



**Anglo American Platinum: Rustenburg Platinum Mines  
Seritarita Secondary School Relocation and Establishment Project  
Final Basic Assessment Report**

**LEDET Reference Number: 12/1/9/1-W260**

**NEAS Reference Number: LIM/EIA/0001767/2023**

September 2023

*Alta van Dyk Environmental Consultants cc*

*Postnet Suite # 745*

*Private Bag X 1007*

*Lyttelton*

*0140*

*Tel: +27 12 940 9089*

*Email: [alta@avde.co.za](mailto:alta@avde.co.za)*



**Alta van Dyk  
Environmental**

# Anglo American Platinum: Rustenburg Platinum Mines Seritarita Secondary School Relocation and Establishment Project Final Basic Assessment Report

AVDE Project Ref: 002-20

Prepared by: Suzanne van Rooy



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## VERSION CONTROL

Alta van Dyk Environmental Consultants cc

Version: Final

Reviewed by: Alta van Dyk

Signed: 

Position: Environmental Specialist

Date: September 2023

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## ABBREVIATIONS

AAP	Anglo American Platinum
AVDE	Alta van Dyk Environmental Consultants
BAR	Basic Assessment Report
BID	Background Information Document
CCTV	Closed-circuit television
COC	Certificate of Compliance
CRR	Comment and Response Report
CSIR	Council for Scientific and Industrial Research
DALRRD	Department of Agriculture, Land Reform and Rural Development
DBE	Department of Basic Education
DFFE	Department of Forestry, Fisheries and the Environment
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
e-WULAAS	Electronic Water Use Licence Application and Authorisation System
GQM	Groundwater Quality Management
HD	Historically Disadvantaged
I&APs	Interested and Affected Parties
ICT	Information and Communication Technology
IDP	Integrated Development Plan
IDP	Integrated Development Plan
LEDET	Limpopo Department of Economic Development, Environment and Tourism
MAP	Mean Annual Precipitation
MLM	Mogalakwena Local Municipality
MTC	Mapela Traditional Council
MV/LV	Medium Voltage/Low Voltage
NEM:AQA	National Environmental Management: Air Quality Act
NEM:BA	National Environmental Management: Biodiversity Act
NEM:WA	National Environmental Management Waste Act
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NGA	National Groundwater Archive
NNE	North-northeast
NWA	National Water Act
OHS	Occupational Health and Safety

POSA	Plants of Southern Africa
PV	Photovoltaic
RLS	Rustenburg Layered Suite
S&EIR	Scoping and Environmental Impact Reporting
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SCC	Species of Conservation Concern
SDF	Spatial Development Framework
SISSG	School Infrastructure Safety and Security Guidelines
WDM	Waterberg District Municipality
WRC	Water Research Commission
WULA	Water Use Licence Application
WWTP	Waste water treatment plant



# LIMPOPO

PROVINCIAL GOVERNMENT  
REPUBLIC OF SOUTH AFRICA

## DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

### BASIC ASSESSMENT REPORT - EIA REGULATIONS, 2014

Basic Assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

**File Reference Number:**

To be confirmed

**NEAS Reference Number:**

**Date Received:**

**Due date for acknowledgement:**

**Due date for acceptance:**

**Due date for decision**

**Kindly note that:**

(For official use only)

1. The report must be compiled by an independent Environmental Assessment Practitioner.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the Department of Economic Development, Environment and Tourism as the competent authority (Department) for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. An incomplete report may be returned to the applicant for revision.
6. Unless protected by law, all information in the report will become public information on receipt by the department. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

7. The Act means the National Environmental Management Act (No. 107 of 1998) as amended.
8. Regulations refer to Environmental Impact Assessment (EIA) Regulations of 2014.
9. The Department may require that for specified types of activities in defined situations only parts of this report need to be completed. No faxed or e-mailed reports will be accepted.
10. This application form must be handed in at the offices of the Department of Economic Development, Environment and Tourism:-

<p><b><u>Postal Address:</u></b>  Central Administration Office  Environmental Impact Management  P. O. Box 55464  <b>POLOKWANE</b>  0700</p>	<p><b><u>Physical Address:</u></b>  Central Administration Office  Environmental Affairs Building  20 Hans Van Rensburg Street / 19 Biccard Street  <b>POLOKWANE</b>  0699</p>
<p><b>Queries should be directed to the Central Administration Office: Environmental Impact Management:-</b></p> <p>For attention: Mr E. V. Maluleke  Mobile: 082 947 7755  Email: <a href="mailto:malulekeev@ledet.gov.za">malulekeev@ledet.gov.za</a></p>	

**View the Department's website at <http://www.ledet.gov.za/> for the latest version of the documents.**

## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
-----	----

If YES, please complete the form entitled “Details of specialist and declaration of interest” or appointment of a specialist for each specialist thus appointed:

Refer to Appendix D8 for the signed copies of ‘Details of specialists and declaration of interest’ forms.

Any specialist reports must be contained in Appendix D.

### **Site sensitivity verification**

In accordance with the Procedures for the Assessment and Minimum Criteria for Reporting on identified Environmental Themes in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), a Site Sensitivity Verification has been compiled to provide a rationale for the specialist studies undertaken as part of the environmental authorisation process. This section addresses the findings of the Screening Tool Report (Appendix G1), generated from the National Web Based Environmental Screening Tool, and provides a motivation for the various specialist studies identified to be conducted.

As per the Screening Tool Report, the proposed site is located within the following areas of sensitivity:

- Agriculture Theme: High sensitivity
- Animal Species Theme: Medium sensitivity
- Aquatic Biodiversity: Low sensitivity
- Archaeological and Cultural Heritage Theme: Low sensitivity
- Civil Aviation Theme: Low sensitivity
- Defence Theme: Medium sensitivity
- Palaeontology Theme: Medium sensitivity
- Plant Species Theme: Low sensitivity
- Terrestrial Biodiversity Theme: Low sensitivity

Other than the specialist studies that have been commissioned and the impacts identified and assessed, the other specialist studies suggested by the Screening Tool Report are not considered as required for this study. A motivation is provided in Table 1.

**Table 1: Specialist studies required as per the Screening Tool Report and relevant motivations**

<b>Specialist study</b>	<b>Undertaken/not undertaken</b>	<b>Motivation</b>
Landscape/Visual Impact Assessment	Not undertaken	Visual impacts will be considered as part of the impact assessment to be included in the Basic Assessment Report. It is not deemed necessary to undertake a Specialist Study at this stage.
Archaeological and Cultural Heritage Impact Assessment	Undertaken	Undertaken by Beyond Heritage, refer to Section B Chapter 6 and Appendix D5.
Palaeontology Impact Assessment	Not undertaken	Based on the South African Heritage Resources Agency (SAHRA) sensitivity map the area is of insignificant paleontological sensitivity and no further palaeontological studies are required. Refer to Section B Chapter 6.
Terrestrial Biodiversity Impact Assessment	Undertaken	Undertaken by the Biodiversity Company, refer to Section B Chapter 4 and Appendix D4.
Aquatic Biodiversity Impact Assessment	Undertaken	A freshwater assessment was undertaken by the Biodiversity Company, refer to Section B Chapter 3 and Appendix D2.
Socio-Economic Assessment	Undertaken	Undertaken by Tony Barbour Environmental Consulting, refer to Section B Chapter 6 and Appendix D7.
Plant Species Assessment	Undertaken	Included in the Terrestrial Biodiversity Assessment undertaken by The Biodiversity Company. Refer to Section B Chapter 4 and Appendix D4.

**Additional Specialist Studies undertaken**

The following additional specialist studies were undertaken in support of the environmental authorisation application:

- Soils and Agricultural Potential Assessment, undertaken by the Biodiversity Company (Appendix D3);
- Hydrogeological Assessment undertaken by Geostratum Water Management Consultants (Appendix D1); and
- Traffic Impact Assessment undertaken by Zutari (Appendix D6).

## 1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail<sup>1</sup>:

### Project Description

#### 1. Background

Seritarita Secondary School is located in the Skimming and Leruleng Villages approximately 25km northwest of the town of Mokopane, Mogalakwena Local Municipality, Limpopo Province. The school has approximately 840 learners and 24 teachers. The school is adjacent to Anglo American Platinum (AAP) Rustenburg Platinum Mines' Mogalakwena Mine (Mogalakwena Mine), specifically its South Pit. The open pit is impacting the school due to its close proximity to the opencast operations (the school is currently ~800m from the centre of the pit). These impacts include increased dust fallout, noise and tremors which poses adverse health and safety risks. Learning at the school as well as the productivity of the mine are impacted by their incompatible co-existence.

AAP is planning to relocate both Skimming and Leruleng communities, who are also affected by the mining activities. The relocation of these communities is planned for 2027/2028. As the planned extension of the South Pit (Cut 11) will place Seritarita Secondary School within the regulated blast zone (within 500m) of the South Pit, AAP is proposing to temporarily relocate the school outside of the blast zone, but still within the Skimming and Leruleng communities. The proposed location and development of the temporary relocation is approximately 2,5 km west from the school's current location. The school will be permanently relocated with the overall Skimming and Leruleng Villages relocation planned by AAP.

Alta van Dyk Environmental Consultants cc (AVDE) has been appointed as the Environmental Assessment Practitioner (EAP) for this project to undertake the environmental authorisation, Water Use Licence Application (WULA) and associated public participation process.

#### 2. Location of the newly constructed Seritarita Secondary School

The proposed relocation site is on the farm Zwartfontein 814 LR, administered by the Department of Agriculture, Land Reform and Rural Development (DALRRD) within a tribal area administered by the Mapela Traditional Council (MTC). A site of approximately 28 ha has been earmarked, of which only about 13 ha will be utilised for the temporary relocation of the school. The proposed site is located directly east of the Mapela Road. The property falls within the jurisdiction of the Mogalakwena Local Municipality and the Waterberg District Municipality. Refer to Figure 1 for a locality map.

#### 3. Relocation of Seritarita Secondary School

The temporary relocation site of the new school will cover an area of approximately 13 ha. The following sections detail the infrastructure that will form part of the relocated school. The school will be established to accommodate the pupils and prefabricated classrooms and staff buildings are proposed for rapid construction and demolition. Figure 2 indicates the location of the relocated school and access roads.

##### 3.1 Access roads to the schools

<sup>1</sup> Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

A primary access road linking the newly constructed school to Skimming Village will be constructed on the perimeter of the school site (400m long, 7m wide). This new access road will be a two-lane single carriage way road (one lane in each direction).

A secondary access road to the relocated school will be constructed/obtained via the Mapela Provincial Road to the newly constructed school. The new access road will be a two-lane single carriage way road (one lane in each direction), approximately 700 m long and 7m wide. Refer to Figure 2 for the location of the access roads.

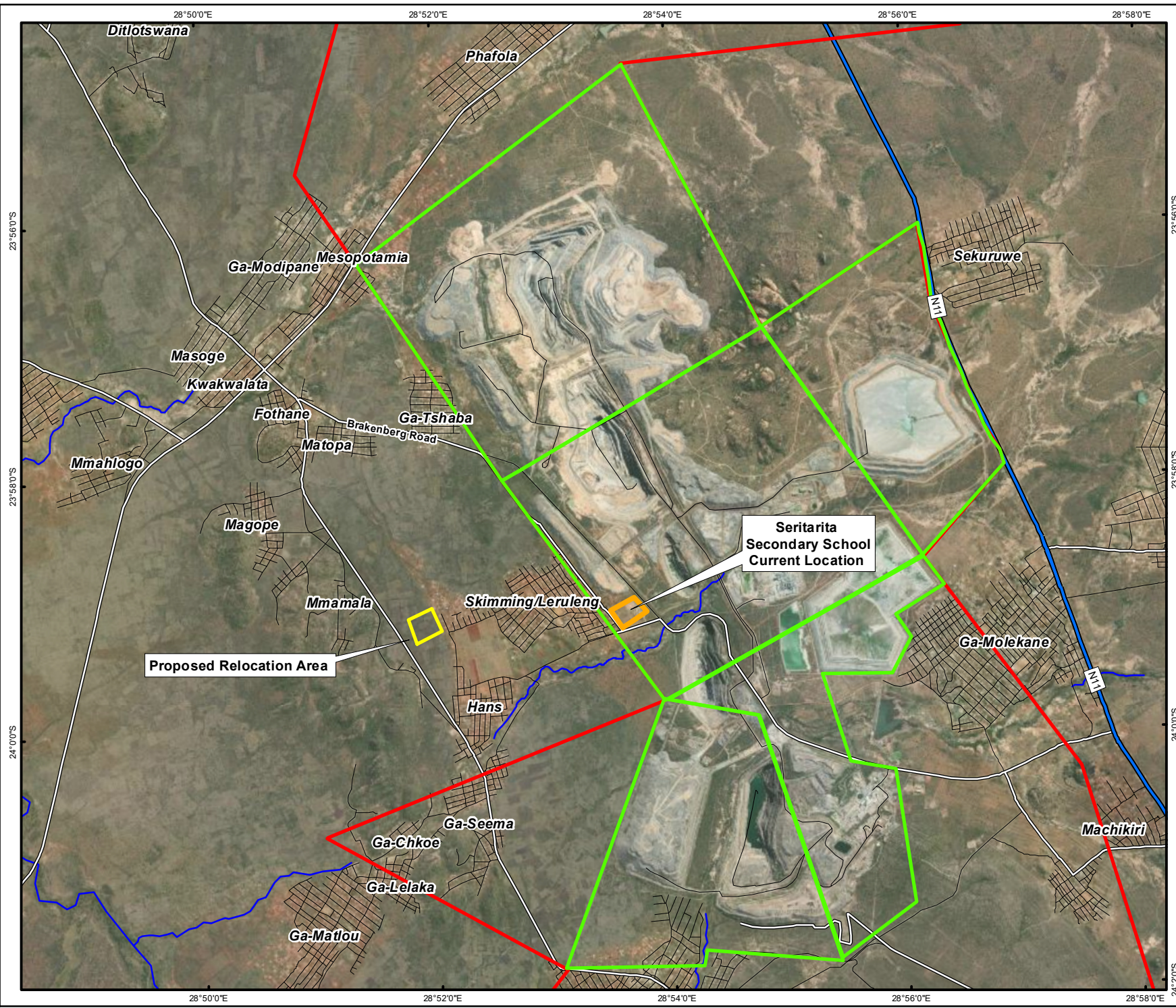
### **3.2 Earthworks**

Vegetation clearing and levelling of the area earmarked for the establishment of the relocated new school will be undertaken by bulldozers and mechanical excavators. Bulk earthworks are expected to be localised excavations in preparation to construct concrete platforms for the buildings. Site preparation will include the removal of bushes and topsoil from the proposed construction areas. The removed topsoil will be re-used within the school for landscaping and vegetable gardens. Excavations of up to 1m depth are anticipated for the installation of services.

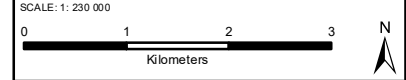
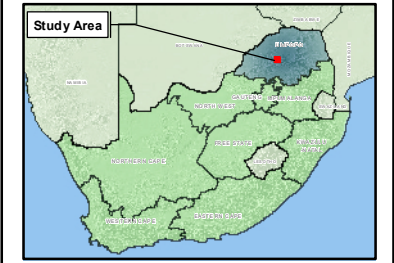
Preparation of the platforms (soil rafts) will require compaction of the excavated areas.

Paved walkways and parking areas will be provided, and this will require the use of in-situ materials (upon top-soil removal) with minimal importation of sand materials to prepare final layers for the paving installation.





- ### Legend
- Proposed Relocation Area
  - Seritarita Secondary School
  - Mining Rights Area
  - Surface Rights Area
  - Motorway
  - Tertiary Road
  - Street/Road
  - Track
  - Rivers



TITLE:  
**Figure 1: Locality Map for Seritarita Secondary School Relocation Project**

CLIENT:  
**Anglo American Platinum, Rustenburg Platinum Mine, Mogalakwena**

DATE: July 2023	PROJECT: MOK GALAKWENA
DRAWN: THURLOW MAPPING	APPROVED: KP
MAP: School_Relocation_Rev1.mxd	REV: 1

Alta van Dyk Environmental Consultants cc (2011/059764/23)

VAT No: 4630259952  
 Tel: 012 940 9457  
 Fax: 086 634 3967  
 Cel: 061 403 2462

Projection: Transverse Mercator CM: 29 Datum:WGS 84  
 Source: OSM Vector 2022 -  
 Imagery: ESRI World Imagery Layer  
 Inst.et: ESRI Data and Maps

SIZE:  
**A4**



**THE RELOCATION OF SERITARITA SECONDARY SCHOOL  
PROPOSED SITE IDENTIFICATION AND ACCESS  
Site Plan**



**SITE PLAN - PROPOSED ACCESS ROAD**



BLOCK A | WEDGE FIELD OFFICE PARK | 17 MUSWELL ROAD SOUTH | BRYANSTON 2021 | JOHANNESBURG  
tel (+27) 11 540 0963 | fax (+27) 86 718 0543 | mobile: (+27) 73 471 8759  
email: joseph@gds-sa.co.za | info@gds-sa.co.za

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**Figure 2: Location of access roads**

### **3.3 Building requirements**

The scope of works for the design and construction supervision of the proposed temporary relocation of the existing Seritarita Secondary School includes but is not limited to the following:

#### **Buildings**

All buildings shall respond to appropriate green building design principles and be constructed in a prefabricated system:

- A large size Administration Block
- Classroom Blocks comprising 26 classrooms
- Library Block with storage facilities
- Computer Laboratory with storage facilities
- Two Science Laboratory with storage
- Multi-purpose classroom block
- Kitchen/ Nutrition Centre block
- Two Workshops
- School Hall
- Ablution Blocks, (Staff, Boys and Girls Blocks)
- General Stores
- Sport Changing Rooms
- The Caretaker's Unit
- Guard/Gate House
- Refuse Yard

#### **Sports and recreation facilities**

- Soccer field with running tracks
- Two combination courts
- Outside Assembly area
- Vegetable Garden

The proposed layout for the school is indicated in Appendix C. Figure 3 shows typical pre-fabricated classrooms, which are similar to what will be constructed for the relocated school.



**Figure 3: Typical examples of pre-fabricated classrooms**

### **3.4 Power supply**

The total school system's daily energy requirement has been estimated at 350 kWh/day. A hybrid power supply approach will be followed:

#### Connected to Eskom Power Grid:

3 Phase Power will be supplied by Eskom. A Medium Voltage/Low Voltage (MV/LV) powerline has been identified within close proximity (~600m away) of the proposed relocation site. An underground cable will be installed from the school to a ground mounted approximately 100 kVA transformer.

#### Solar Photovoltaic (PV)

AAP will install a grid tied solar photovoltaic installation (80kW) with battery backup to provide back-up power for essential services and buildings during loadshedding. The monocrystalline PV solar panels will be placed on the roofing structures for the buildings.

#### Generator

An emergency diesel back-up generator will be installed, should Eskom or solar power supply be insufficient.

### **3.5 Water supply**

Each learner is expected to require 25-30 litres of water per day, therefore, the estimated daily demand is



approximately 40 000ℓ/day for 25 days in a month (school days and weekend sport/events at the school) (1 000 000ℓ per month).

Water for potable and sanitary use will be sourced from a newly drilled borehole. A water filtration plant will be provided and water will be treated if required. Water will be stored in 1 x 40m<sup>3</sup> (40 000ℓ) elevated steel sectional tank. Carting water trucks will be used as a backup option to the borehole water supply. In addition, rainwater and grey water harvesting will be implemented and water collected will be stored in plastic tanks.

### **3.6 Sanitation**

There is no bulk municipality sewage reticulation in the vicinity of the project site. As municipal sanitation is not present in the area, an underground concrete pre-digestion chamber is planned with a sewer treatment plant installed. The estimated sewage flow at a day school is 37 litres/person/day. A sewage treatment plant (waste water treatment plant) will be installed to collect and treat sewage from the school facilities. The resultant grey water which shall be fit for use from the treatment process shall be used for irrigation of the school landscaped areas and sports field. Certificate of Compliance (COC) shall be issued by accredited installers upon the installation of the waste water treatment plant. A maintenance plan shall also be in place for the plant.

### **3.7 Lighting**

Area lighting in the school is planned with solar flood lights around the entire school. Floodlights will be connected to both the grid power and solar.

### **3.8 Security/Fire prevention**

The schoolgrounds will be fenced with a 2.4m high fence. School security and safety shall be in compliance with School Infrastructure Safety and Security Guidelines (SISSG)/requirements by the Department of Basic Education (DBE). Security guard arrangements shall also be in place. Closed-circuit television (CCTV) circuit will be installed for monitoring the property.

