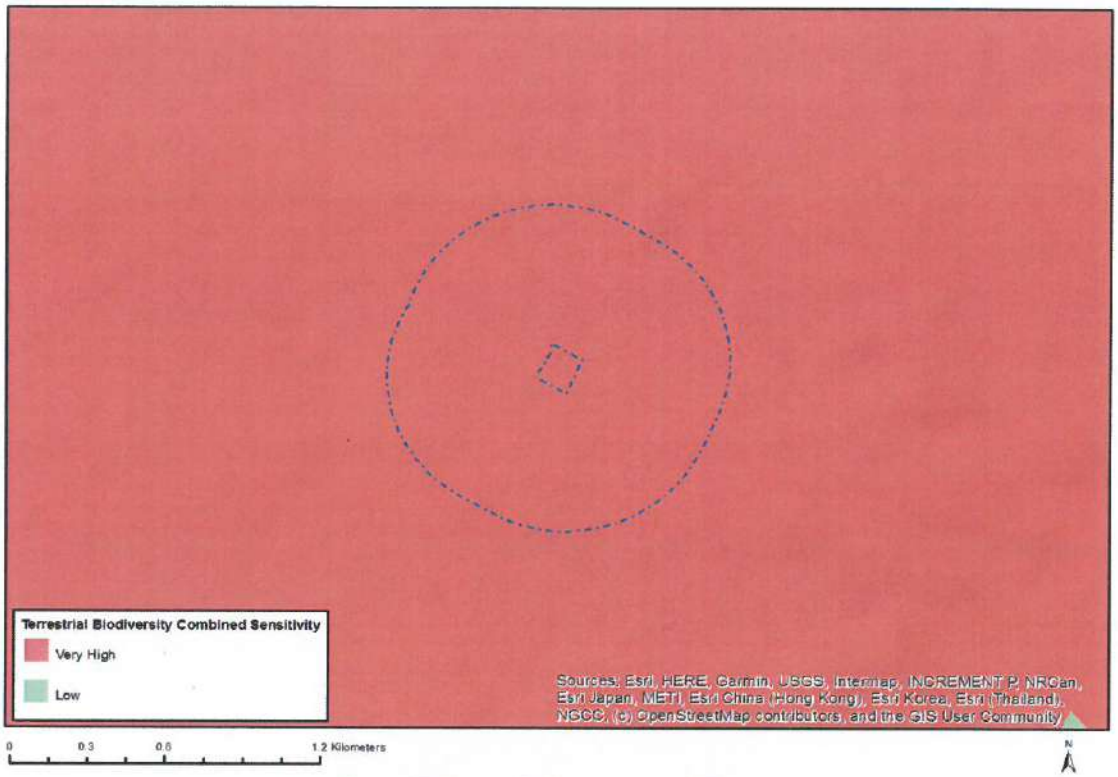
Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY

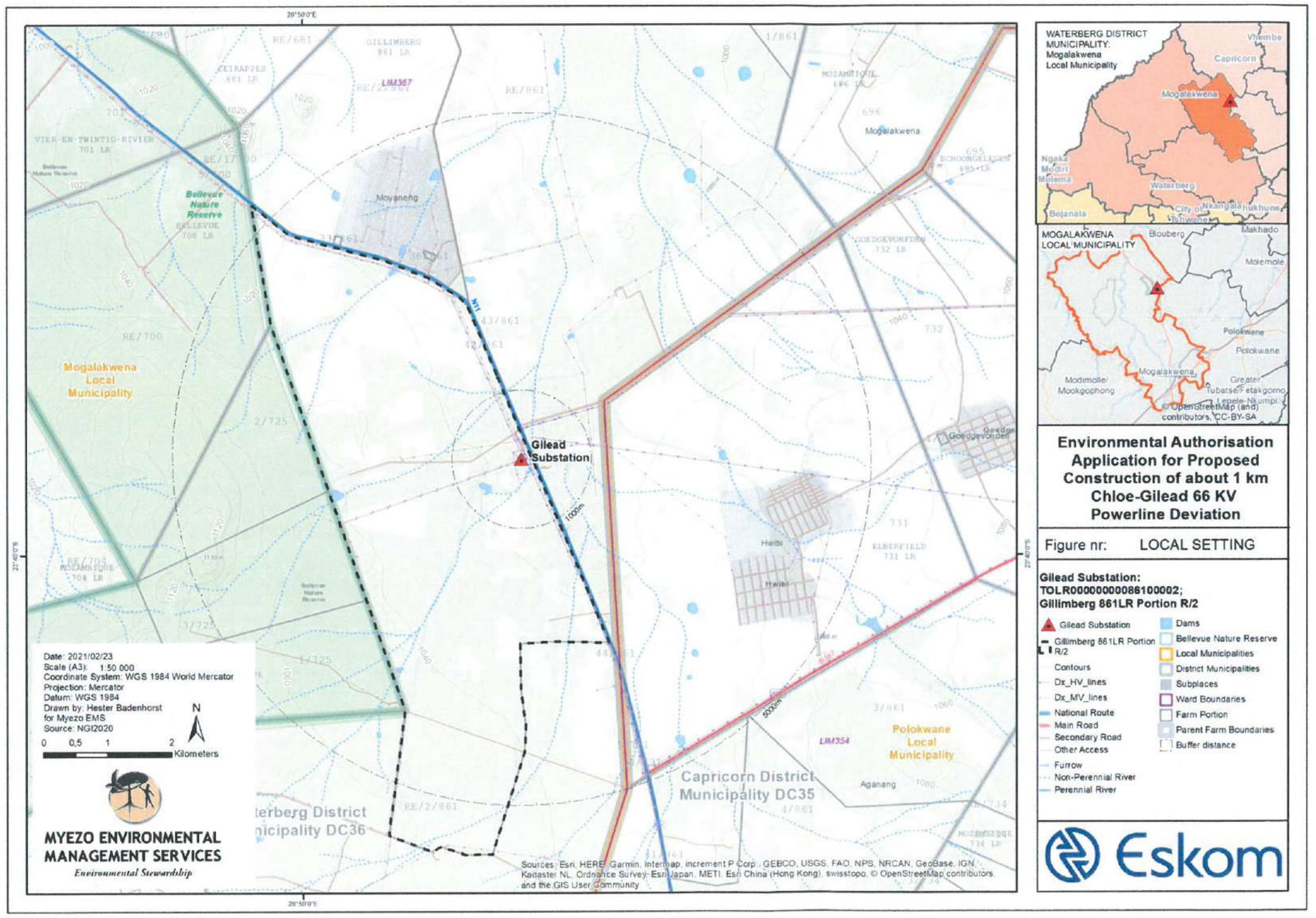


Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