The School buildings and other school facilities shall comply with fire regulations in terms of the National Building Regulations and SANS 10-400. This is to be in line with the South African Schools Act (84/1996): Regulations relating to Minimum Uniform Norms and Standards for Public School Infrastructure.

### **3.9 Information and Communication Technology (ICT)**

ICT system installation will be informed by the appropriate supported technology.

#### **3.10 Internal roads**

All internal roads are to be paved.

#### **3.11 General waste**

General waste generated at the school will be segregated and stored in wheelie bins or skips kept in a designated refuse yard. Waste will be removed frequently off-site by an approved waste management contractor to the Mogalakwena Local Municipality's Mokopane Landfill Site.

#### **3.12 Services required during the construction phase**

##### **Temporary laydown area**

A material laydown area and office area for contractors of approximately 5 000m<sup>2</sup> will be required. The location of

this area shall be indicated to the appointed contractor by the Occupational Health and Safety (OHS) Consultant. This will be located within the footprint of the school.

### **Waste management**

All waste generated during the construction phase of the project will be temporarily stored in skips located at the laydown area. The skips will be removed at regular intervals and disposed of at the Mogalakwena Local Municipality's Mokopane Landfill site.

### **Water and sanitation**

Sanitation services will be required for onsite personnel during the construction phase of the project. Chemical toilets will be used and serviced regularly by a registered waste contractor. The chemical toilets will be located at the contractor's laydown area. Construction duration is expected to be 6 months. Extracted sewage will be removed and transported to a registered Waste Water Treatment plant.

Potable water will be provided by the appointed contractor.

### **Legislative requirements**

Prior to the commencement of the proposed temporary relocation of the Seritarita Secondary School, AAP needs to obtain the required environmental related authorisations and licences. The following is required:

- A Basic Assessment environmental authorisation process in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) and the associated Environmental Impact Assessment (EIA) Regulations. The competent authority for this process is the Limpopo Department of Economic Development, Environment and Tourism (LEDET).
- A Water Use Licence Application (WULA) in terms of the National Water Act (Act No. 36 of 1998) (NWA). The competent authority for this process is the Department of Water and Sanitation (DWS).

### **Environmental Authorisation**

The minister of environmental affairs published NEMA Regulations during 2014 which contains the listed activities that require environmental authorisation prior to commencement. There are three listings, each requiring a different type of environmental authorisation process.

- Listing 1: Activities requiring a Basic Assessment environmental authorisation process;
- Listing 2: Activities requiring a Scoping and Environmental Impact Reporting (S&EIR) environmental authorisation process
- Listing 3: Activities within certain geographic areas requiring a Basic Assessment environmental authorisation process

The listed activities triggered for the proposed temporary relocation of the Seritarita Secondary School is shown in Table 2. As Listing Notice 1 activities are triggered by the proposed project, a Basic Assessment environmental authorisation process is followed.

**Table 2: Triggered Listed Activities for the proposed relocation of the Seritarita Secondary School**

Listing Notice and activity number	Listed activity	Description of activity
GNR 983 (4 December 2014, as amended) <b>Activity 27</b>	The clearance of an area of 1 ha or more, but less than 20ha of indigenous vegetation, except where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	<i>Clearance of approximately 13ha of indigenous vegetation will be required for the development of the relocated Seritarita Secondary School.</i>
GNR 983 (4 December 2014, as amended) <b>Activity 28</b>	Residential, mixed, retail, commercial, industrial or <u>institutional developments</u> where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or <u>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</u> excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	<i>The relocated Seritarita Secondary School is an institutional development. From Google Earth images it is evident that the area has been utilised for agricultural purposes in the past. The land is currently vacant.</i>

### **Water Use Licence Application**

A Water Use Licence Application will be submitted in terms of the NWA as the following Section 21 water uses are triggered:

- Section 21 (a): taking water from a water resource (*abstraction of water from borehole*); and
- Section 21 (e): engaging in a controlled activity identified in Section 37(1) - Section 37(1)(a): irrigation of land with waste or water containing waste generated through any industrial activity or by a waterwork (*irrigation of school grounds with treated domestic waste water from treatment plant*).

The WULA will be submitted to the DWS for decision making.

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the Department may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

**Paragraphs 3 – 13 below should be completed for each alternative.**

### Location alternatives

Three sites were considered by AAP to relocate the Seritarita Secondary School. All sites are located on the farm Zwartfontein 814 LR, which is owned by the Republic of South Africa, administered by the Department of Agriculture, Land Reform and Rural Development (DALRRD) within a tribal area administered by the Mapela Traditional Council (MTC). Refer to Figure 4 for an indication of the relocation options considered. A comparison table of the location options is provided in Table 3.

Only the preferred site was further investigated in terms of specialist studies and an impact assessment, as this is the developer’s preferred site.

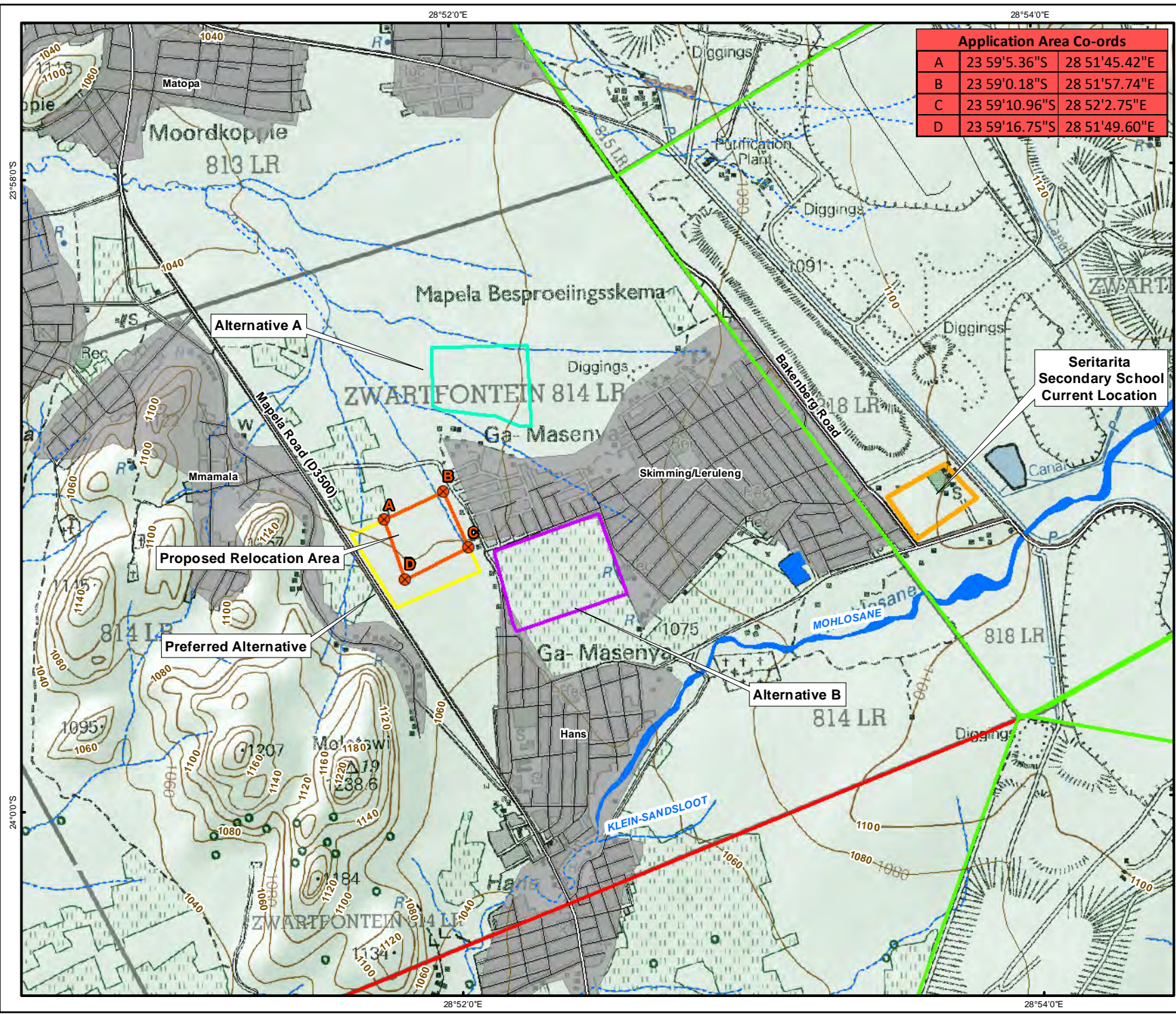
**Table 3: Comparison table for location alternatives considered for Seritarita Secondary School Relocation**

Advantages	Disadvantages
<b>Preferred option</b>	
<ul style="list-style-type: none"> <li>• The site is undeveloped and currently vacant.</li> <li>• There are no private persons affected by the site, only the Mapela Traditional Council.</li> <li>• Sufficient buffer area between the developed and undeveloped areas.</li> <li>• No active agricultural activities are currently taking</li> </ul>	<ul style="list-style-type: none"> <li>• The site is situated on the periphery of the Skimming/Leruleng settlement, therefore access to the school could potentially be challenging for certain pupils.</li> </ul>



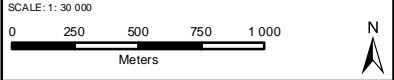
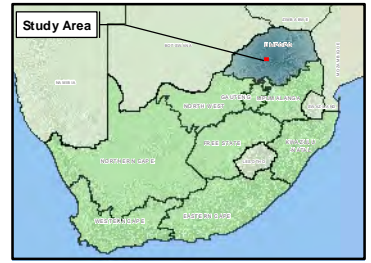
Advantages	Disadvantages
<p>place.</p> <ul style="list-style-type: none"> <li>• Easy access to the Mapela Road from a regional perspective, as well as to the existing settlement.</li> <li>• The site is located in an area classified as No Natural Remaining in terms of the Limpopo Conservation Plan (Version 2).</li> <li>• Potential for intact natural vegetation is low due to previous agricultural activities.</li> <li>• There are no water courses in the project area.</li> <li>• The site is located 1.1km from the proposed Akanani Mine's tailings storage facility, and 1,6 km from the proposed Akanani Mine's surface infrastructure area.</li> </ul>	
<b>Alternative A</b>	
<ul style="list-style-type: none"> <li>• The site is undeveloped and currently vacant.</li> <li>• There are no private persons affected by the site, only the Mapela Traditional Council.</li> <li>• No active agricultural activities are currently taking place.</li> <li>• The site is located in an area classified as No Natural Remaining in terms of the Limpopo Conservation Plan (Version 2)</li> </ul>	<ul style="list-style-type: none"> <li>• Site is situated within close proximity to perennial streams.</li> <li>• Site has limited access to existing roads.</li> <li>• Access roads could potentially cross over streams</li> <li>• The site is situated on the periphery of the Skimming/Leruleng settlement, therefore access to the school could potentially be challenging for certain pupils.</li> <li>• The site is located 150m from the proposed Akanani Mine's tailings storage facility, and 1,9 km from the proposed Akanani Mine's surface infrastructure area.</li> </ul>
<b>Alternative B</b>	
<ul style="list-style-type: none"> <li>• Situated within the Skimming and Leruleng Settlement.</li> <li>• Site has flat topography with no natural vegetation.</li> <li>• Site has adequate access (roads).</li> <li>• The site is located in an area classified as No Natural Remaining in terms of the Limpopo Conservation Plan (Version 2).</li> <li>• The site is located 1.2km from the proposed Akanani Mine's tailings storage facility, and 800m from the proposed Akanani Mine's surface infrastructure area.</li> </ul>	<ul style="list-style-type: none"> <li>• Community beneficiaries have been allocated 1.5ha each, therefore multiple private parties are benefitting from the agricultural activities.</li> <li>• Community is actively ploughing and utilising fields, therefore these community members will lose agricultural land and will have to be compensated.</li> </ul>





Application Area Co-ords		
A	23 59'5.36"S	28 51'45.42"E
B	23 59'0.18"S	28 51'57.74"E
C	23 59'10.96"S	28 52'2.75"E
D	23 59'16.75"S	28 51'49.60"E

- ### Legend
- Seritarita Secondary School
  - Proposed Relocation Area
  - Preferred Alternative
  - Alternative A
  - Alternative B
  - Application Area Co-ords
  - Mining Rights Area
  - Surface Rights Area
  - Tertiary Road
  - Street/Road
  - Track
  - Contours
  - Non-Perennial River
  - Built Up Areas
  - Cultivated Land
  - Hydrological Areas



TITLE:  
Figure 4: Location alternatives

CLIENT:  
**Anglo American Platinum,  
Rustenburg Platinum Mine,  
Mogalakwena Mine**

DATE: June 2023	PROJECT: MOKGALAKWENA
DRAWN: THURLOW MAPPING	APPROVED: KP
MAP: School_Relocation_Alternatives_Rev1.mxd	REV: 2

Alta van Dyk Environmental Consultants cc (2011/059764/23)  
 VAT No: 4630259952  
 Tel: 012 940 9457  
 Fax: 086 634 3967  
 Cel: 061 403 2462



Projection: Transverse Mercator CM: 29 Datum:WGS 84  
 Source: OSM Vector 2023-  
 Image: ESRI World Imagery Layer  
 Topo: NGL TOPOSO\_Mosaic\_latest\_Editions\_Jan-2017.ecw  
 Insrt: ESRI Data and Maps

SIZE:  
A4



## **Technology alternatives – sewage treatment and disposal**

There is no bulk municipality sewage reticulation in the vicinity of the project site. Two options were considered for sewage treatment and disposal, a waste water treatment plant and septic tanks.

### **1. Waste water treatment plant (Biological treatment plant):**

Refer to Appendix G2 for a typical layout of the proposed waste water treatment plant to be utilised based on the SCARAB (or similar) waste treatment plant design.

The capacity of the biological treatment plant is 40 000ℓ per day (40m<sup>3</sup>/day). The treatment plant operates as follows:

#### **Pre-digestion tanks:**

The first stage, and a pre-requisite for the installation of the treatment system, is correctly built/installed Pre-digestion (PD) Chambers. In the Pre-digestion Chambers, the process begins with the physical and biological breakdown of the solid matter into simple liquids, which the plant processes efficiently.

#### **Biological filter:**

The Bio-Tower is comprised of 5 sections for the processing of sewage effluent.

- 1 Constant Header unit

This unit performs the function of controlling the flow of sewage effluent through the Bio-Tower.

- 2 Mixing Chamber

The Sewage Effluent is introduced into the Bio-Tower and is mixed constantly with pre- oxygenated effluent.

- 3 Circulation Chamber

This Chamber circulates the effluent from the Pressurization Chamber back into the

- 4 Mixing Chamber.

Each litre of effluent is re-oxygenated at least once every hour, thereby creating the highest possible concentration of oxygen in the effluent at all times.

- 5 Accelerated Oxygenation Unit

A standard water pump circulates the effluent through the Pressurization Chamber, Where the effluent is oxygenated by mixing it with Air, under high pressure, to allow for the maximum absorption of oxygen.

#### **Media Chamber:**

The media chamber is packed with Bio-Pak to allow for the highest possible surface area. It is on these surfaces that Bio-Mass forms. Bio-Mass is responsible for biological refinement of the effluent.

#### **Pathogen treatment tank:**

Before final discharge it is imperative to disinfect the water for any remaining pathogens or other bacteria. Ozone will be used for ecologically sensitive areas. This ensures that discharged effluent is compliant.

## 2. Septic Tanks

Septic tank systems are a type of simple onsite sewage facility. It is an underground chamber made of concrete, fiberglass, or plastic through which domestic wastewater flows for basic treatment. Settling and anaerobic processes reduce solids and organics, but the treatment efficiency is only moderate. These are ideal in areas that are not connected to a sewerage system, such as the proposed relocated Seritarita Secondary School. The treated liquid effluent is commonly disposed in a septic drain field, which provides further treatment. Nonetheless, groundwater pollution may occur and can be a problem. These types of systems are not supported by the DWS, and is therefore not the preferred option.

### No-go alternative

The no-go alternative is the option of not undertaking the proposed activity or any of its alternatives. Should the proposed Seritarita Secondary School relocation not go ahead, any potential environmental impacts, associated with construction and operation of the relocated school, would be avoided.

However, if the school is not relocated, the safety of learners and employees remain at risk, due to the close proximity of the school to the current Mogalakwena Mine mining activities, including open cast and proposed underground operations.

## 3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the Hartebeeshoek 94 WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

**Latitude (S):**

**Longitude (E):**

**Alternative:**

Alternative S1 <sup>2</sup> (preferred or only site alternative)	23°	59'	8.01"	28°	51'	53.41"
Alternative S2 (if any)	23°	58'	39.31"	28°	52'	4.14"
Alternative S3 (if any)	23°	59'	15.74"	28°	52'	21.19"

**In the case of linear activities:**

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S2 (if any)

<sup>2</sup> "Alternative S.." refer to site alternatives.  
LEDET BA Report, EIA 2014:

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

**Alternative:**

Alternative A1<sup>3</sup> (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

or,

for linear activities:

**Size of the activity:**

130 000m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

**Length of the activity:**

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

m
m
m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Size of the site/servitude:**

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

Alternative A3 (if any)

m <sup>2</sup>
m <sup>2</sup>
m <sup>2</sup>

<sup>3</sup> "Alternative A.." refer to activity, process, technology or other alternatives.  
LEDET BA Report, EIA 2014:

## 5. SITE ACCESS

Does ready access to the site exist?

YES	NO
	700m

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

A primary access road linking the newly constructed school to Skimming Village will be constructed on the perimeter of the school site (400m long, 7m wide). This new access road will be a two-lane single carriage way road (one lane in each direction).

A secondary access road to the relocated school will be constructed/obtained via the Mapela Provincial Road to the newly constructed school. The new access road will be a two-lane single carriage way road (one lane in each direction), approximately 700 m long and 7m wide. Refer to Figure 2 for the location of the access roads.

New access roads will be either asphalt or paving block surfaced.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

Refer to Figure 2 which indicates the position of the new access roads.

## 6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

Refer to Appendix A for the site plan.

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by Department of Water Affairs);
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

## 7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Refer to Appendix B for colour photographs of the site.

## 8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

Refer to Appendix C for the proposed layout of the relocated Seritarita Secondary School. Once detailed illustrations are available, this will be submitted to the Limpopo Department of Economic Development, Environment and Tourism (LEDET).

**9. ACTIVITY MOTIVATION**

**9(a) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R 60 000 000.00
What is the expected yearly income that will be generated by or as a result of the activity?	R0
Once constructed, the relocated Seritarita Secondary School will not generate any additional income other than what is currently generated by the school.	
Will the activity contribute to service infrastructure?	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Is the activity a public amenity?	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
How many new employment opportunities will be created in the development phase of the activity?	~ 80
What is the expected value of the employment opportunities during the development phase?	R6 million
What percentage of this will accrue to previously disadvantaged individuals?	50%
How many permanent new employment opportunities will be created during the operational phase of the activity?	20 (for 5 to 8 years)
What is the expected current value of the employment opportunities during the first 10 years?	R8 million
What percentage of this will accrue to previously disadvantaged individuals?	100%

**9(b) Need and desirability of the activity**

Motivate and explain the need and desirability of the activity (including demand for the activity):

Seritarita Secondary School is located in the Skimming and Leruleng Villages and adjacent to Mogalakwena Mine Mogalakwena Mine’s South Pit. The open pit is impacting the school due to its close proximity to the opencast operations (the school is currently ~800m from the centre of the pit). Due the proximity of the South Pit to the school the learners and teachers are exposed to health and safety risks associated with dust, noise, fly rock and tremors linked to blasting and open pit mining activities. While there is a blast management plan in place that includes informing the school of the blasting schedule and scheduling blasting times for after school activities, blasting activities have resulted in fly rocks landing on the school premises. These impacts not only pose a health and safety risk to learners and teachers, but also impact on the learning environment and day-to-day activities at the school.

AAP is planning to extend the South Pit (Cut 11) which will place Seritarita Secondary School within the regulated blast zone (within 500m). This will increase the already existing health and safety risks to the school, including learners, teachers and parents.

Although AAP is planning to relocate both Skimming and Leruleng communities (who are also affected by the mining activities), this overall relocation of the communities is only planned around 2027/2028. As the planned extension of the South Pit (Cut 11) will place Seritarita Secondary School within the regulated blast zone (within 500m), AAP is proposing to temporarily relocate the school outside of the blast zone, but still within the Skimming and Leruleng communities. The school will be permanently relocated with the overall Skimming and Leruleng



Villages' relocation which is planned by AAP in 2027/2028 regarding which, AAP is currently conducting studies (relocation surveys, planning, engagements with communities etc.) to also determine, among other things, the permanent relocation site.

In summary, the reason for establishing a temporary school facility is two-fold, namely:

- Timing. Due to the health and safety risks posed by current and future operations at the South Pit it is necessary to relocate the school within the next 12 months and have the new school operational by June 2024. This can only be achieved by establishing a temporary facility.
- Relocation of Skimming and Leruleng Villages. Due to future expansion of the Mogalakwena Mine it will be necessary to permanently relocate the villages of Skimming and Leruleng. AAP have initiated the engagement process with the communities of Skimming and Leruleng communities and relocation is planned for 2027/2028. The communities have accepted and agreed to the need to be relocated. A permanent school will be established as part of the relocation process. However, the current school will need to be relocated in the interim to address the health and safety risks posed by the current and future mining operations at the South Pit.

<b>NEED:</b>			
i.	Was the relevant municipality involved in the application?	<b>YES</b>	NO
ii.	Does the proposed land use fall within the municipal Integrated Development Plan?	<b>YES</b>	NO
iii.	According to the Mogalakwena Local Municipality's Integrated Development Plan (IDP): 2021/2022, access to social facilities plays an important role in local development. The spatial system in Mogalakwena is well established and has developed over many years. The relocation of the Seritarita Secondary School to a safer location in relation to the Mogalakwena Mine's development, will ensure that learners continue to obtain safe access to education facilities.		

<b>DESIRABILITY:</b>			
i.	Does the proposed land use / development fit the surrounding area?	<b>YES</b>	NO
ii.	Does the proposed land use / development conform to the relevant structure plans, Spatial development Framework, Land Use Management Scheme, and planning visions for the area?	<b>YES</b>	NO
iii.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	<b>YES</b>	NO
iv.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
v.	Will the proposed land use / development impact on the sense of place?	YES	<b>NO</b>
vi.	Will the proposed land use / development set a precedent?	YES	<b>NO</b>
vii.	Will any person's rights be affected by the proposed land use / development?	YES	<b>NO</b>
viii.	Will the proposed land use / development compromise the "urban edge"?	YES	<b>NO</b>

ix.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.
-----	--

<b>BENEFITS:</b>			
i.	Will the land use / development have any benefits for society in general?	<b>YES</b>	NO
ii.	<p>The benefits of the temporary relocation of the Seritarita Secondary School to society in general include the following:</p> <ul style="list-style-type: none"> <li>• Ensuring the safety of learners, teachers and other employees at the school</li> <li>• Creation of both temporary job opportunities</li> <li>• Ensuring that Mogalakwena Mine can continue with operations in a safe manner</li> <li>• Establishment of a safe, modern, well-equipped temporary school facility</li> <li>• The relocated school will comply to the Department of Education's most recent norms and standards which will include equipped laboratories, training workshops, a library, improved sanitation and sports facilities</li> </ul>		
iii.	Will the land use / development have any benefits for the local communities where it will be located?	<b>YES</b>	NO
iv.	<p>The location of the temporary school is closer to and more accessible to the communities located to the north-west, west, and south of Skimming and Leruleng. Travel time for these learners would therefore be lower. Given that 30% of learners walk to school and 30% come from the surrounding villages, this would represent a social benefit. For the learners located to east of the site the travel distances would be greater. However, the Mogalakwena Mine provides these learners with school transport. This benefit can be enhanced if the facilities associated with the temporary school are not dismantled after the villages of Skimming and Leruleng have been resettled.</p> <p>Learners from local and neighbouring villages will be able to benefit from the school's facilities, such as the school hall could be utilised for community meetings and functions, sporting facilities (all by permission from the school management) can utilise these facilities. Local companies will be able to participate in procurement opportunities in the maintenance, security provision for the school as well as nutrition programmes of the school.</p>		

## 10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

**Table 4: Applicable legislation**

Title of legislation, policy or guideline:	Relevance to project	Administering authority:	Date:
National Environmental Management Act (Act No. 107 of 1998) (NEMA)	Listed activities in terms of the NEMA Environmental Impact Assessment (EIA) Regulations (2014, as amended) are triggered, and therefore a Basic Assessment environmental authorisation process need to be followed.	Limpopo Department of Economic Development, Environment and Tourism (LEDET)	29 January 1999
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA)	The NEM:BA is the most recent legislation pertaining to alien invasive species. In August 2014 the list of Alien Invasive Species was published in terms of NEM:BA. The legislation call for the removal and/or control of alien invasive plant species (Category 1 species).	Department of Forestry, Fisheries and the Environment	7 January 2005
National Environmental Management Waste Act (Act No. 59 of 2008) (NEM:WA)	The Waste Act details the law regulating waste management in order to protect the environment. The development will be subject to this Act in terms of the disposal of waste.	Department of Forestry, Fisheries and the Environment	1 July 2009
National Environmental Management: Protected Areas Act (Act No. 57 of 2003) (NEM:PAA)	The Act ensures the protection and conservation of ecologically viable areas characteristic of South Africa's biological diversity and its natural areas in order to create a national register of all national, provincial and local protected areas. No protected areas were identified at the site or in close proximity to the site.	Department of Forestry, Fisheries and the Environment	1 November 2004

Title of legislation, policy or guideline:	Relevance to project	Administering authority:	Date:
National Environmental Management: Air Quality Act (Act No. 39 of 2004) (NEM:AQA)	This Act intends to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.	Department of Forestry, Fisheries and the Environment	
National Forest Act (Act No. 84 of 1998)	Plant species that are nationally protected under this Act were found at the proposed Seritarita Secondary School relocation site. Should a plant that is protected by this Act need to be removed for the development, a permit will have to be obtained.	Department of Forestry, Fisheries and the Environment	1 April 1999
National Water Act (Act No. 36 of 1998) (NWA)	A Water Use Licence Application will be submitted in terms of the National Water Act (Act No. 36 of 1998) (NWA) as Section 21 water uses are triggered.	Department of Water and Sanitation	1 October 1998
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	<p>This Act ensures control over the utilisation of the natural agricultural resources of South Africa.</p> <p>This project will need to ensure that (in terms of the Act) that the following are adhered to:</p> <ul style="list-style-type: none"> <li>• Conservation and protection of the soil layer</li> </ul>	Department of Agriculture, Land Reform and Rural Development	27 April 1983

Title of legislation, policy or guideline:	Relevance to project	Administering authority:	Date:
	<ul style="list-style-type: none"> <li>• Protection of natural water resources</li> <li>• Conservation of vegetation cover and the removal of alien/exotic/invaser plant species</li> </ul>		
National Heritage Resources Act (Act No. 25 of 1999)	The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha). Potential impact on cultural heritage, paleontological or archaeological resources through excavation activities or disturbance will need to be monitored. Permits may be required per the National Heritage Resources Act (Act No. 25 of 1999).	South African Heritage Resources Agency (SAHRA)	1 April 2000
Limpopo Environmental Management Act (Act No. 7 of 2003) (LEMA)	It was confirmed by the biodiversity specialist that no protected plant species as per LEMA were recorded on site, and none are likely to occur due to the level of ongoing and historic disturbances present.	Limpopo Department of Economic Development, Environment and Tourism (LEDET)	1 May 2004

## 11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### 11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
36 m <sup>3</sup>	

If yes, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

Construction waste will be stored in 6m<sup>3</sup> skips on site and will be removed by an approved waste management company from site and be disposed of at the Mogalakwena Local Municipality's Mokopane Landfill site.

Where will the construction solid waste be disposed of (describe)?

At Mogalakwena Local Municipality's Mokopane Landfill site.

Will the activity produce solid waste during its operational phase?

YES	NO
36 m <sup>3</sup>	

If yes, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

General waste generated when the school is operational will be stored in 6m<sup>3</sup> skips at the school, from where it will be taken by an approved waste management company to the Mogalakwena Local Municipality's Mokopane Landfill site.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Waste will be disposed of at Mogalakwena Local Municipality's Mokopane Landfill site.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the department to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO
-----	----

If yes, inform the department and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
-----	----

If yes, then the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.

### 11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
<del>m<sup>3</sup></del>	
YES	NO

If yes, what estimated quantity will be produced per month?

Will the activity produce any effluent that will be treated and/or disposed of on site?

If yes, the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.

There is no bulk municipality sewage reticulation in the vicinity of the project site. As municipal sanitation is not present in the area, an underground concrete pre-digestion chamber is planned with a sewer treatment plant installed. The estimated sewage flow at a day school is 37 litres/person/day. A sewage treatment plant (waste water treatment plant) will be installed to collect and treat sewage from the school facilities. The resultant grey water which shall be fit for use from the treatment process shall be used for irrigation of the school landscaped areas and sports field. Certificate of Compliance (COC) shall be issued by accredited installers upon the installation of the waste water treatment plant. A maintenance plan shall also be in place for the plant.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
-----	----

If yes, provide the particulars of the facility:

Facility name:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Treated effluent from the sewage treatment plant will be used to irrigate the school grounds and gardens.

### 11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
-----	----

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

No emissions, other than that of exhaust emissions and dust fallout associated with vegetation clearing and heavy vehicles driving on gravel roads during the construction phase, will be released into the atmosphere. In addition, when the generator is used as backup power, there will be the release of diesel emissions.

### 11(d) Generation of noise

Will the activity generate noise?

YES	NO
-----	----

If yes, is it controlled by any legislation of any sphere of government?

YES	NO
-----	----

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the noise in terms of type and level:

Standard construction noise (i.e. heavy vehicles and site work) will occur during the construction phase only. During operations, minimal noise will be generated by the normal school activities within the Seritarita Secondary School.

## 12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	<b>groundwater</b>	river, stream, dam or lake	other	the activity will not use water
-----------	-------------	--------------------	----------------------------	-------	---------------------------------

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

1 000 000.00 Litres

Does the activity require a water use permit from the Department of Water Affairs?

**YES**

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

Each learner is expected to require 25-30 litres of water per day, therefore, the estimated daily demand is approximately 40 000ℓ/day for 25 days in a month (school days and weekend sport/events at the school) (1 000 000ℓ per month).

A Water Use Licence Application will be submitted. The proposed project has been lodged on the Department of Water and Sanitation's Electronic Water Use Licence Application and Authorisation System (e-WULAAS) website (reference number WU29763).

## 13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

AAP will install a grid tied solar photovoltaic installation (80kW) with battery backup to provide back-up power for essential services and buildings during loadshedding. The monocrystalline PV solar panels will be placed on the roofing structures for the buildings.

All fixtures fittings and accessories will be the latest energy efficient type. Energy efficient motors (for pump, etc.) will be specified.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

AAP will install a grid tied solar photovoltaic installation with battery backup to provide additional power for power for essential services and buildings during loadshedding.

An emergency diesel back-up generator will be installed, should Eskom or solar power supply be insufficient.

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

### Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases



please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.   
(e.g. A):

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

Must a building plan be submitted to the local authority?

Locality map: An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

Refer to Figure 1 for a locality map, and to Figure 4 for a map indicating location alternatives. The Site Plan is shown in Appendix A.

## 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Alternative S1:

<b>Flat</b>	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
-------------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

### Topography:

The topography of the relocation area is flat and very gently sloping downwards towards the northeast. Coinciding with the topography, surface drainage across the site is directed towards the northeast, but then towards the north at the site's northern extent. The site elevation ranges from ±1076 mamsl at its southern corner to ±1066 mamsl at its northern corner (Geostratum, 2023).

### Climate:

The proposed relocation site is situated at approximately 1 064 m above sea level and at a latitude of 23°59' S. The long term climate records at Mokopane (~25 km south-east from the relocation site) is representative of the general area which experiences a local steppe climate, classified as BSh by Köppen and Geiger. The average maximum

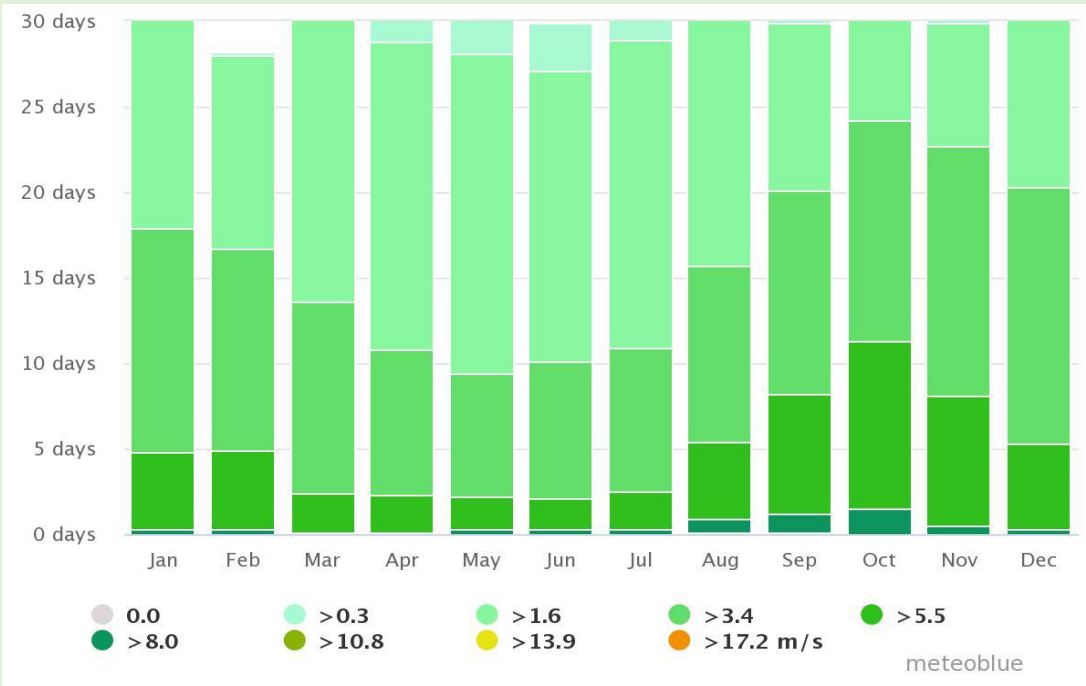
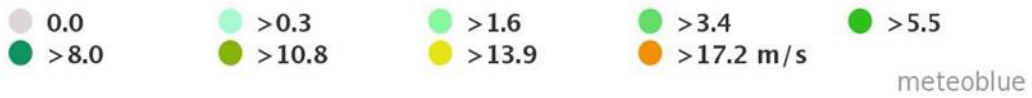
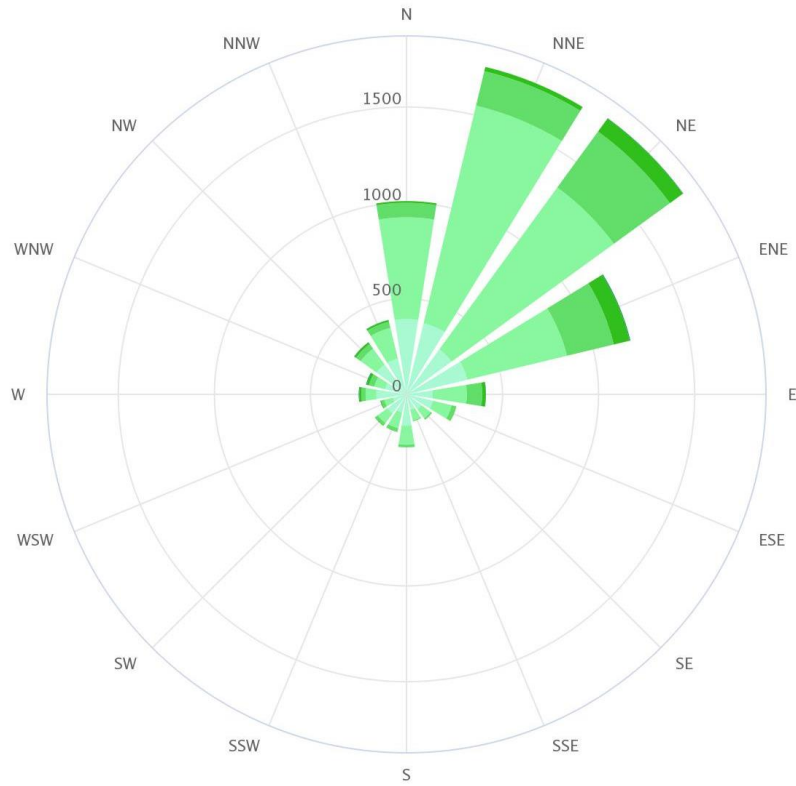
temperature is 25.5 °C and the average minimum temperature is 12.9 °C. The average annual rainfall is 550 mm which occurs mainly in the summer months between November and March. The average monthly temperatures and rainfall at Mokopane are listed in Table 5 (uMoya, 2023).

**Table 5: Average monthly temperatures and rainfall at Mokopane (uMoya, 2023)**

Month	Monthly average			
	Maximum (°C)	Daily mean (°C)	Minimum (°C)	Rainfall (mm)
Jan	27.2	22.1	17.0	115
Feb	28.0	22.5	17.0	74
Mar	26.9	21.4	15.8	65
Apr	24.4	18.7	13.0	35
May	22.7	16.5	10.2	10
Jun	20.3	14.0	7.7	4
Jul	20.1	13.5	6.9	3
Aug	23.8	16.4	9.0	3
Sep	27.4	19.7	11.9	12
Oct	28.8	21.5	14.2	41
Nov	28.1	21.8	15.5	86
Dec	27.9	22.4	16.8	102
<b>Annual avg</b>	25.5	19.2	12.9	550

The hourly wind speed and direction data are presented in the annual windrose in Figure 5. A windrose illustrates the frequency of hourly wind from the 16 cardinal wind directions, with wind indicated from the direction it blows, i.e. easterly winds blow from the east. It also illustrates the frequency of average hourly wind speed in six wind speed classes in m/s (uMoya, 2023).

The predominant wind directions are north-northeast (NNE) to north-northeasterly (NNE) with some winds from the north (N). Generally winds in these directions are light with the majority of hourly winds less than 3.4 m/s, see wind frequency vs wind speed in Figure 5. Stronger winds reaching more than 8 m/s do occur, mostly from the NNE and northeast (NE). Winds rarely occur from the other wind sectors. The observed wind directions appear to be largely influenced by topography which varies for higher elevations of up to 1 750 m in the east, and decreasing leading to elevations of 1 000 m in the west. The fall towards the west induces a natural drainage from east to west (uMoya, 2023).



**Figure 5: Annual windrose at Mokopane (top) with wind speed in m/s and frequency bands of 250 hours, and wind frequency (bottom) (uMoya, 2023)**

### Air Quality:

SLR Consulting South Africa (Pty) Ltd (SLR) is currently appointed to undertake Dust Fallout Monitoring at Mogalakwena Mine Complex and the surrounding villages according to the ASTM D1739 method and to assess compliance with the national dust fall standards. The dust fallout monitoring network includes 20 sampling sites in the residential areas surrounding the Mogalakwena Mine, and 14 on-site sampling sites (Non residential). Sampling sites relevant to the relocation site is listed in Table 6 and illustrated in Figure 6 (SLR, 2022).