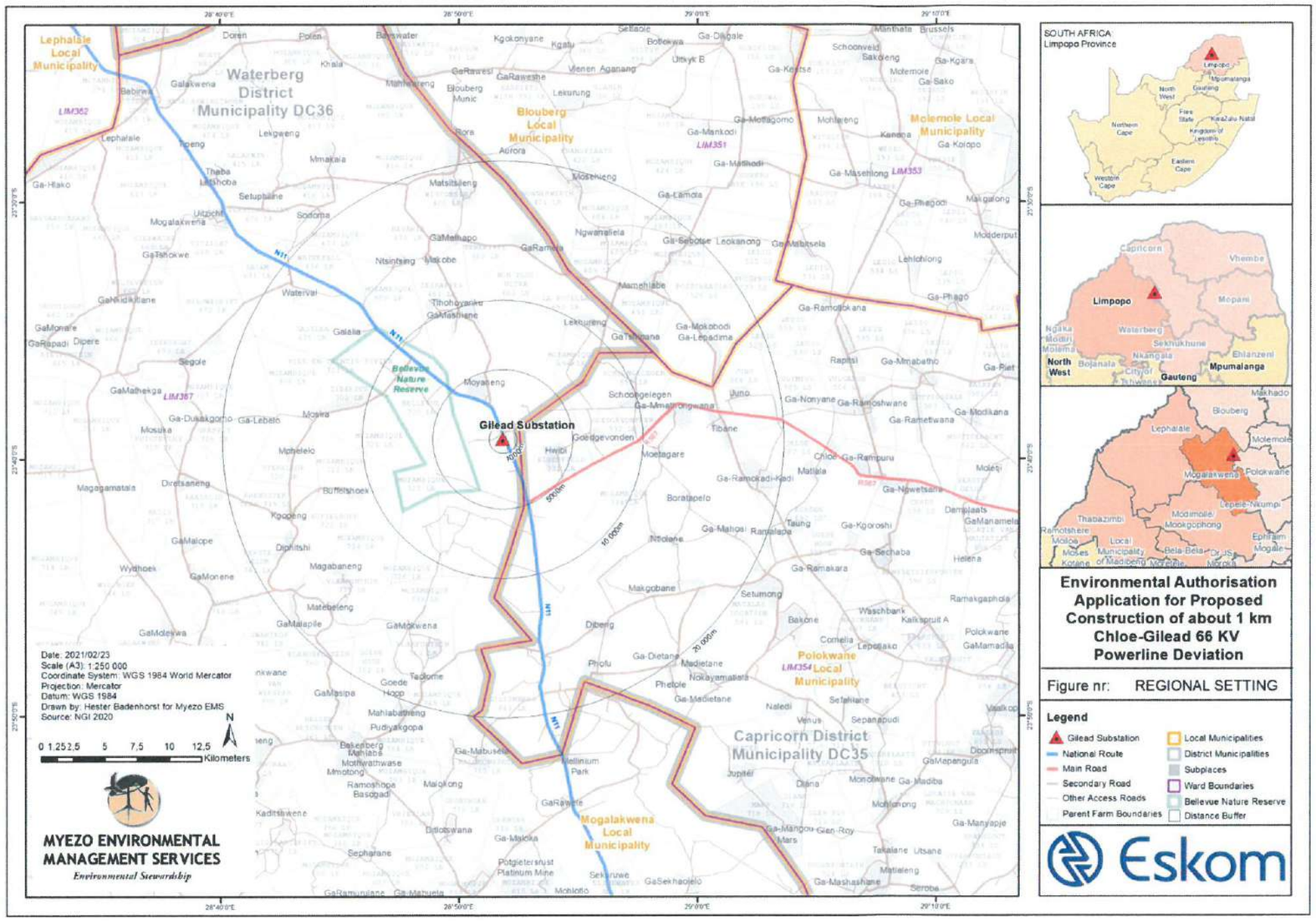
Sensitivity	Feature(s)
Very High	Ecological Support Area