**Table 6: Air Quality monitoring sites relevant to the relocation site (SLR, 2022)**

Monitoring site	Residential/Industrial	Coordinates	Description
P46	Non-residential	23°59'4.07"S 28°53'54.20"E	Mine
ZWNDS	Non-residential	23°59'4.07"S 28°53'54.20"E	Mine
LANG	Residential	23°58'35.72"S 28°53'0.87"E	Skimming
KUB	Residential	23°59'0.91"S 28°52'53.27"E	Skimming
LANGA	Residential	23°59'32.85"S 28°52'15.94"E	Skimming
MATSO	Residential	24°0'17.67"S 28°52'26.83"E	Hans 2
NYATLO	Residential	23°58'53.76"S 28°51'8.11"E	Parakisi

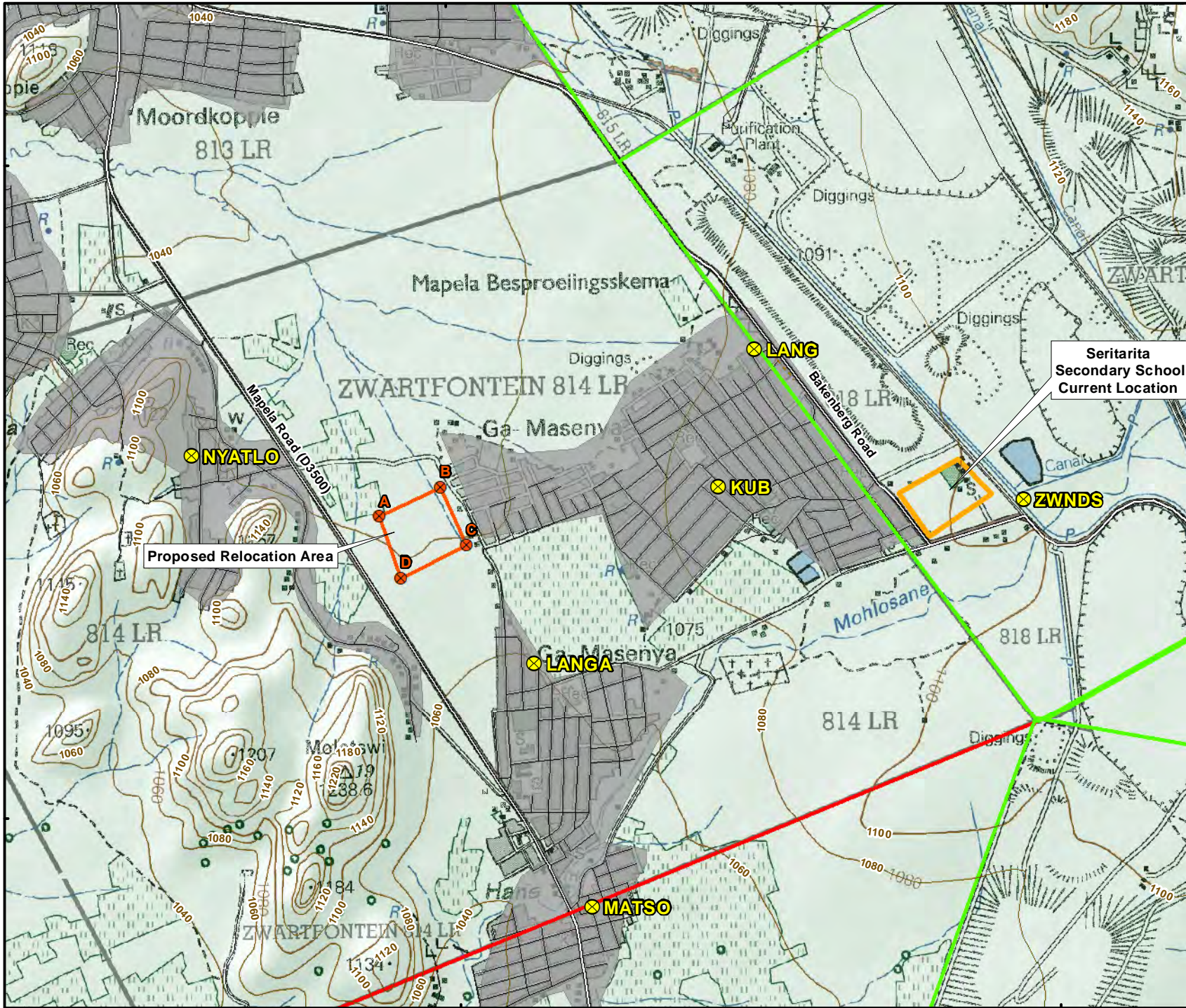
On 01 November 2013, the legislated standards for dust fallout were promulgated in the National Environmental Management: Air Quality Act (NEM:AQA) National Dust Control Regulations (GNR 827 of November 2013). This Regulation provides the acceptable/allowable dust fallout rates for both residential and non-residential areas (Table 7). The relevant authorities should be informed if the permitted fallout rates and frequencies are exceeded (SLR, 2022).

**Table 7: National Standards for Acceptable Dust Fallout Rates (Residential and Non-residential) (SLR, 2022)**

Restriction areas	Dust fallout in mg/m <sup>2</sup> /day for 30 days average	Permitted frequency for exceedance of the dust fallout rate
Residential	D < 600	Two within a year, not sequential months
Non-residential	600 < D < 1 200	Two within a year, not sequential months

Dust fallout measured in the 10 months at the residential monitoring points was consistently well below the limit value of the national standard of 600 mg/m<sup>2</sup>/day. There were, however, exceedances of the limit value in October 2022, where dust fallout rates of 3 522 mg/m<sup>2</sup>/day were measured at Langa in Skimming. The monitoring point at Langa is downwind of Mogalakwena Mine under the prevailing northeasterly winds. The exceedance in October 2022 has been attributed to a localised source of dust. (uMoya, 2023).



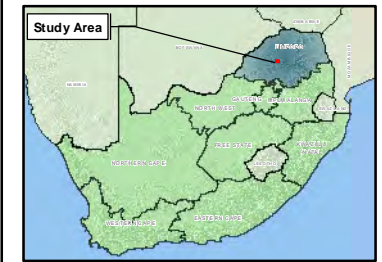


### Legend

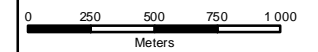
- Proposed Relocation Area
- ✕ Dust Fallout Monitoring Points
- Seritarita Secondary School
- Mining Rights Area
- Surface Rights Area

- Tertiary Road
- Street/Road
- Track
- Contours

- Built Up Areas
- Cultivated Land



SCALE: 1: 30 000



TITLE:

Figure 6: Current dust fallout monitoring points

CLIENT:

**Anglo American Platinum,  
Rustenburg Platinum Mine,  
Mogalakwena Mine**

DATE: June 2023	PROJECT: MOKGALAKWENA
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DRAWN: THURLOW MAPPING	APPROVED: KP
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MAP Dust_Fall_Out_Points_Rev1.mxd	REV: 2
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Alta van Dyk Environmental Consultants cc (2011/059764/23)

VAT No: 4630259952  
Tel: 012 940 9457  
Fax: 086 634 3967  
Cel: 061 403 2462



Projection: Transverse Mercator CM: 29 Datum: WGS 84  
Source: OSM Vector 2023  
Image: ESRI World Imagery Layer  
Topo: NSI TOP-OSG, Mosaic: latest\_Editions\_Jan-2017.ecw  
Ins: ESRI Data and Maps

SIZE:  
A4



## 2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline		2.6 Plain	<b>x</b>
2.2 Plateau		2.7 Undulating plain / low hills	
2.3 Side slope of hill/mountain		2.8 Dune	
2.4 Closed valley		2.9 Seafront	
2.5 Open valley			

## 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES	<b>NO</b>	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	<b>NO</b>	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	<b>NO</b>	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	<b>NO</b>	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	<b>NO</b>	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	<b>NO</b>	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	<b>NO</b>	YES	NO	YES	NO
An area sensitive to erosion	YES	<b>NO</b>	YES	NO	YES	NO

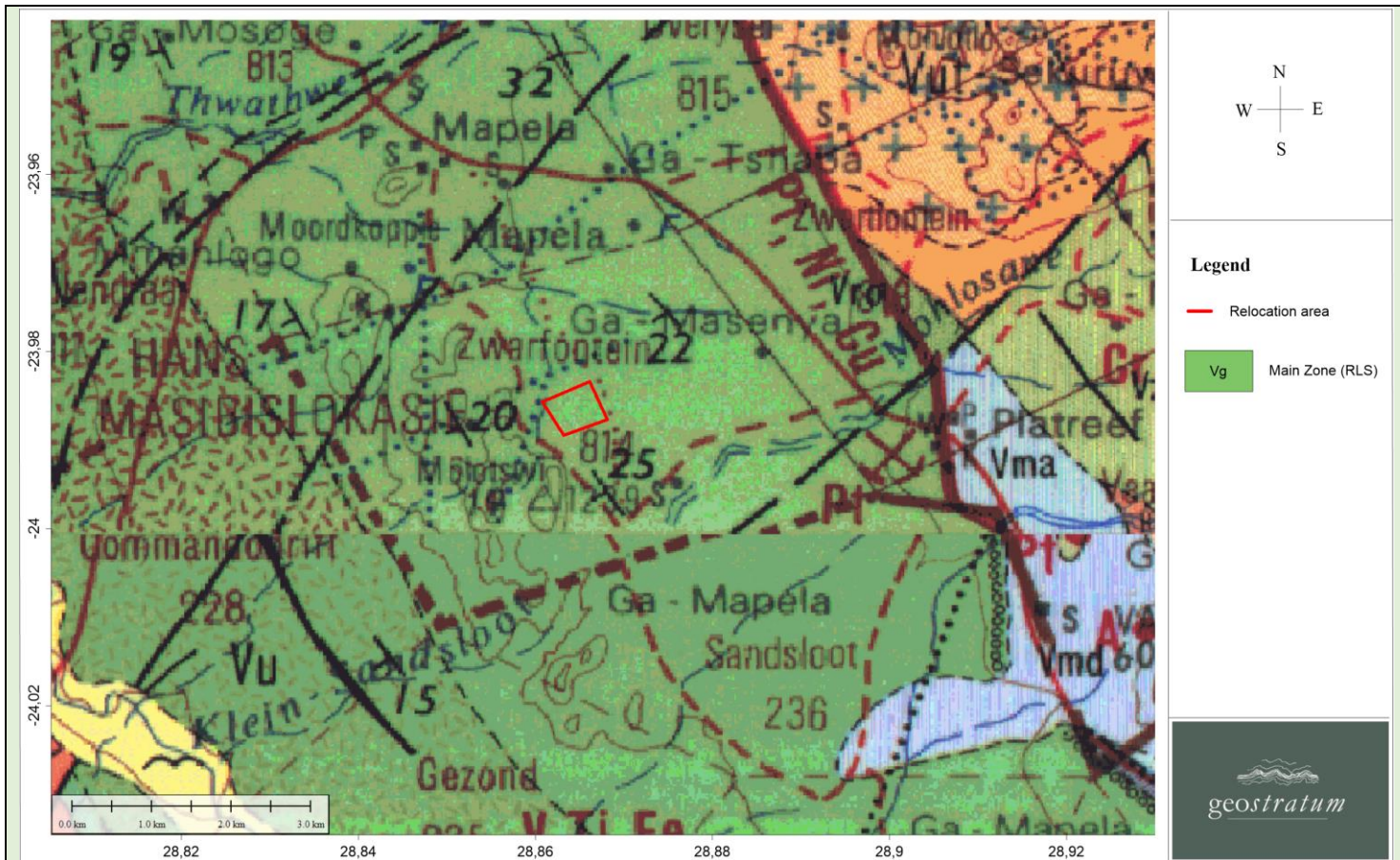
If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

### Groundwater:

Information for groundwater was obtained from the groundwater report (Geostratum, 2023 – Appendix D1).

### Geological setting

According to the 1:250 000 Geological Map – 2328 Pietersburg, the relocation area is underlain by mafic igneous rocks of the Rustenburg Layered Suite (RLS) of the Bushveld Igneous Complex (Figure 7). The local geology belongs to the Main Zone of the RLS and is composed of gabbro, norite and anorthosite. No significant geological structures intersect the relocation area.



**Figure 7: Geological map 2328 Pietersburg and 2428 Nylstroom (Geostratum, 2023)**

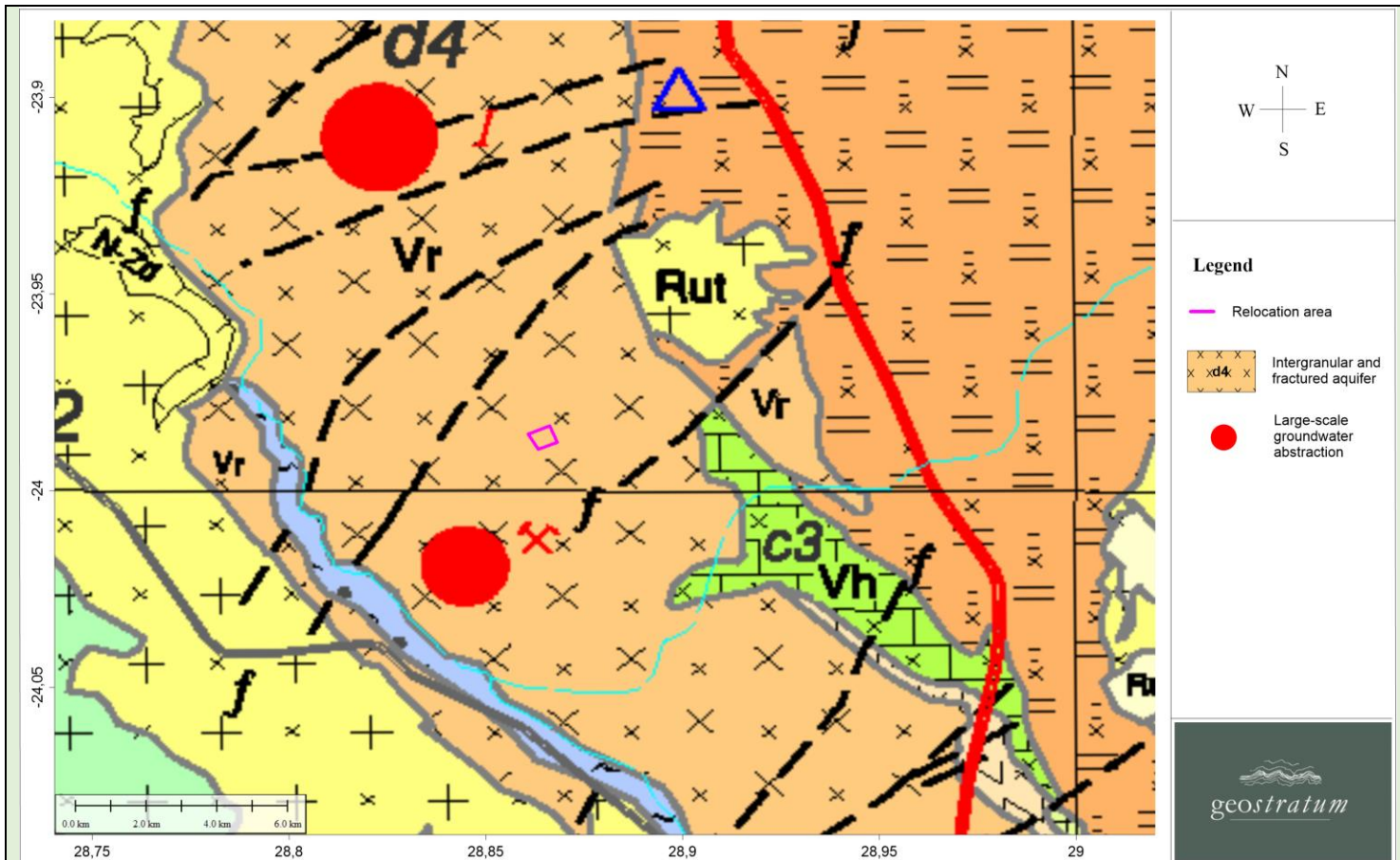
### Hydrogeological setting

According to the 1:500 000 Hydrogeological Map – 2326 Polokwane, the hydrogeology of the relocation area is characterised by generally high-yielding fractured and intergranular aquifers, with median borehole yields of 2-5 l/s (Figure 8). The regional aquifer is exploited for large-scale irrigation and mining activities. The overall groundwater potential of the RLS is generally good with 38% of successful boreholes said to yield more than 2 l/s (Geostratum, 2023).

In the Mokopane area, groundwater tends to occur in deep weathered and/or fractured basins and these are noted to be very productive aquifers due to their high permeability. Fault zones are also known to produce high yielding boreholes. The groundwater level in the RLS is usually less than 30 meters below ground level (Geostratum, 2023).

The quality of the groundwater in the region is moderate to poor with EC values ranging between 8.6 and 1041 mS/m, with a harmonic mean of ~108 mS/m. Nitrate and nitrite are the main contaminants of concern, with 21% of the analyses included by the authors showing concentrations exceeding the maximum allowable limit (N >20 mg/l). In most cases, elevated nitrogen was found in the vicinity of rural villages. Groundwater in the RLS aquifers is mainly exploited for livestock watering, irrigation, domestic purposes and mining activities (Geostratum, 2023).





**Figure 8: Hydrogeological Map – 2326 Polokwane**

Quaternary catchment

Data from relevant hydrogeological databases including, the National Groundwater Archive (NGA) was obtained from the Department of Water and Sanitation. The relocation area resides within quaternary catchment A61G (Table 8).

**Table 8: Summarized Quaternary Catchment Information (Geostratum, 2023)**

Quaternary Catchment	Total Area (km <sup>2</sup> )	Recharge (mm/a)	Current use (L/s)	Rainfall (mm/a)	Average groundwater level (mbgl)
A61G	926.7	17.3	64.1	584.8	16.2

Hydrocensus

During the hydrocensus, 11 potentially active boreholes were located in the vicinity of the relocation area. Details of these boreholes are presented in Table 9. Their locations relative to the relocation area are shown in Figure 9. Due to restricted access, the groundwater use and status of most of the identified localities could not be determined. From the information attained, groundwater seems to be used as domestic and drinking water as well as for garden irrigation.

**Table 9: Hydrocensus boreholes (Geostratum, 2023)**

Borehole ID	Geographic, WGS84		Water Use	Reservoir
	Latitude	Longitude		
BH1	-23.997156	28.870586	Domestic, drinking and garden irrigation	2x 5000L tanks

BH2	-23.98373	28.87268	Domestic and drinking	2000L tank
BH3	-23.9827	28.866453	Domestic and drinking	~ 5000L tank
BH4	-23.982741	28.866499	Domestic and drinking	~ 5000L tank
BH5	-23.986109	28.868844	Domestic and drinking	~ 5000L tank
BH6	-23.985422	28.869107	Domestic and drinking	~ 5000L tank
BH7	-23.984118	28.869845	Domestic and drinking	~ 5000L tank
BH8	-23.983162	28.866138	Domestic and drinking	~ 5000L tank
BH9	23.983228	28.866204	Domestic and drinking	~ 5000L tank
BH10	-23.984569	28.872693	Domestic and drinking	~ 5000L tank
BH11	-23.983939	28.870832	Domestic and drinking	~ 5000L tank
BH11	-23.983939	28.870832	Domestic and drinking	~ 5000L tank



**Figure 9: Spatial distribution of site layout and hydrocensus boreholes (Geostratum, 2023)**

Aquifer classification

According to Parsons (1995), aquifer classification is based on the aquifer characteristics and the non-technical and water-supply considerations.

The aquifer in at the relocation area was classified in terms of the Aquifer System Management Classes (Table 10). Based

on the desktop study, there is essentially one aquifer underlying the relocation area: weathered and/or fractured aquifer.

**Table 10: Aquifer Classification Summary**

Aquifer or aquitard	Type	Classification (after Parsons, 1995)
Weathered and/or fractured aquifer	Intergranular and fractured	Sole source aquifer - An aquifer which is used to supply 50% or more of domestic water for a given area, and for which there are no reasonable available alternative sources should the aquifer be impacted upon or depleted. Aquifer yields and natural water quality are immaterial.

The aquifer system and the aquifer vulnerability are assigned a value as defined in Table 11 below. Through multiplying the aquifer system value by the vulnerability value, the Groundwater Quality Management (GQM) index is determined. Based on this value, the level of protective action that must be upheld is recommended. The values shaded in blue indicate the rating of the aquifer in the study area. According to the aquifer vulnerability assessment, a level of protection that ensures non-degradation of the aquifer system is recommended.

**Table 11: Aquifer classification and vulnerability assessment**

Aquifer system		Aquifer vulnerability	
Management qualification		Classification	
Class	Points	Class	Points
Sole Source Aquifer System	6	High	3
Major Aquifer System	4	Medium	2
Minor Aquifer System	2	Low	1
Non-Aquifer System	0		
Special Aquifer System	0-6		
GQM INDEX		Level of protection	
<1		Limited Protection	
1 to 3		Low Level Protection	
3 to 6		Medium Level Protection	
6 to 10		High Level Protection	
>10		Strictly Non-Degradation	

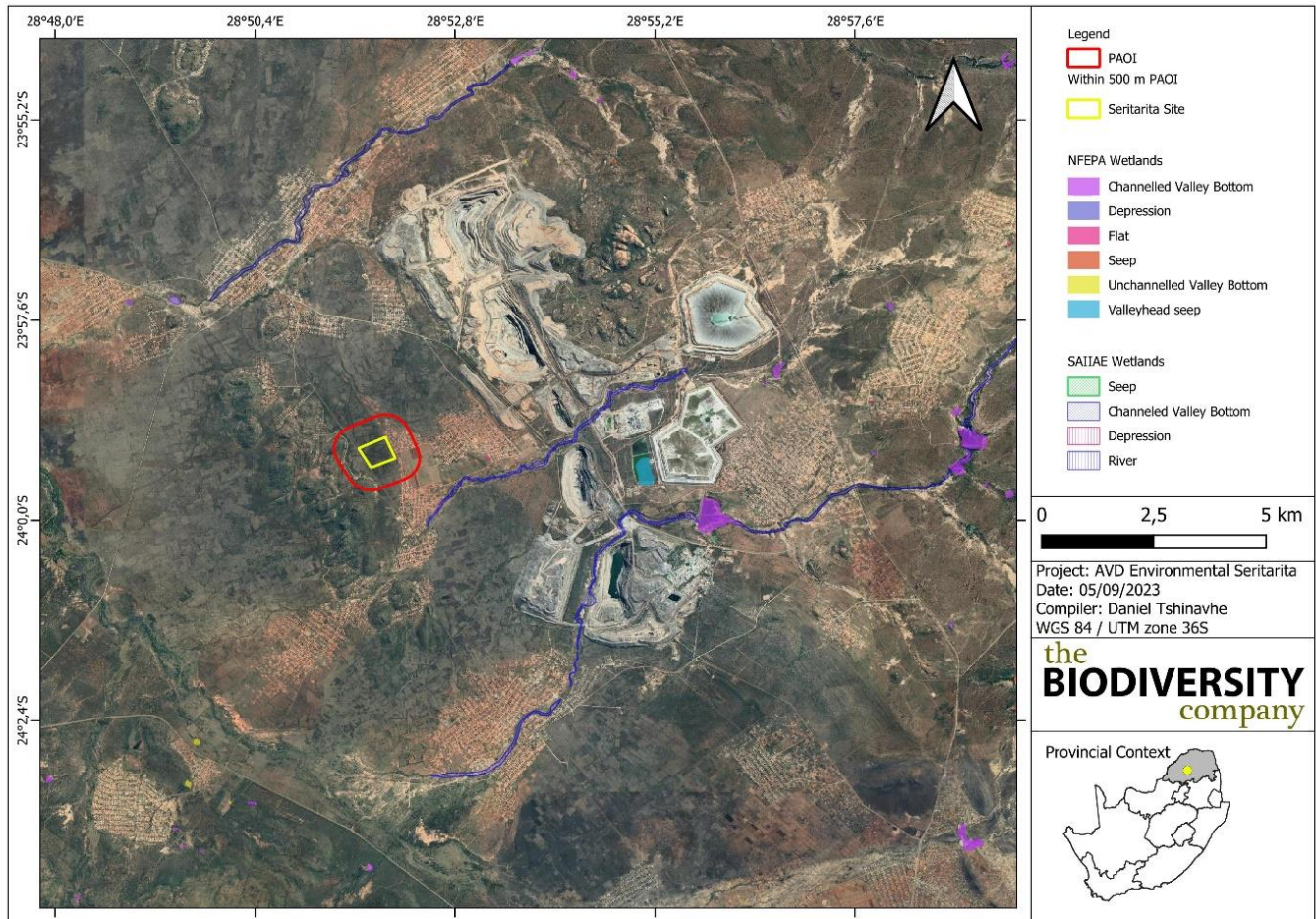
**Wetlands and watercourses:**

A freshwater assessment was undertaken by The Biodiversity Company (TBC). Refer to Appendix D2 for the full report.

The National Freshwater Ecosystem Priority Areas (NFEPA) wetland dataset is a collaborative project between multiple stakeholders such as the Council for Scientific and Industrial Research (CSIR), the Water Research Commission (WRC) and South African National Biodiversity Institute (SANBI). The objective of the project was to identify priority areas to conserve and protect as well as to promote sustainable water use, thereby assisting in



meeting the biodiversity goals for freshwater habitats set out in all levels of government. No NFEPA wetland was identified within the project area (TBC3, 2023). Refer to Figure 10.



**Figure 10: NFEPA wetlands identified around the proposed project area (TBC3, 2023)**

During the survey, no wetlands/watercourses/drainage lines were identified and delineated within the project area of influence. No wetland indicators were identified within the regulated area, this refers to the absence of hydrophytes and signs of soil wetness, with the identified soil forms representative of dryland conditions. The absence of these indicators from the area leads to the conclusion that no wetlands or watercourses were identified within the regulated area (TBC3, 2023).

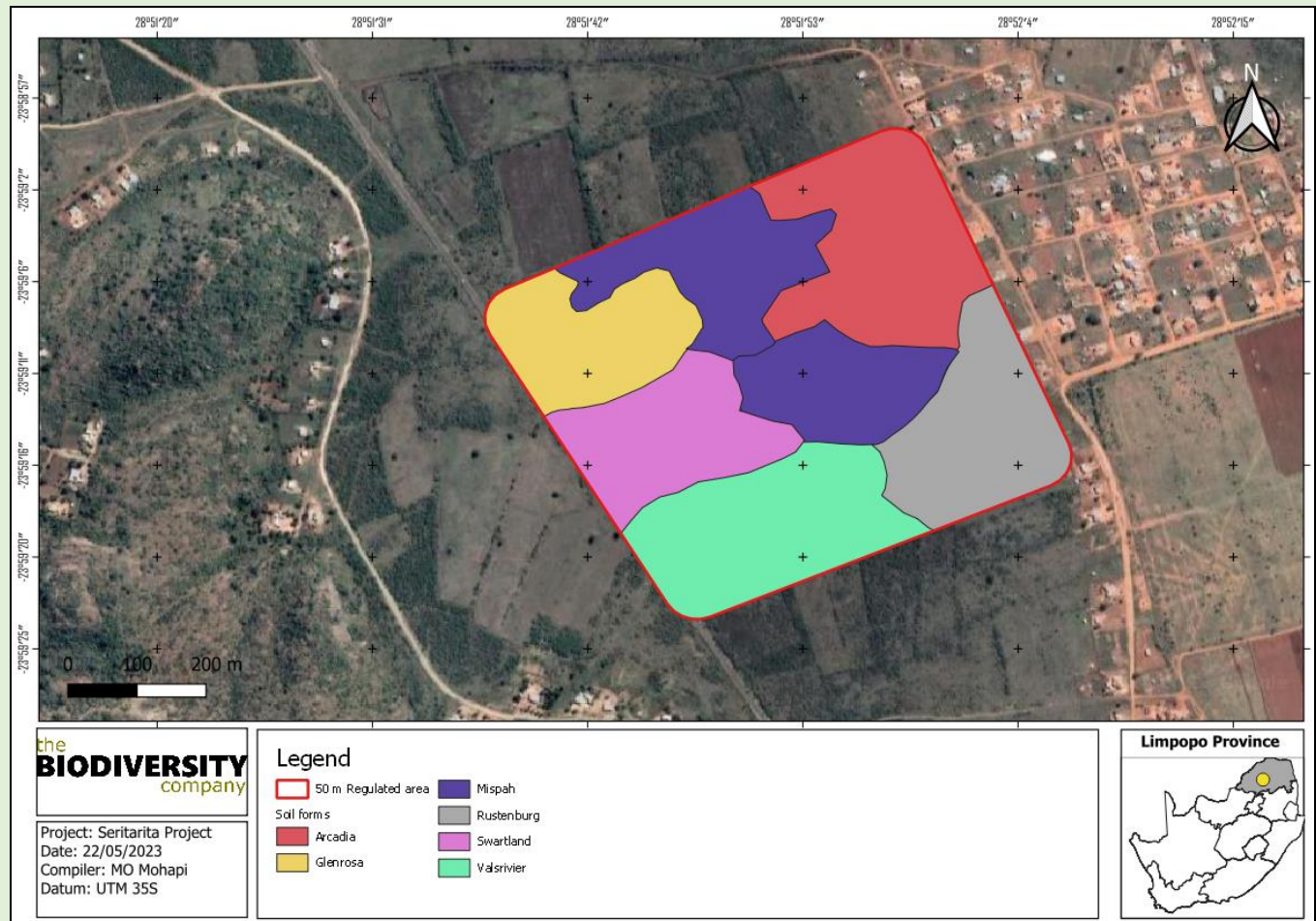
### **Soils:**

A soil and agricultural potential assessment was undertaken by The Biodiversity Company (TBC). Refer to Appendix D3 for the full report.

During the site assessment various soil forms were identified. Refer to Figure 11.

The Arcadia soil form consist of a vertic topsoil on top of a lithic subsurface horizon below. The Rustenburg soil forms have a vertic topsoil horizon merging into an impermeable restrictive substratum below. Vertic horizons are characterised with swelling and shrinking properties resulting in root pruning. These soils are usually difficult to work with for most cropping practices. The Swartland soil from consists of an orthic topsoil on top of a pedocutanic

subsurface horizon underlain with a lithic horizon below. The Valsrivier soil form has an orthic topsoil horizon on top of a thick pedocutanic horizon below. Soils associated with pedocutanic subsurface horizons are mostly referred as duplex soils due to their high clay contents which are usually in a ratio of 1:2 with the upper laying topsoil horizon. The Glenrosa soil form consists of an orthic topsoil horizon underlain with a lithic horizon below. The Mispah soil form has an orthic topsoil horizon merging into an impermeable substratum layer. The Glenrosa and Mispah soil forms are characterised with shallow profiles due to limited profile depths.



**Figure 11: Soil form distribution within the project area (TBC1, 2023)**

**Agricultural Potential**

Agricultural potential is determined by a combination of soil, terrain and climate features. Land capability classes reflect the most intensive long-term use of land under rain-fed conditions.


The land capability is determined by the physical features of the landscape including the soils present. The land potential or agricultural potential is determined by combining the land capability results and the climate capability for the region.

**Climate Capability**

The climatic capability has been determined by means of the Smith (2006) methodology, of which the first step includes determining the climate capability of the region by means of the Mean Annual Precipitation (MAP) and annual Class A pan (potential evaporation) (Table 12).

**Table 12: Climatic capability (step 1) (TBC1, 2023)**



Central Sandy Bushveld region				
Climatic Capability Class	Limitation Rating	Description	MAP: Class A pan Class	Applicability to site
C1	None to Slight	Local climate is favourable for good yields for a wide range of adapted crops throughout the year.	0.75-1.00	
C2	Slight	Local climate is favourable for a wide range of adapted crops and a year-round growing season. Moisture stress and lower temperature increase risk and decrease yields relative to C1.	0.50-0.75	
C3	Slight to Moderate	Slightly restricted growing season due to the occurrence of low temperatures and frost. Good yield potential for a moderate range of adapted crops.	0.47-0.50	
C4	Moderate	Moderately restricted growing season due to the occurrence of low temperatures and severe frost. Good yield potential for a moderate range of adapted crops but planting date options more limited than C3.	0.44-0.47	
C5	Moderate to Severe	Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Suitable crops at risk of some yield loss.	0.41-0.44	
C6	Severe	Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Limited suitable crops that frequently experience yield loss.	0.38-0.41	
C7	Severe to Very Severe	Severely restricted choice of crops due to heat and moisture stress.	0.34-0.38	
C8	Very Severe	Very severely restricted choice of crops due to heat and moisture stress. Suitable crops at high risk of yield loss.	0.30-0.34	

According to Smith (2006) (TBC1, 2023), the climatic capability of a region is only refined past the first step if the climatic capability is determined to be between climatic capability 1 and 6. Given the fact that the climatic capability has been determined to be “C8” for the project area, no further steps will be taken to refine the climate capability. The climatic capability has been determined as ‘Very severely restricted choice of crops due to heat and moisture stress. Suitable crops at high risk of yield loss.

#### Land capability

The land capability was determined by using the guidelines described in “The farming handbook” (Smith, 2006) (TBC1, 2023). The delineated soil forms were clipped into the five different slope classes (0-2%, 2-4%, 4-6%, 6-8% and >8%) to determine the land capability of each soil form. Accordingly, the most sensitive soil forms associated with the project area are restricted to land capability class 4 and 6.

**Table 13: Land capability for the soils within the project area (TBC1, 2023)**

Land Capability Class	Definition of Class	Conservation Need	Use-Suitability	Land Capability Group	Sensitivity
4	Severe limitations. Low arable potential. High erosion hazard.	Intensive conservation practice.	Long-term leys (75%)	Arable	Moderate
6	Limitations preclude cultivation. Suitable for	Protection measures for establishment e.g. sod-	Veld, pasture and afforestation.	Non-arable	Low

	perennial vegetation.	seeding.			
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**Agricultural Potential**

The methodology in regard to the calculations of the relevant land potential levels are illustrated in Table 13 and Table 14. From the land capability class 4 and 6, the agricultural potential levels have been determined by means of the Guy and Smith (1998) methodology. Land capability IV and VI have been reduced to a land potential levels L6 (i.e., Swartland and Valsrivier) and L7 (Arcadia, Rensburg and Glenrosa and Mispah) due to climatic limitations.

**Table 14: Land potential from climate capability vs land capability (Guy and Smith, 1998) (TBC1, 2023)**

Land Capability Class	Climatic Capability Class							
	C1	C2	C3	C4	C5	C6	C7	C8
LC1	L1	L1	L2	L2	L3	L3	L4	L4
LC2	L1	L2	L2	L3	L3	L4	L4	L5
LC3	L2	L2	L2	L2	L4	L4	L5	L6
LC4	L2	L3	L3	L4	L4	L5	L5	L6*
LC5	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei
LC6	L4	L4	L5	L5	L5	L6	L6	L7*
LC7	L5	L5	L6	L6	L7	L7	L7	L8
LC8	L6	L6	L7	L7	L8	L8	L8	L8

\*Land potential level applicable to climatic and land capability

**Table 15: Agricultural potential for the soils within the project area (Guy and Smith, 1998) (TBC1, 2023)**

Agricultural Potential	Description of Agricultural Potential Class	Sensitivity
6	<b>Very restricted potential:</b> Regular and/or severe limitations due to soil, slope, temperatures or rainfall. Non-arable.	Low
7	<b>Low potential.</b> Severe limitations due to soil, slope, temperatures or rainfall. Non-arable.	Low
Disturbed	N/A	None

**4. GROUNDCOVER**

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	<b>Natural veld with scattered aliens<sup>E</sup></b>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
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Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil
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If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

### **Terrestrial Biodiversity:**

A terrestrial biodiversity assessment was undertaken by The Biodiversity Company. Refer to Appendix D4 for the full report.

#### **Desktop Spatial Assessment**

Table 16 has been produced as a result of the spatial data collected and analysed (as provided by various sources such as the national and provincial environmental authorities and SANBI). It presents a summative breakdown of the ecological boundaries considered and the associated relevance that each has to the region or project area.

**Table 16: Summary of the spatial relevance of the project area to local ecologically important landscape features (TBC2, 2023)**

Desktop Information Considered	Relevance	Reasoning
Provincial Conservation Plan: Limpopo Conservation Plan Version 2	Yes	The project area mainly overlaps with areas classified as No Natural Remaining (NNR)
NBA 2018: Ecosystem Threat Status	Yes	Project area overlaps with a ‘Least Concern’ ecosystem
NBA 2018: Ecosystem Protection Level	Yes	Project area overlaps with a ‘Poorly Protected’ ecosystem
Protected and Conservation Areas (SAPAD & SACAD)	No	No Areas occur within 5 km from the project area
National Protected Areas Expansion Strategy (NPAES)	No	The project area does not fall close to any areas.
Important Bird and Biodiversity Areas (IBA)	No	The project area is located over 9.6 km from the closest IBA
Strategic Water Source Areas (SWSA)	No	The project area does not overlap with a SWSA
National Freshwater Ecosystem Priority Areas (NFEPA)	No	No FEPA systems occur within 500 m of the project area
South African Inventory of Inland Aquatic Ecosystems (SAIIAE)	No	No systems occur within 500 m of the project area
Vegetation Type	Yes	Makhado Sweet Bushveld

#### **Desktop Vegetation Baseline**

The Vegetation of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006) was used to identify the vegetation type that would have occurred under natural or pre-anthropogenically altered conditions. Furthermore, the Plants of Southern Africa (POSA) database was accessed to compile a list of expected flora species within the proposed development area and surrounding landscape. The Red List of South African Plants (Raimondo *et al.*, 2009; SANBI, 2020) was utilized to provide the most current national conservation status of flora species.

The project area is situated within the savanna biome. The savanna vegetation of South Africa represents the southernmost extension of the most widespread biome in Africa (Mucina & Rutherford, 2006). Major macroclimatic traits that characterise the savanna biome include:



(a) seasonal precipitation; and

(b) (sub) tropical thermal regime with no or usually low incidence of frost (Mucina & Rutherford, 2006).

Most savanna vegetation communities are characterised by a herbaceous layer dominated by grasses and a discontinuous to sometimes very open tree layer (Mucina & Rutherford, 2006).

The savanna biome is the largest biome in South Africa, extending throughout the east and north-eastern areas of the country. Savannas are characterised by dominant grass layers, over-topped by a discontinuous, but distinct woody plant layer. At a structural level, Africa's savannas can be broadly categorised as either fine-leaved (microphyllous) savannas or broad-leaved savannas. Fine-leaved savannas typically occur on nutrient rich soils and are dominated by microphyllous woody plants of the Mimosaceae family and a generally dense herbaceous layer (Scholes & Walker, 1993).

On a fine-scale vegetation type, the project area overlaps with one vegetation type: the Makhado Sweet Bushveld (SVcb20).

Important Taxa for Makhado Sweet Bushveld (d=dominant)

Small Trees: *Senegalia erubescens* (d), *Vachellia gerrardii* (d), *S. mellifera* subsp. *detinens* (d), *A. rehmanniana* (d), *Boscia albitrunca* (d), *Combretum apiculatum* (d), *Acacia tortilis* subsp. *heteracantha*, *Terminalia sericea*.

Tall Shrubs: *Commiphora pyracanthoides*, *Dichrostachys cinerea*, *Grewia flava*, *Hibiscus calyphyllus*, *Lycium shawii*, *Rhigozum obovatum*.

Low Shrubs: *Barleria lancifolia*, *Hirpicium bechuanense*, *Indigofera polioles*, *Melhaniania rehmannii*, *Pechuel-Loeschea leubnitziae*.

Graminoids: *Antheophora pubescens* (d), *Aristida stipitata* subsp. *graciliflora* (d), *Cenchrus ciliaris* (d), *Enneapogon scoparius* (d), *Brachiaria nigropedata*, *Eragrostis trichophora*, *Panicum coloratum*, *P. maximum*, *Schmidtia pappophoroides*, *Urochloa mosambicensis*.

Herbs: *Chamaecrista absus*, *Corbichonia decumbens*, *Geigeria acaulis*, *Harpagophytum procumbens* subsp. *transvaalense*, *Heliotropium steudneri*, *Hemizygia elliotii*, *Hermbstaedtia odorata*, *Leucas sexdentata*, *Osteospermum muricatum*, *Tephrosia purpurea* subsp. *leptostachya*.

Endemic Taxon Herb: *Dicliptera minor* subsp. *pratis-manna*.

Plant Species of Conservation Concern

Based on the Plants of Southern Africa (BODATSA-POSA, 2022) database, 474 plant species have the potential to occur in the project area and its surroundings. Of these 474 plant species, one species is listed as being Species of Conservation Concern (SCC), with a low likelihood of occurrence due to a lack of mountainous habitat (Table 17).

**Table 17: Threatened flora species that may occur within the project area (TBC2, 2023)**

Family	Taxon	Author	IUCN	Ecology	Habitat
Passifloraceae	<i>Adenia fruticosa</i> subsp. <i>fruticosa</i>	Burt Davy	NT	Indigenous; Endemic	Arid woodland, rocky outcrops, slopes and sandy flats, on dolomite, granite and quartzite, 800-1400 m.

Desktop Fauna Assessment

The desktop fauna assessment was based on the species expected according to the environmental screening assessment and addressed in Table 18 . These listed features are identified for the area, with only two (2) medium sensitivity animal species expected for the area. The probability of occurrence for this fauna is low, this is attributed to disturbed (and modified) habitat. No sensitive plant species are expected for the area.

**Table 18: Animal and plant species theme listed sensitivity features (TBC2, 2023)**

Species name	Common name	Sensitivity	Likelihood of Occurrence
<b>Animal Species Theme</b>			
<i>Crocidura maquassiensis</i>	Maquassie Musk Shrew	Medium	Low
<i>Dasymys robertsii</i>	African Marsh Rat	Medium	Low
<b>Plant Species Theme</b>			
None	-	-	-

#### Biodiversity Field Survey

The habitat has been classified as disturbed Bushveld. The term "disturbed Bushveld" refers to the condition of the Makhado Sweet Bushveld found in the area and the degree (or extent) of disturbance to the structure and composition of the habitat type. This disturbance is attributed to human activities in the area, specifically vegetation clearing for subsistence agriculture. This clearing required the removal of plant/tree species representative of the vegetation type, with the vegetation type now representing cleared areas (vegetation loss) and the encroachment of invasive species.