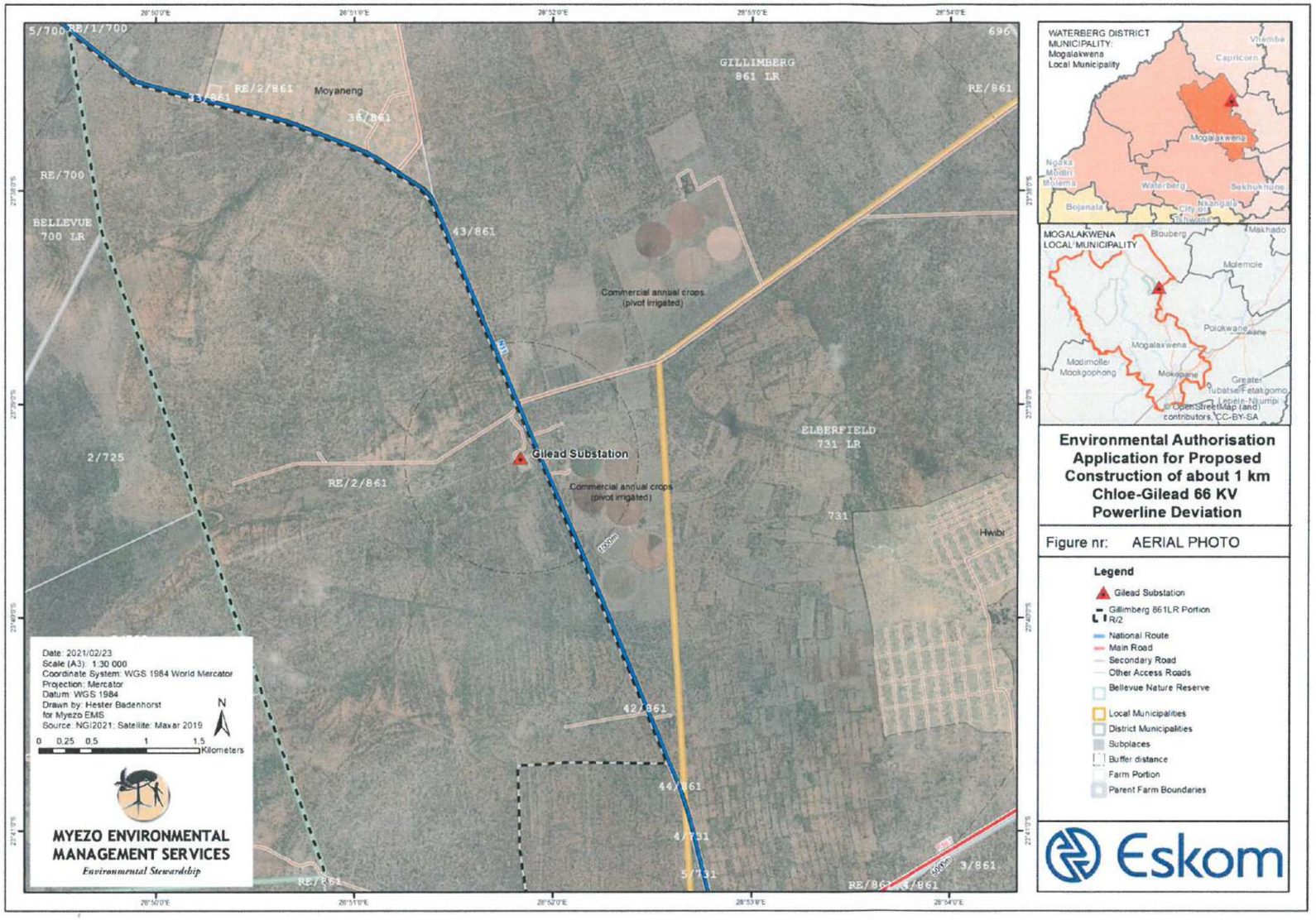
Appendix 3.1-1: Project Maps


28°50'0"E
27°40'0"S
LIM367
Bellevue Nature Reserve
Moyaneng
Mogalakwena
Mogalakwena Local Municipality
N1
Gilead Substation
1000m
5000m
Hwibi
Hwibi
LIM354
Polokwane Local Municipality
Capricorn District Municipality DC35
Aganang
Goedgevonden
Date: 2021/02/23
Scale (A3): 1:50 000
Coordinate System: WGS 1984 World Mercator
Projection: Mercator
Datum: WGS 1984
Drawn by: Hester Badenhorst for Myezo EMS
Source: NGI2020
N
0 0,5 1 2 Kilometers
MYEZO ENVIRONMENTAL MANAGEMENT SERVICES
Environmental Stewardship
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community
WATERBERG DISTRICT MUNICIPALITY
Mogalakwena Local Municipality
Vhembe
Capricorn
Mogalakwena
Ngaka Modiri Molema
Waterberg
Bojanala
MOGALAKWENA LOCAL MUNICIPALITY
Blouberg
Makhado
Molemole
Polokwane
Modimolle/ Mookgophong
Greater Tubatse/ Fetakgomo
Lepele-Nkumpi
© OpenStreetMap (and) contributors, CC-BY-SA
Environmental Authorisation Application for Proposed Construction of about 1 km Chloe-Gilead 66 KV Powerline Deviation
Figure nr: LOCAL SETTING
Gilead Substation: TOLR0000000008610000 2; Gillimberg 861LR Portion R/2
Gilead Substation
Gillimberg 861LR Portion R/2
Contours
Dx_HV_lines
Dx_MV_lines
National Route
Main Road
Secondary Road
Other Access
Furrow
Non-Perennial River
Perennial River
Dams
Bellevue Nature Reserve
Local Municipalities
District Municipalities
Subplaces
Ward Boundaries
Farm Portion
Parent Farm Boundaries
Buffer distance
Eskom

Eskom - Gilead - Powerline Deviation Project

Environmental Management Programme




5/700
RE/1/700
RE/2/861
Moyaneng
43/861
36/861
GILLIMBERG
861 LR
RE/861
696
RE/700
BELLEVUE
700 LR
43/861
Commercial annual crops (pivot irrigated)
Gilead Substation
2/725
RE/2/861
Commercial annual crops (pivot irrigated)
ELBERFIELD
731 LR
731
Hwibi
42/861
44/861
4/731
5/731
RE/861
3/861
Date: 2021/02/23
Scale (A3): 1:30 000
Coordinate System: WGS 1984 World Mercator
Projection: Mercator
Datum: WGS 1984
Drawn by: Hester Badenhorst
for Myezo EMS
Source: NGI2021; Satellite: Maxar 2019
N
0 0,25 0,5 1 1,5 Kilometers
MYEZO ENVIRONMENTAL MANAGEMENT SERVICES
Environmental Stewardship
WATERBERG DISTRICT MUNICIPALITY
Mogalakwena Local Municipality
Vhembe
Capricorn
Mogalakwena
Ngoka Mothiri Molema
Waterberg
Sekhukhune
Bojanala
City of Tshwane
Nkangala
MOGALAKWENA LOCAL MUNICIPALITY
Blouberg
Makhado
Molemole
Polokwane
Mogalakwena
Modimolle/ Mookgophong
Mokopane
Greater Tubatse/Fetakgomo
Lepele-Nkumpi
© OpenStreetMap (and) contributors, CC-BY-SA
Environmental Authorisation Application for Proposed Construction of about 1 km Chloe-Gilead 66 KV Powerline Deviation
Figure nr: AERIAL PHOTO
Legend
Gilead Substation
Gillimberg 861LR Portion R/2
National Route
Main Road
Secondary Road
Other Access Roads
Bellevue Nature Reserve
Local Municipalities
District Municipalities
Subplaces
Buffer distance
Farm Portion
Parent Farm Boundaries
Eskom