#### Habitat Description

The habitat found within the entire project area, is regarded as disturbed Bushveld. Refer to Figure 12. Historic land clearing, for most likely, agricultural purposes, has affected the soil layer and vegetation present. This habitat is in a disturbed state. Recovery to a climax state is not possible due to ongoing disturbances. The encroachment of *Dichrostachys cinerea* is a result of past disturbances. It affects not only the amount and type of biodiversity found within the site but also the ecosystem processes at the site. Both browsing and grazing animals are severely affected by the encroached areas limiting the amount of forage available to herbivores. The habitat sensitivity can be seen in Figure 13 and the species which were found in the project area are in Table 19.

*The project area being historically cleared and subsequently disturbed is no longer a viable portion of Makhado Sweet Bushveld.*



**Figure 12: Examples of disturbed bushveld habitat found within project area (TBC2, 2023)**

**Table 19: Plant species found within the project area (TBC2, 2023)**

Species name	Ecology	IUCN status	Nationally Protected Tree
<i>Agelanthus natalitius</i>	Indigenous		
<i>Aristida adscensionis</i>	Indigenous	LC	
<i>Aristida bipartita</i>	Indigenous	LC	
<i>Aspilia pluriseta subsp. pluriseta</i>	Indigenous	LC	
<i>Bidens pilosa</i>	Not indigenous; Naturalised		
<i>Bothriochloa insculpta</i>	Indigenous	LC	
<i>Commelina eckloniana</i>	Indigenous	LC	
<i>Cucumis zeyheri</i>	Indigenous	LC	
<i>Cynodon dactylon</i>	Indigenous	LC	
<i>Cyperus congestus</i>	Indigenous	LC	
<i>Cyperus spp.</i>			
<i>Digitaria eriantha</i>	Indigenous	LC	
<i>Diospyros lycioides</i>	Indigenous		
<i>Echinochloa colona</i>	Indigenous	LC	
<i>Ehretia rigida</i>	Indigenous		
<i>Enneapogon cenchroides</i>	Indigenous	LC	
<i>Eragrostis curvula</i>	Indigenous	LC	
<i>Fingerhuthia africana</i>	Indigenous	LC	
<i>Grewia flava</i>	Indigenous	LC	
<i>Grewia flavescens</i>	Indigenous	LC	
<i>Gymnosporia buxifolia</i>	Indigenous	LC	
<i>Hibiscus trionum</i>	Not indigenous; Naturalised		
<i>Indigostrum costatum subsp. macrum</i>	Indigenous	LC	
<i>Indigofera spp.</i>			
<i>Ipomoea coscinosperma</i>	Indigenous	LC	

Species name	Ecology	IUCN status	Nationally Protected Tree
<i>Jamesbrittenia micrantha</i>	Indigenous	LC	
<i>Lantana rugosa</i>	Indigenous	LC	
<i>Maerua angolensis</i>	Indigenous		
<i>Melia azedarach</i>	Not indigenous; Naturalised; Invasive	NE	
<i>Monsonia angustifolia</i>	Indigenous	LC	
<i>Panicum maximum</i>	Indigenous	LC	
<i>Peltophorum africanum</i>	Indigenous	LC	
<i>Pentarrhinum insipidum</i>	Indigenous	LC	
<i>Rhynchosia spp.</i>			
<i>Salvia reflexa</i>	Not indigenous; Naturalised; Invasive		
<i>Sclerocarya birrea subsp. caffra</i>	Indigenous	LC	<b>X</b>
<i>Searsia leptodictya</i>	Indigenous	LC	
<i>Searsia pyroides</i>	Indigenous		
<i>Senecio consanguineus</i>	Indigenous	LC	
<i>Sesbania bispinosa var. bispinosa</i>	Not indigenous; Naturalised	NE	
<i>Solanum campylacanthum</i>	Indigenous		
<i>Sorghum versicolor</i>	Indigenous	LC	
<i>Sporobolus pyramidalis</i>	Indigenous	LC	
<i>Syncolostemon pretoriae</i>	Indigenous	LC	
<i>Tagetes minuta</i>	Not indigenous; Naturalised; Invasive		
<i>Triaspis glaucophylla</i>	Indigenous; Endemic	LC	
<i>Vachellia karroo</i>	Indigenous	LC	
<i>Vachellia nilotica</i>	Indigenous		
<i>Vachellia tortilis</i>	Indigenous		
<i>Vernonia fastigiata</i>	Indigenous	LC	



Species name	Ecology	IUCN status	Nationally Protected Tree
<i>Waltheria indica</i>	Indigenous	LC	
<i>Xanthium strumarium</i>	Not indigenous; Naturalised; Invasive		
<i>Zinnia peruviana</i>	Not indigenous; Naturalised; Invasive		
<i>Ziziphus mucronata</i>	Indigenous		

## Species of Conservation Concern

During the field assessment one (1) species of protected tree was observed, *Sclerocarya birrea. subsp. caffra* (Marula). The protected trees observed are protected by the List of Protected Tree Species under the National Forests Act, 1998 (Act No. 84 of 1998), which states that no person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate, or in any other manner acquire or dispose of any protected tree or any product derived from a protected tree, except under a license or exemption granted by the Minister to an applicant and subject to such period and conditions as may be stipulated. Contravention of this declaration is regarded as a first category offence. The locations of the trees recorded are as follows, and is shown in Figure 13.

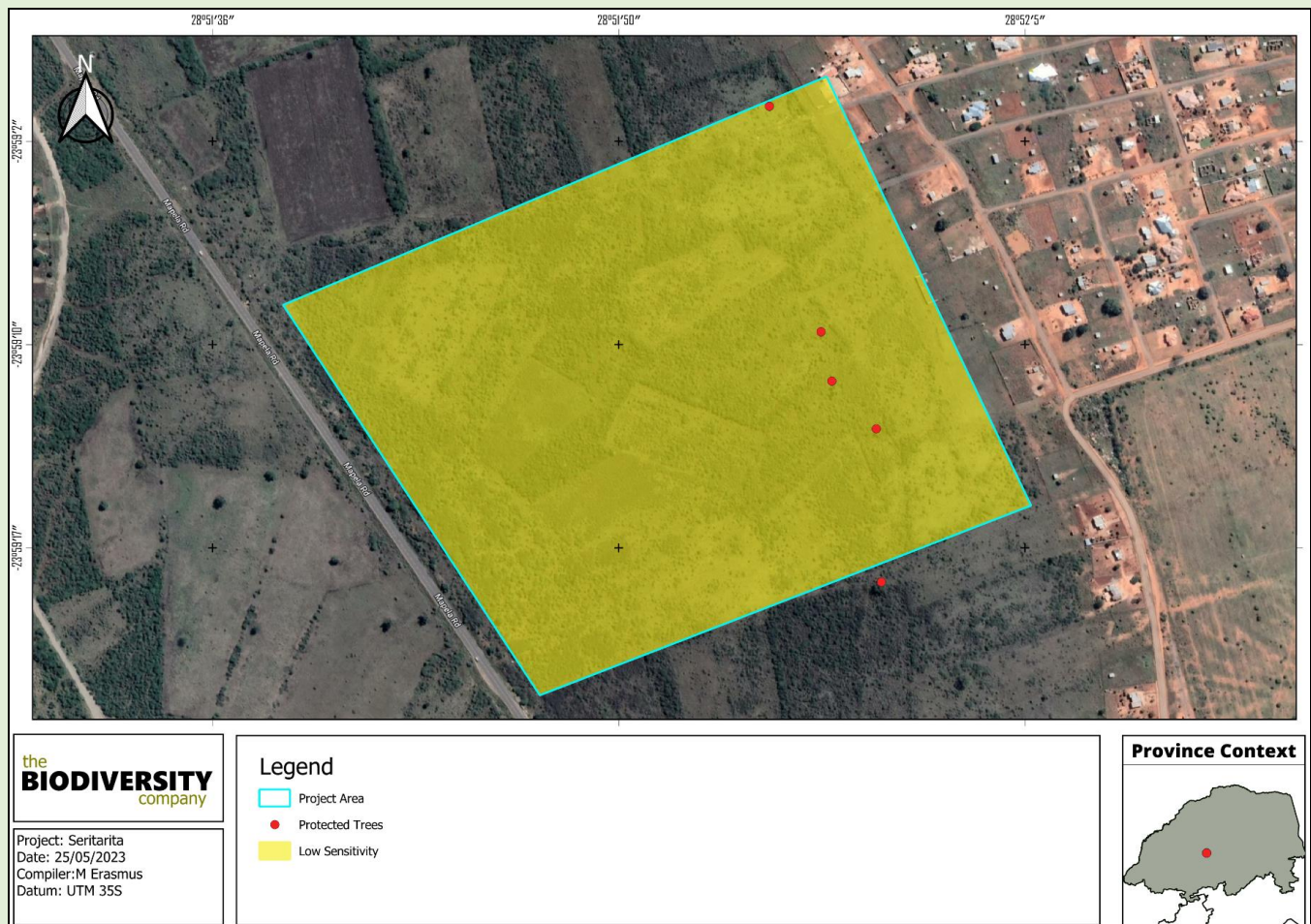
23°59'1.16"S, 28°51'55.74"E

23°59'10.89"S, 28°51'57.96"E

23°59'9.14"S, 28°51'57.57"E

23°59'12.58"S, 28°51'59.53"E

23°59'18.01"S, 28°51'59.71"E



**Figure 13: Map indicating the habitat sensitivity and location of protected trees (Marula) observed in the project area (TBC2, 2023)**

## 5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

<b>5.1 Natural area</b>	<b>x</b>	5.22 School	
<b>5.2 Low density residential</b>	<b>x</b>	5.23 Tertiary education facility	
5.3 Medium density residential		5.24 Church	
5.4 High density residential		5.25 Old age home	
5.5 Medium industrial <sup>AN</sup>		5.26 Museum	
5.6 Office/consulting room		5.27 Historical building	
5.7 Military or police base/station/compound		5.28 Protected Area	
5.8 Spoil heap or slimes dam <sup>A</sup>		5.29 Sewage treatment plant <sup>A</sup>	
5.9 Light industrial		5.30 Train station or shunting yard <sup>N</sup>	
5.10 Heavy industrial <sup>AN</sup>		5.31 Railway line <sup>N</sup>	
5.11 Power station		5.32 Major road (4 lanes or more)	
5.12 Sport facilities		5.33 Airport <sup>N</sup>	
5.13 Golf course		5.34 Harbour	
5.14 Polo fields		5.35 Quarry, sand or borrow pit	
5.15 Filling station <sup>H</sup>		5.36 Hospital/medical centre	
5.16 Landfill or waste treatment site		5.37 River, stream or wetland	
5.17 Plantation		5.38 Nature conservation area	
<b>5.18 Agriculture</b>	<b>x</b>	<b>5.39 Mountain, koppie or ridge</b>	<b>x</b>
5.19 Archaeological site		5.40 Graveyard	
5.20 Quarry, sand or borrow pit		5.41 River, stream or wetland	
5.21 Dam or Reservoir	x	5.42 Other land uses (describe)	

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

Not applicable

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:	
If NO, specify:	

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	
If NO, specify:	

## 6. CULTURAL/HISTORICAL FEATURES

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?

	NO
	NO

If YES, explain:

Not applicable

If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist:

Refer to paragraph below.

Will any building or structure older than 60 years be affected in any way?

	NO
--	----

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

	NO
--	----

### Heritage:

Information for heritage was obtained from Beyond Heritage's Heritage Impact Assessment (2023) (Appendix D5).

### Heritage Resources

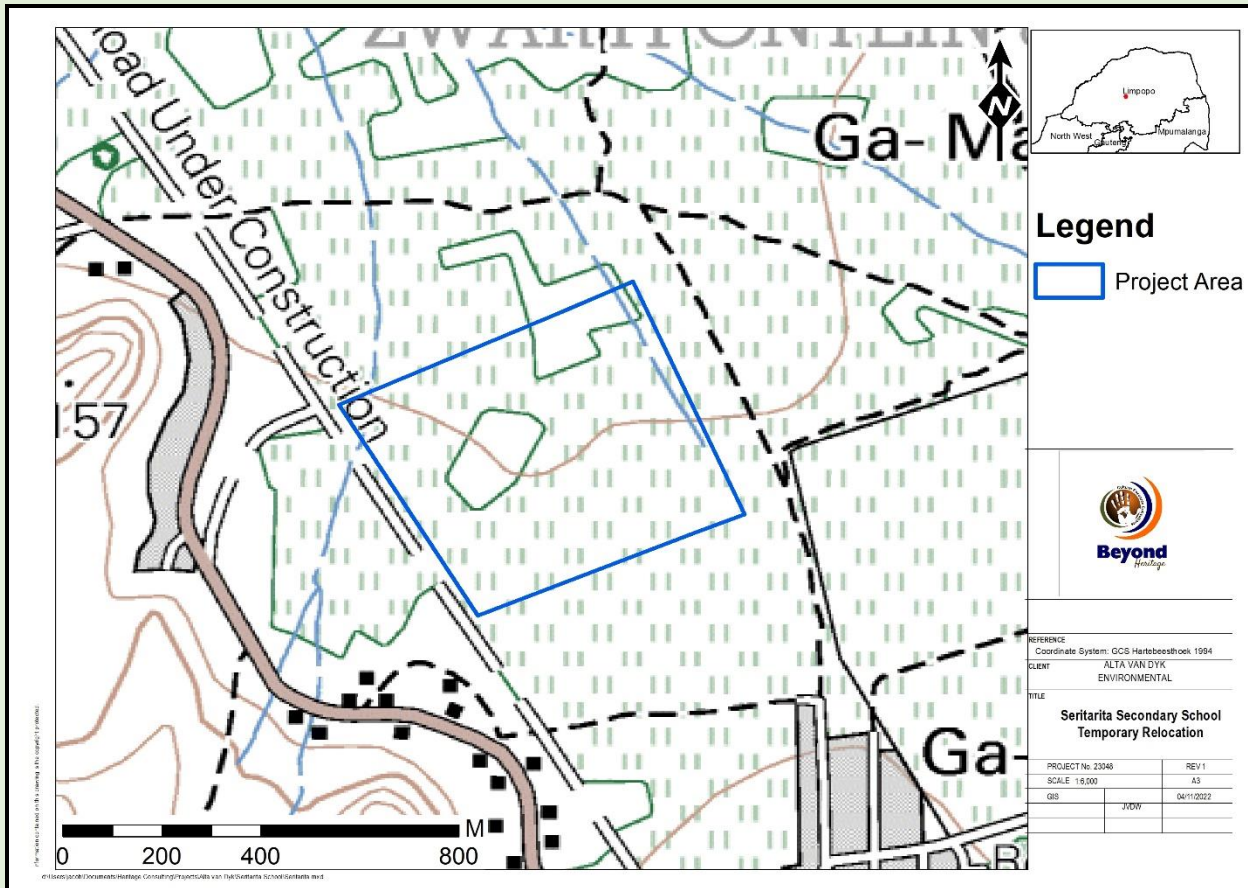
The project area is situated along the Mapela Road and consists of agricultural fields that have been ploughed for the last 60 years. These ploughed areas are clearly visible on areal imagery of the area. As a result of the continued cultivation, pioneer species and more specifically *Dichrostachys cinerea*, known as sicklebush, severely limited accessibility into the study area. Currently, no active agricultural activities are taking place in the project area.

Although the study area is inaccessible due to dense vegetation, it can be inferred from the aerial imagery that the location has experienced ploughing and anthropogenic disturbance in recent history. Additionally, the study area predominantly consists of flat terrain devoid of significant topographical features commonly associated with archaeological or historic settlements, such as pans, rocky outcrops, or hills. These findings suggest, at the very least, a low probability of encountering tangible cultural heritage where the context remains intact. Furthermore, community representatives who actively participated in the primary data collection confirmed, to the best of their knowledge, the absence of any tangible or intangible cultural heritage in the study area as presented to them.

### Cultural Landscape

The study area is in a rural setting and characterised by historic and more recent cultivation. The larger area is

characterised by mining activities. The project footprint has a weakly developed cultural landscape since the majority of anthropogenic interventions relate to cultivation of the site with a road and a few tracks (Figure 14).



**Figure 14: 2004 Topographic map showing the construction of a road running along the western boundary of the project area (Beyond Heritage, 2023)**

**Palaeontology:**

Information for palaeontology was obtained from Beyond Heritage’s Heritage Impact Assessment (2023) (Appendix D5).

According to the South African Heritage Resources Agency (SAHRA) palaeontological sensitivity map, the study area is indicated as of an insignificant nature and no further studies are required (Figure 15).





Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map

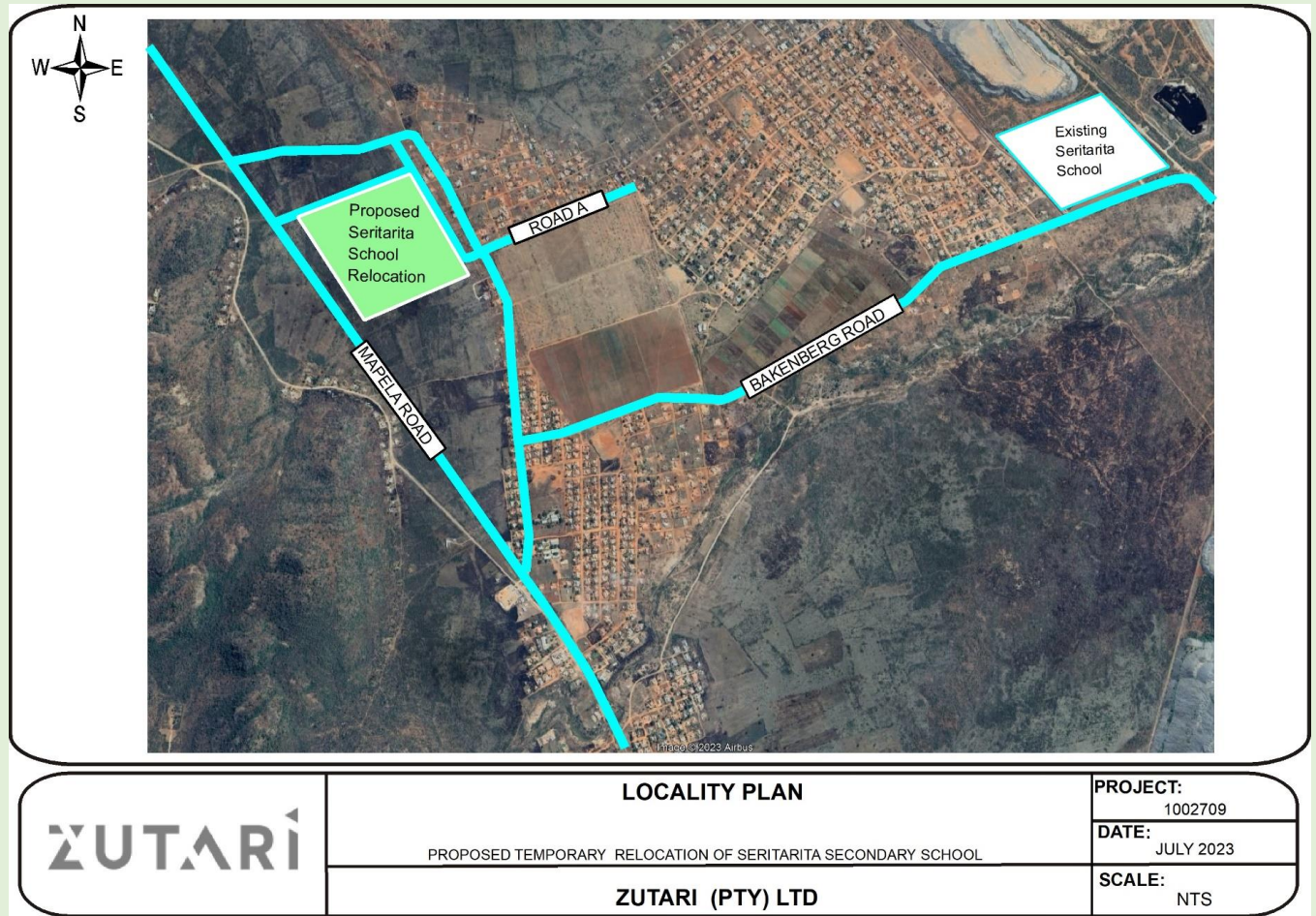
**Figure 15: Paleontological sensitivity of the approximate study area (yellow polygon) as indicated on the SAHRA Palaeontological sensitivity map (Beyond Heritage, 2023)**

**Traffic:**

Information for traffic was obtained from Zutari’s Traffic Impact Assessment (2023) (Appendix D6).

There are several existing roads around the proposed relocation area of the Seritarita Secondary School. Refer to

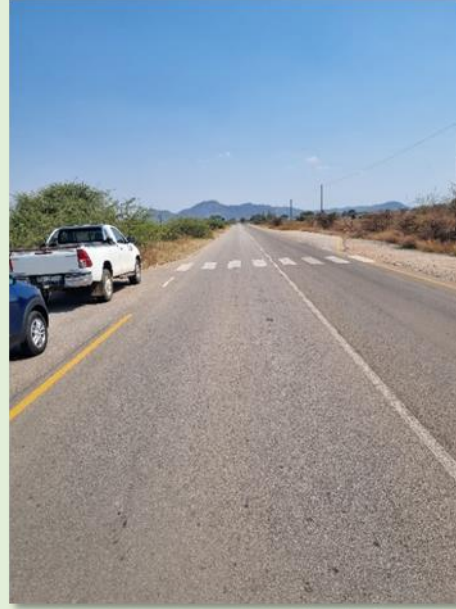
Figure 16.



**Figure 16: Location of roads around relocation area (Zutari, 2023)**

Mapela Road

Mapela Road functions as a class R2 major arterial road aligned in a north-south direction and intersects with R518 southwards through the village of Mapela. It is a 7.0m wide, two-way single carriageway road. There are no sidewalks or street lighting along Mapela Road in the vicinity of the site for the relocation of the school. Mapela Road has paved shoulders along its length. The speed limit on Mapela Road is 80km/h. Refer to Figure 17.



**Figure 17: Photos of Mapela Road (Zutari, 2023)**

Bakenberg Road

Bakenberg Road functions as a class R2 major arterial road aligned in a north - south direction and intersects with Mapela Road and the N11. Bakenberg Road is a 7.0m wide, two-way single carriageway road. There are no sidewalks or street lighting along Bakenberg Road in the vicinity of the school. The road has unpaved shoulders along its length. The speed limit on Mapela road is 60km/h. Bakenberg Road is relatively straight past the site. Refer to Figure 18.

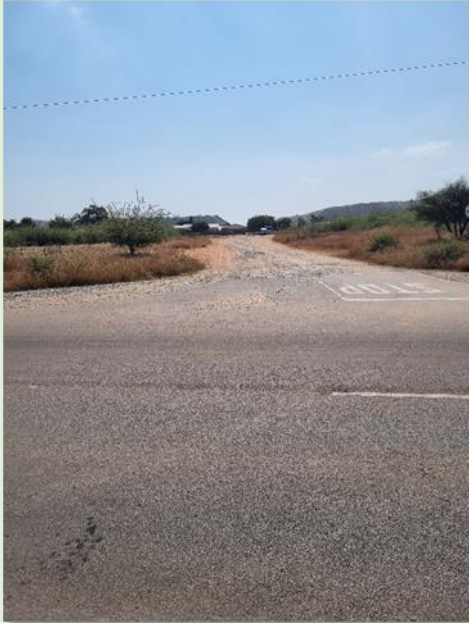


**Figure 18: Bakenberg Road (Zutari, 2023)**

Access Road to the exiting school location

The access road to the existing school intersects with Bakenberg Road at one-way-stop controlled intersection. It is a 2-lane, two-way single carriageway road gravel surfaced road that varies in width. Refer to Figure 19.





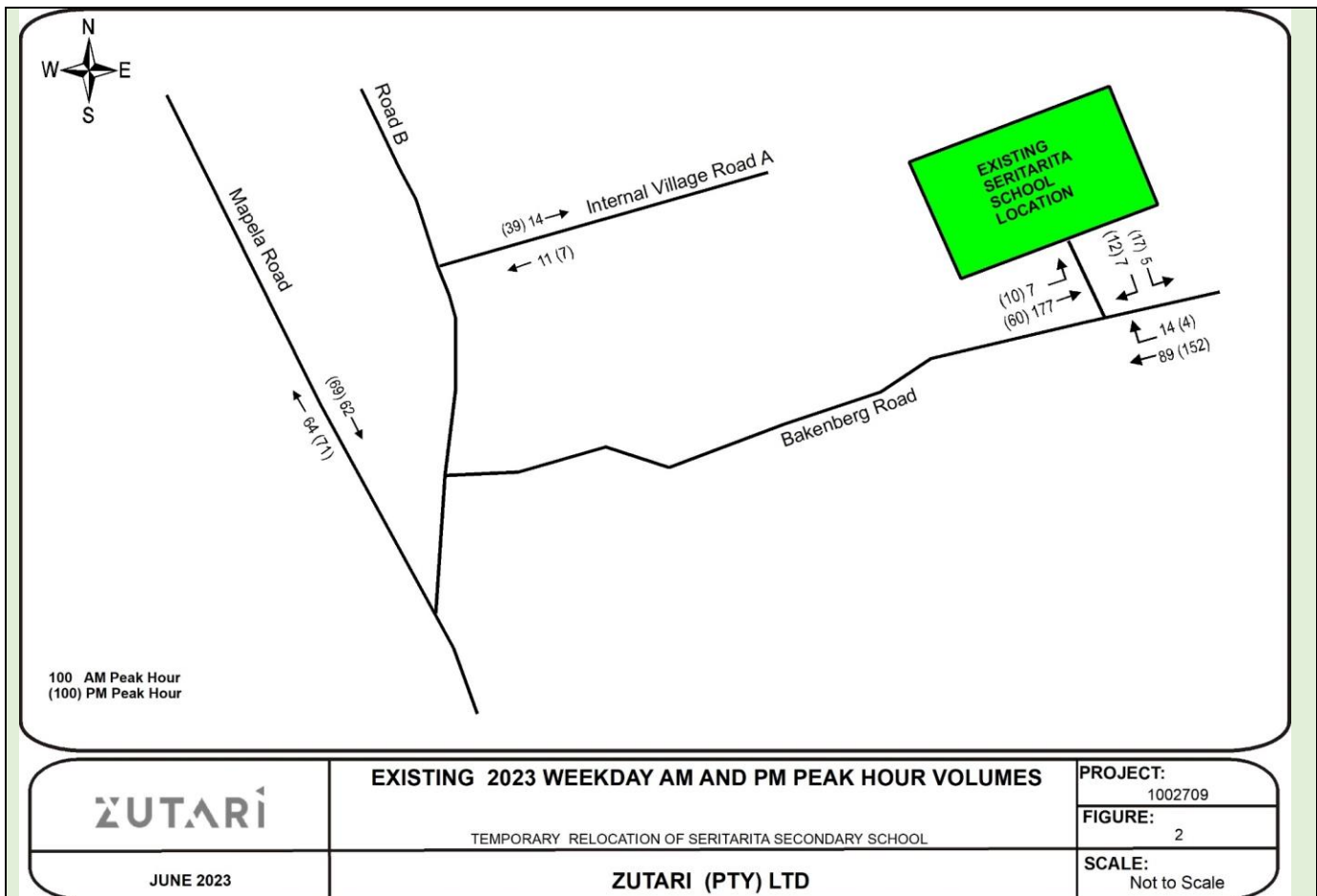
**Figure 19: Access Driveway to Existing School Location**

Traffic counts

The traffic counts were undertaken from 06:00 to 18:00, recording all movements by vehicle type at the three locations. An analysis of the traffic counts revealed the following:

- The AM peak hour occurred from 06:00 to 07:00, and the PM peak hour occurred from 15:15 to 16:15 for the Bakenberg Road / Existing Seritarita Secondary School Access Intersection.
- The AM peak hour occurred from 6:30 to 7:30 and the PM peak hour occurred from 16:15 to 17:15 on the Road B and on Mapela Road.

In the vicinity of the site for the proposed school relocation, the traffic volumes on the internal village road network are low with most of the commuters travelling along Bakenberg Road during the AM and PM peak period. The existing 2023 weekday AM peak hour and PM peak hour traffic volumes on the surrounding road network are shown on Figure 20 below.



**Figure 20: Existing 2023 AM and PM peak hour traffic volumes (Zutari, 2023)**

Existing pedestrian and public transport activity

During the site visit undertaken by Zutari, it was observed that there is considerable pedestrian activity and public transport activity along Bakenberg Road. Bakenberg Road is a public transport route with buses and minibus taxis travelling along the road dropping off and picking up passengers. It was noted that buses and minibuses park outside the school premises during off-peak periods waiting to pick-up passengers when school ends.

There is minor pedestrian activity along Road B and these are either locals or scholars walking to and from the school, home or work. It must be noted that there are no sidewalks on any of the roads within the study area to cater for the pedestrian activity.

School trip generation

The Seritarita Secondary School currently generates both vehicular and pedestrian traffic mainly before school starting and after school finishes. The school currently has 832 learners, 27 educators and 14 staff members. The staff mostly arrive by car, 40% of the learners come from Armoede and Rooibokfontein and are provided transport by Mogalakwena mine using a combination of buses and minibuses. Approximately 30% of the students walk to school and the remaining 30% come from the many surrounding villages and use mainly own arranged mini-bus school transport or private vehicles.

From the traffic count at the existing Seritarita Secondary School Access and Bakenburg Road intersection the school generates 33 veh/h during the AM peak hour and 43 veh/h during the PM peak hour two-way with 21 veh/g



entering the school and 12 leaving the school during the AM peak hour and 14 veh/h entering the school and 29 veh/h leaving the school during the PM peak hour:

### **Socio-economic:**

Socio-economic information was obtained from Tony Barbour Environmental Consulting's (TBEC) Social Impact Assessment (SIA) (2023) (Appendix D7).

The Seritarita Secondary School is located within the Mogalakwena Local Municipality (MLM), which is one of the six local municipalities that make up the Waterberg District Municipality (WDM). The town of Mokopane is the administrative centre of the MLM. The school is located in Ward 13 of the MLM.

### **Demographic overview**

#### **Population**

The population of the MLM in 2016 was 315 814. Of this total, 47.5% were under the age of 18, 45.9% were between 18 and 64, and the remaining 6.6% were 65 and older. The population of Ward 13 in 2011 was 10 283. Of which 46.1% were under the age of 18, 46% were between 18 and 64, and the remaining 7.9 were 65 and older (Table 20). The MLM and Ward 13 therefore have a large young population. This creates challenges in terms of creating employment opportunities.

**Table 20: Population by age group (2016 for MLM and 2011 for Ward 13) (TBEC, 2023)**

	<b>Limpopo Province</b>	<b>Waterberg District Municipality</b>	<b>Mogalakwena Local Municipality</b>	<b>Mogalakwena Ward 13</b>
0-9	23.4%	24.5%	28.6%	27.7%
10-19	21.4%	18.6%	20.5%	24.8%
20-29	19.7%	18.4%	15.7%	13.4%
30-39	12.9%	13.8%	10.5%	9.5%
40-49	8.7%	9.8%	8.4%	8.7%
50-59	6.3%	7.3%	6.8%	5.7%
60-69	4.2%	4.4%	5%	4.1%
70-79	2.3%	2.4%	3.2%	3.9%
80+	1.1%	0.9%	1.3%	2.3%
Under 18	42.6%	41.4%	47.5%	46.1%
18 to 64	52.3%	53.5%	45.9%	46%
65 and over	5.1%	5.1%	6.6%	7.9%

The high percentage of young people also means that a large percentage of the population is dependent on a smaller productive sector. The dependency ratio is the ratio of non-economically active dependents (usually people younger than 15 or older than 64) to the working age population group (15-64). The higher the dependency ratio the larger the percentage of the population dependent on the economically active age group. This in turn translates reduced revenue for local authorities to meet the growing demand for services. The national dependency ratio in

2011 was 52.7%, while the Limpopo Province had the highest provincial dependency level in South Africa, namely 67.3% in 2011. The dependency ratio for the WDM in 2011 was 55.5%. The traditional approach is based people younger than 15 or older than 64. The information provided provides information for the age group under 18. The total number of people falling within this age group will therefore be higher than the 0-15 age group. However, most people between the age of 15 and 17 are not economically active (i.e. they are likely to be at school).

Using information on people under the age of 18 is therefore likely to represent a more accurate reflection of the dependency ratio. Based on these figures, the dependency ratios for the MLM (2016) and Ward 13 (2011) were 118% and 117% respectively. These figures are significantly higher than the national and provincial level in 2011, 52.7% and 67.3% respectively<sup>4</sup>. These figures are also high by international standards. The 2020 dependency ratios for Zambia and Zimbabwe were 85.2% and 81.6% respectively<sup>5</sup>. These are recognised as some of the poorer countries in the world. The high dependency ratios reflect the limited employment opportunities in the area and represent a significant risk to the district and local municipality.

In terms of race groups, Black Africans made up 97.1%% of the population on the MLM, followed by Whites, 2.2% and Indian or Asians, 0.5%. In Ward 13 Black Africans made up over 99.7% of the population (Table 21). The main first language spoken in both the MLM and Ward 13 was Sepedi (80% and 88.5% respectively).

**Table 21: Population by group (2016 for MLM and 2011 for Ward) (TBEC, 2023)**

	Limpopo Province	Waterberg District Municipality	Mogalakwena Local Municipality	Ward 13
Black African	97.1%	91.3%	97.1%	99.7%
Coloured	0.3%	0.3%	0.2%	0%
Indian or Asian	0.3%	0.4%	0.5%	0.1%
White	2.3%	8.1%	2.2%	0.1%

The overwhelming majority of the population in the study area (Ward 13) fall within the Historically Disadvantaged (HD) Black African group. In addition to being HD, the education and income levels are low, and the community is also predominately rural. These socio-economic factors increase the vulnerability of community.

#### Households and house types

Based on the information from the 2011 Census the majority of the households in Ward 13 (91.9%) reside in formal houses. The same applies to the MLM (87.5%). This, together with the information that the majority of members from the local community in Ward 13 were born in the Limpopo Province (95.6%, Census 2011) indicates that the majority of local residents are likely to have been born and raised in the area. This reflects a stable and well-established community that has strong historical, social, and cultural links to the area.

The majority of the houses in Ward 13 are owned and fully paid off (66.7%). This would imply a stable, established community. Also, of interest is that 25.4% of the households in Ward 13 are occupied rent-free. This may imply houses occupied by family members.

<sup>4</sup> A high dependency ratio can cause serious problems for a country or municipality if a large proportion of a government's expenditure is on health, social security & education, which are most used by the youngest and the oldest in a population. The fewer people of working age, the fewer the people who can support [schools](#), retirement [pensions](#), [disability pensions](#) and other assistances to the youngest and oldest members of a population, often considered the most [vulnerable](#) members of [society](#).

<sup>5</sup> These dependency ratios are however based on traditional use of figures for people younger than 15 or older than 64.

Based on the information from the 2016 Community Household Survey and 2011 Census the majority of households in the MLM and Ward 13 are headed by females, namely 57.7% and 54.1% respectively. The majority of households in the Limpopo and WDM are headed up by males. However, even at a Provincial and DM level a significant percentage are headed up by females, namely 48.9% and 40.9% respectively. The high number of female headed households at the local municipal and ward level reflects the lack on formal employment and economic opportunities in the MLM and Ward 13. As a result job seekers from the MLM and Ward 13 need to seek work in the larger centres, specifically Gauteng. The majority of the job seekers are likely to be males. This is due to traditional rural patriarchal societies where the role of the women is usually linked to maintaining the house and raising the children, while the men tend to be the ones that migrate to other areas in search of employment.

### Household income

Based on the data from the 2011 Census, 15.4% of the population of the MLM had no formal income, 5.2% earned less than R 4 800, 10.5% earned between R 5 000 and R 10 000 per annum, 23.4% between R 10 000 and R 20 000 per annum and 22.1% between R 20 000 and 40 000 per annum (2016). For Ward 17, 19.6% of the population had no formal income, 5.4% earned less than R 4 800, 10.9% earned between R 5 000 and R 10 000 per annum, 25.5% between R 10 000 and 20 000 per annum and 25.6% between R 20 000 and 40 000 per annum (Census 2011). For Ward 13, 15.3% of the population had no formal income, 3.6% earned less than R 4 800, 9.1% earned between R 5 000 and R 10 000 per annum, 25.6% between R 10 000 and 20 000 per annum and 16.4% between R 20 000 and 40 000 per annum (Census 2011) (Table 22).

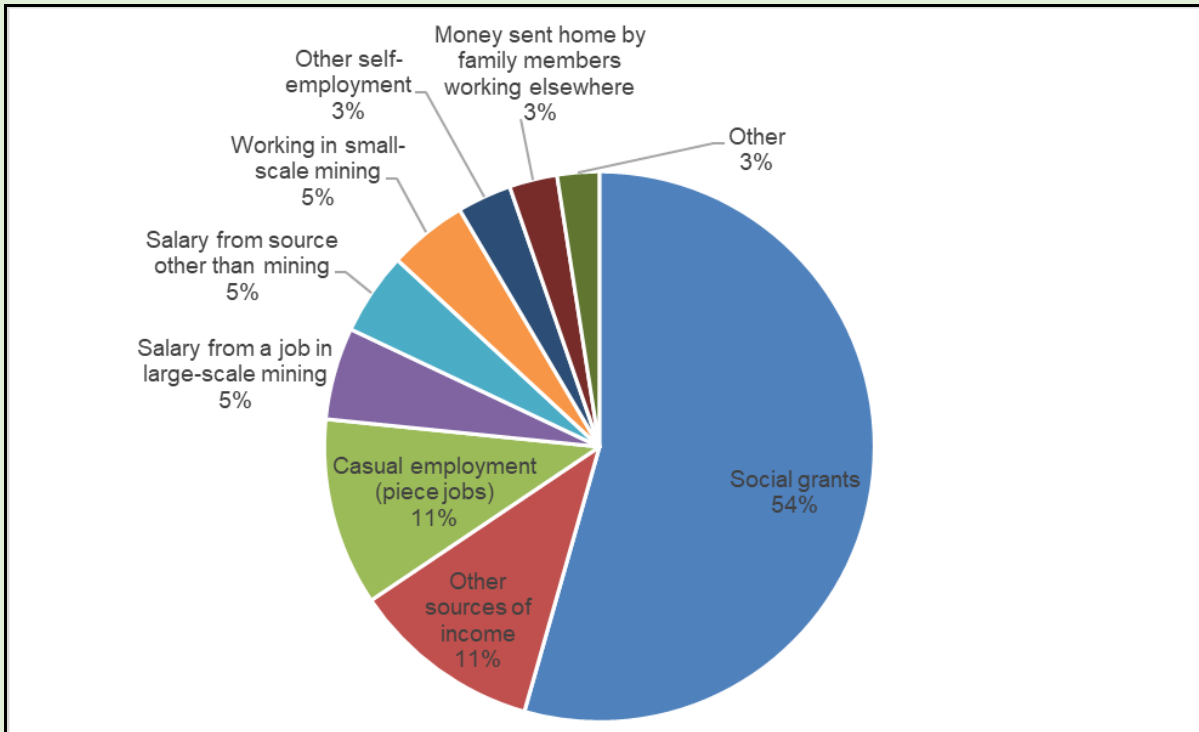
The poverty gap indicator produced by the World Bank Development Research Group measures poverty using information from household per capita income/consumption. This indicator illustrates the average shortfall of the total population from the poverty line. This measurement is used to reflect the intensity of poverty, which is based on living on less than R3 200 per month for an average sized household (~ 40 000 per annum). Based on this measure, in the region of 77 % of the households in the MLM and 70% in Ward 13 respectively live close to or below the poverty line. The low-income levels reflect the rural subsistence nature of the economy and the limited formal employment opportunities in the area. This is also reflected in the high unemployment rates. The low-income levels are a major concern given that an increasing number of individuals and households are likely to be dependent on social grants. The low-income levels also result in reduced spending in the local economy and less tax and rates revenue for the MLM. This in turn impacts on the ability of the MLM to maintain and provide services.

**Table 22 Annual Household Income (2016 for MLM and 2011 for Wards) (TBEC, 2023)**

	<b>Limpopo Province</b>	<b>Waterberg District Municipality</b>	<b>Mogalakwena Local Municipality</b>	<b>Ward 13</b>
No income	13.9%	13.9%	15.4%	15.3%
Under R4800	6.4%	3.9%	5.2%	3.6%
R5k - R10k	12%	7.8%	10.5%	9.1%
R10k - R20k	23.2%	20%	23.4%	25.6%
R20k - R40k	20.9%	21.4%	22.1%	16.4%
R40k - R75k	9.8%	14%	10%	13.5%
R75k - R150k	6.3%	9%	6.3%	11.2%
R150k - R300k	4.5%	6%	4.4%	2.9%
R300k - R600k	2.2%	2.8%	2%	1%
R600k - R1.2M	0.6%	0.8%	0.5%	0.1%

R1.2M - R2.5M	0.2%	0.3%	0.2%	0%
Over R2.5M	0.2%	0.2%	0.2%	0.1%

The findings of the household survey undertaken by Digby Wells (2021) found that the main source of income for the majority of households in the area is social grants (55%), followed by casual employment/piece jobs (11%) and then salaries from small and large-scale mining (combined 11%) (Figure 21). The most common social grants within the community are the “Older Persons Grant”, and the “Child Support Grant”, approximately half of all respondents receive these grants. The high dependency on social grants reflects the limited employment opportunities in the area.



Source: Digby Wells 2021

**Figure 21: Sources of Household Income (TBEC, 2023)**

Employment

The official unemployment figure for the MLM was 17.6%, slightly higher than the WDM (15%). The figure for Ward 13 was 20.6%. The figures also indicate that the majority of the population are not economically active, 51.5% for Ward 13. The figure for the MLM is 50.6%. These figures are similar to the official unemployment rate for the Limpopo Province of 17.5%. This reflects the limited employment opportunities in the area, which in turn are reflected in the low income and high poverty levels.

Based on the 2011 Census data most economically active members of the community (15/18-64 age group) in Ward 13 (71.7) were employed in the formal sector, while 18% were employed in the informal sector and 10% were employed in private households. The data does not provide insight into which sectors in the formal economy people are employed. However, it would be reasonable to assume that the key sectors are likely to be the mining and government services sector.

Education

In terms of education levels, the percentage of the population over 20 years of age in the MLM and Ward 13 with no schooling were 10.2% (2016) and 21.2% (2011) respectively, compared to 13.9% for the Limpopo Province in 2016. The percentage of the population over the age of 20 with matric for the MLM and Ward 13 were 26.5% and 20.9% respectively, compared to 28.3% for the Limpopo Province. The low education levels in the MLM and Ward 13 are likely to reflect the rural nature of the municipality and the highlights the vulnerability of the local communities in these areas.

### Municipal Services

#### Access to water

Based on the information from the 2011 Census 77.5% of households in Ward 13 were provided with water by a regional service provider, while 14.5% relied on boreholes, 4.4% on other sources and 2.6% on vendors.

#### Sanitation

Based on the information from the 2011 Census the majority of households in Ward 13 rely on pit latrines (66.6% without ventilation and 24.1% with ventilation). Only 4.8% of households have flush toilets. Access to flush toilets is significantly lower than the figure for the MLM (24.2%) and WDM (46.6%) and reflects the semi-rural nature of Ward 13.

#### Refuse collection

Based on the information from the 2011 Census most households in Ward 13 rely on their own dump (82.9%) to dispose of their waste. Based on the 2011 Census data it appears that the MLM do not provide refuse collection services to the villages in Ward 13.

#### Access to Secondary Schools

The Digby Wells Survey (2021) included an assessment of access to schools, including secondary schools. Of interest to the SIA the following villages in Doorstep Area 1 and Host Area 2 indicated that they did not have access to secondary schools, namely:

- Doorstop Area 1: Ga-Chaba, Matopa and Ga-Seema.
- Host Area 2: Magope and Mmamala.

These villages are located in relatively close proximity to the proposed temporary school site. The school may therefore benefit these villages if a decision is taken to maintain the facility after Skimming and Leruleng have been resettled.



## SECTION C: PUBLIC PARTICIPATION

The objectives of the public participation process are as follows:

- To introduce the proposed project to identified stakeholders/Interested and Affected Parties (I&APs) and to inform them of the environmental authorisation process to be followed;
- To provide sufficient and accessible information to identified stakeholders/I&APs; and
- To provide stakeholders/I&APs opportunities to provide comment, raise concerns or provide suggestions for enhanced benefits.

A summary of the public participation process followed is provided in this section.

### **Pre-application meetings:**

Pre-application meetings were held on 09 May 2023 at the Ranch Resort (Mokopane) with the representatives of the following identified stakeholders:

- Mogalakwena Local Municipality.
- Skimming community leadership;
- Leruleng community leadership, Mapela Traditional Council and the Seritarita Secondary School Governing Body (combined meeting).

A presentation was given and attendees were provided with the opportunity to comment on the proposed temporary relocation of the Seritarita Secondary School project. Copies of the presentation were provided in English and Sepedi (Appendix E1). Minutes of the pre-application meetings are available in Appendix E2. In addition, copies of the Background Information Document (BID) were distributed to all attendees of the meetings, in English and Sepedi (copies of the BID are available in Appendix E3). All comments raised have been included in the Comment and Response Report (CRR) which is available in Appendix E4.

Pre-application consultation was undertaken with the competent authority, the Limpopo Department of Economic Development, Environment and Tourism (LEDET) both telephonically and via email. Refer to Appendix E5 for proof of consultation.

Pre-application consultation was undertaken with the Department of Water and Sanitation (DWS), who will assess the Water Use Licence Application. A pre-application enquiry was submitted on the e-WULAAS website. Further consultation was undertaken telephonically and via email Refer to Appendix E5 for proof of consultation.

### **Background Information Document:**

BIDs were compiled in both English and Sepedi (Appendix E3). The BID included an introduction to the project, information on the proposed activities, details of the environmental authorisation process to be followed, details of the public participation process and an invitation to register as an Interested and Affected Party (I&AP).

These were handed out at the pre-application meetings (as indicated above) and were also emailed to the following identified stakeholders:

- Skimming community leadership;

- Leruleng community leadership;
- Mapela Traditional Council;
- Seritarita Secondary School Governing Body;
- Mogalakwena Local Municipality – Environmental Department;
- Mogalakwena Local Municipality – Ward councillor;
- Mogalakwena Local Municipality – Planning Department;
- Waterberg District Municipality;
- Department of Water and Sanitation (DWS);
- Limpopo Department of Economic Development, Environment and Tourism (LEDET);
- Limpopo Department of Education;
- Department of Agriculture, Land Reform and Rural Development (DALRRD);
- Department of Forestry, Fisheries and the Environment (DFFE); and
- Limpopo Provincial Roads Department.

Proof of distribution of BIDs is available in Appendix E6.

BIDs were also distributed to members of the Skimming and Leruleng communities during community mass meetings held by AAP on 18 and 21 May 2023 respectively. Refer to Appendix E6.

**Site Notices:**

Site notices in English and Sepedi were placed at the preferred site and both alternative sites. Proof of placement of site notices are available in Appendix E7. The site notices provided information on the project and details on how to register as an Interested and Affected Party (I&AP).

**Availability of the Draft Basic Assessment Report for public comment:**

The Draft Basic Assessment Report (BAR) was made available for public comment for a period of 30 days (14 July to 14 August 2023).

Hard copies of the Draft BAR were made available for public comment at the following locations:

- Seritarita Secondary School;
- Mapela Traditional Council Offices; and
- Mogalakwena Mine Social Performance Office.

An electronic copy of the Draft BAR was available on the AVDE website:

<https://www.altavandykenvironmental.co.za/public-documents/>

**Advertisement:**

Newspaper advertisements were placed in both English and Sepedi in the Bosveld Newspaper on 13 July 2023.

The information within this advert included a brief explanation of the project; the authorisations to be undertaken and the availability of the Draft BAR for public comment. Refer to Appendix E8 for proof of the advertisements.

**Notification letter and sms:**

A notification letter was distributed to all identified stakeholders informing them of the availability of the Draft BAR for public comment. Refer to Appendix E9. Proof of the distribution of the notification letter is available in Appendix E10.

SMS notifications were sent to all identified stakeholders on the database, informing them of the availability of the Draft BAR for public comment. Proof of sms' sent is provided Appendix E12.

Stakeholders were encouraged to provide comments to the EAP for inclusion in the Final BAR to be submitted to LEDET.

**Feedback meetings:**

Feedback meetings providing information of the findings of the specialist studies and Draft Basic Assessment Report were held on 27 July 2023 at the Ranch Resort with the representatives of the following identified stakeholders:

- Skimming community leadership;
- Mapela Traditional Council;
- Leruleng community leadership and Seritarita Secondary School Governing Body (combined meeting);
- Mogalakwena Local Municipality.

A presentation was given, and attendees were provided with the opportunity to comment on the proposed temporary relocation of the Seritarita Secondary School project. Copies of the presentation were provided in English and Sepedi (Appendix E13). Minutes of the pre-application meetings are available in Appendix E14. All comments raised have been included in the Comment and Response Report (CRR) which is available in Appendix E4.

**Submission of the Final Basic Assessment Report to the competent authority:**

All comments obtained from stakeholders and authorities during the pre-application and announcement phases and received during the Draft Basic Assessment Report public comment period are captured in the Comment and Response Report. Refer to Appendix E4. The Final Basic Assessment Report (this report) is submitted to the competent authority (LEDET) for authorisation.

**Decision:**

Once the Final BAR has been submitted to the competent authority, LEDET has 107 calendar days to issue a decision on the environmental authorisation application. Once the decision has been received, a notification letter and sms will be distributed to all registered stakeholders informing them of the decision made by LEDET. The notification letter will provide details on the appeal process and the associated timeframes, should they wish to appeal the decision.

## 1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the department) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
  - (v) the municipality which has jurisdiction in the area;
  - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
  - (vii) any other party as required by the department;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the department, in those instances where a person is desiring of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that the application has been submitted to the department in terms of these Regulations, as the case may be;
  - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) the nature and location of the activity to which the application relates;
  - (iv) where further information on the application or activity can be obtained; and
  - (v) the manner in which and the person to whom representations in respect of the application may be made.

### **3. PLACEMENT OF ADVERTISEMENTS AND NOTICES**

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the department in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these Regulations.

Advertisements and notices must make provision for all alternatives.

Refer to Appendix E7 and Appendix E8 for a copy of the site notice and advert respectively.

### **4. DETERMINATION OF APPROPRIATE MEASURES**

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the department to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

### **5. COMMENTS AND RESPONSE REPORT**

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in these Regulations and be attached to this application. The comments and response report must be attached under Appendix E.



Refer to Appendix E4 for the Comment and Response Report.

Written comments received are included in Appendix E15, as well as in the Comment and Response Report (Appendix E4).

## 6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Refer to Appendix E12 for a complete list of stakeholders consulted during the pre-application phase and Draft Basic Assessment Report public comment period.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

<b>Name of Authority informed:</b>	<b>Comments received (Yes or No)</b>
Limpopo Department of Economic Development, Environment and Tourism (Competent authority)	Yes (Appendix E15)
Department of Water and Sanitation	Yes (email)
Mogalakwena Local Municipality	Yes (Appendix E15)
Waterberg District Municipality	None received to date
Department of Agriculture, Land Reform and Rural Development	None received to date
Limpopo Department of Education	None received to date
Department of Agriculture, Rural Development and Land Reform	None received to date
Department of Forestry, Fisheries and the Environment	Yes (Appendix E15)
Provincial Roads Department (Limpopo)	None received to date
South African Heritage Resources Agency	Yes (Appendix E15)

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the department.

Proof of any such agreement must be provided, where applicable.

**Has any comment been received from stakeholders?**

YES	
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**If “YES”, briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):**

Please refer to Section C: Public Participation above for a summary of the public participation process followed to date for the Seritarita Secondary School Relocation project. Supporting documentation is available in Appendix E of this Final Basic Assessment Report. The following documentation is available:

Appendix E1: Pre-application meeting presentation (9 May 2023)

Appendix E2: Minutes of pre-application meetings (9 May 2023)

Appendix E3: Background Information Document

Appendix E4: Comment and Response Report

Appendix E5: Consultation with authorities

Appendix E6: Proof of distribution of BID

Appendix E7: Proof of site notice

Appendix E8: Advertisement

Appendix E9: Notification letter

Appendix E10: Proof of distribution of notification letter

Appendix E11: Proof SMS distribution

Appendix E12: List of stakeholders

Appendix E13: Feedback meeting presentation (27 July 2023)

Appendix E14: Minutes of feedback meetings (27 July 2023)

Appendix E15: Comments received

Main comments received from stakeholders are summarised in Section D part 1 (issues raised by interested and affected parties) below.

## **SECTION D: IMPACT ASSESSMENT**

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### **1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES**

List the main issues raised by interested and affected parties.

The following main comments were made by stakeholders regarding the proposed Seritarita Secondary School Relocation Project:

- Will the community be able to use the prefabricated facility after Anglo American has relocated the school to its permanent relocation?
- When will the overall relocation of the Skimming and Leruleng communities occur?
- The community agrees and accepts the proposed relocation and re-establishment of Seritarita for the safety of children and teachers.
- An agreement between the mine and the community must be drawn to ensure community members will be given the opportunity to go and work at the new school.

All comments received to date are captured in the CRR (Appendix E4).

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Appendix E):

Refer to Appendix E4.

## **2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES**

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

### **Impact Assessment Methodology**

The significance of the identified impacts will be determined using an accepted methodology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998. As with all impact methodologies, the impact is defined in a semi-quantitative way and will be assessed according to methodology prescribed in the following section.

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

- $SS \text{ (Significance Score)} = (\text{magnitude} + \text{duration} + \text{extent} + \text{irreplaceable} + \text{reversibility}) \times \text{probability}$ .

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 24 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after implementation of the recommended mitigation measures.

**Table 23: Scale utilised for the evaluation of the Environmental Risk Ratings**

Evaluation Component	Rating	Scale	Description / criteria
<b>MAGNITUDE of negative impact</b> (at the indicated spatial scale)	10	<b>Very high</b>	Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.
	8	<b>High</b>	Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.
	6	<b>Medium</b>	Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.
	4	<b>Low</b>	Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.
	2	<b>Very low</b>	Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.
	0	<b>Zero</b>	Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
<b>MAGNITUDE of POSITIVE IMPACT</b> (at the indicated spatial scale)	10	<b>Very high</b>	Positive: Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.
	8	<b>High</b>	<b>Positive:</b> Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.
	6	<b>Medium</b>	<b>Positive:</b> Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.
	4	<b>Low</b>	<b>Positive:</b> Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.
	2	<b>Very low</b>	<b>Positive:</b> Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.
	0	<b>Zero</b>	<b>Positive:</b> Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
<b>DURATION</b>	5	<b>Permanent</b>	<b>Impact in perpetuity. –</b>
	4	<b>Long term</b>	Impact ceases after operational phase/life of the activity > 60 years.
	3	<b>Medium term</b>	Impact might occur during the operational phase/life of the activity – 60 years.
	2	<b>Short term</b>	Impact might occur during the construction phase - < 3 years.
	1	<b>Immediate</b>	<b>Instant impact.</b>
<b>EXTENT</b> (or spatial scale/influence of impact)	5	<b>International</b>	<b>Beyond the National boundaries.</b>
	4	<b>National</b>	Beyond provincial boundaries, but within National boundaries.
	3	<b>Regional</b>	Beyond 5 km of the School and within the provincial boundaries.
	2	<b>Local</b>	Within a 5 km radius of the School.
	1	<b>Site-specific</b>	<b>On site or within 100 meters of the site boundaries.</b>
	0	<b>None</b>	<b>Zero extent.</b>
<b>IRREPLACEABLE</b> loss of resources	5	<b>Definite</b>	<b>Definite</b> loss of irreplaceable resources.
	4	<b>High potential</b>	<b>High potential</b> for loss of irreplaceable resources.
	3	<b>Moderate potential</b>	<b>Moderate potential</b> for loss of irreplaceable resources.
	2	<b>Low potential</b>	<b>Low potential</b> for loss of irreplaceable resources.
	1	<b>Very low potential</b>	<b>Very low potential</b> for loss of irreplaceable resources.
	0	<b>None</b>	<b>Zero potential.</b>
<b>REVERSIBILITY</b> of impact	5	<b>Irreversible</b>	Impact <b>cannot</b> be reversed.
	4	<b>Low irreversibility</b>	<b>Low potential</b> that impact might be reversed.
	3	<b>Moderate reversibility</b>	<b>Moderate potential</b> that impact might be reversed.
	2	<b>High reversibility</b>	<b>High potential</b> that impact might be reversed.
	1	<b>Reversible</b>	Impact <b>will be</b> reversible.
	0	<b>No impact</b>	No impact.
<b>PROBABILITY</b> (of occurrence)	5	<b>Definite</b>	>95% chance of the potential impact occurring.
	4	<b>High probability</b>	75% - 95% chance of the potential impact occurring.



Evaluation Component	Rating	Scale	Description / criteria
	3	Medium probability	25% - 75% chance of the potential impact occurring
	2	Low probability	5% - 25% chance of the potential impact occurring.
	1	Improbable	<5% chance of the potential impact occurring.
	0	No probability	Zero probability.
Evaluation Component	Rating scale and description / criteria		
<b>CUMULATIVE impacts</b>	<p><b>High:</b> The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p><b>Medium:</b> The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p><b>Low:</b> The activity is localised and might have a negligible cumulative impact.</p> <p><b>None:</b> No cumulative impact on the environment.</p>		

**Table 24: Scale used for the evaluation of the Environmental Significance Ratings**

Significance score	Environmental significance	Description
1250 – 150	<b>Very high (VH)</b>	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	<b>High (H)</b>	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	<b>Medium-high (MH)</b>	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked at.
40 – 74	<b>Medium (M)</b>	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	<b>Low (L)</b>	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	<b>Positive impact (+)</b>	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

Table 25: Identified impacts during the construction phase of the Seritarita Secondary School relocation project

CONSTRUCTION PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
<b>Soils</b>																				
Vegetation clearance, stripping of topsoil, construction activities	<p><b>Loss of soils to compaction and erosion</b></p> <p>The proposed development will result in the stripping of topsoil for the new access roads from the Mapela road and the Skimming Village to where the proposed school will be constructed. Furthermore, the establishment of the school will also result in topsoil stripping and levelling. The changes in the land use will be from veld land use to institutional area (or transformed). It is possible that suitable agricultural land could become fragmented, resulting in these smaller portions no longer being deemed feasible for any potential agricultural production.</p> <p>Soil compaction of the excavated areas and the surrounding areas will result due to the soil rafting and an increase in on-site traffic.</p>	8	2	1	4	4	4	76	MH	Medium	Negative	<ul style="list-style-type: none"> <li>Demarcate the school and access roads footprint area. Vegetation clearing and removal of topsoil to be limited to the demarcated area.</li> <li>Topsoil removed from the development footprint area must be stockpiled for use towards land scaping and vegetable gardens.</li> <li>No vehicles may drive on topsoil stockpiles.</li> <li>Erosion mitigation strategies and proper stormwater management must be considered to limit erosion within the development footprint area.</li> <li>Only proposed access roads and existing access roads to be used to reduce any unnecessary compaction</li> <li>Compacted areas are to be ripped to loosen the soil structure where necessary.</li> <li>A landscape strategy focused on revegetation, where appropriate, must be initiated after the construction phase.</li> </ul>	4	2	1	3	3	3	42	M
Vegetation clearance, stripping of topsoil, construction activities	<p><b>Soil erosion</b></p> <p>Potential erosion is expected during the construction phase due to some highly erodible soils within the footprint assessment area, such as the Glenrosa and Mispah soil forms. The removal vegetation and changes to the local topography could result in an alteration to surface run-off dynamics. Erosion of the area could result in further loss of topsoil, and soil forms suitable for any potential agricultural production.</p>	6	2	1	4	4	4	68	M	Medium	Negative	<ul style="list-style-type: none"> <li>An alien invasive plant species and control programme must be implemented from the onset of the project.</li> <li>Soils must be used for various application on site, such as landscaping, the vegetable garden and considered in the use of stormwater management (diversion).</li> </ul>	4	2	1	3	3	3	42	M
Construction activities for the proposed relocated Seritarita Secondary School	<p><b>Contamination of soil</b></p> <p>Soil can become contaminated due to spillage of hydrocarbons, cement mixing or other hazardous material</p>	4	2	1	4	4	4	60	M	Medium	Negative	<ul style="list-style-type: none"> <li>Prevent any spills from occurring. Machines/construction vehicles must be parked within hard park areas or dedicated storage areas and must be checked weekly for fluid leaks. Drip trays can be placed under construction vehicles to prevent any leaks from reaching the soil.</li> <li>Contractors must have spill kits available to address any unlikely spillages.</li> <li>Hydrocarbons (such as diesel) and other hazardous material must be stored within a bunded area.</li> <li>Mixing and management of cement and</li> </ul>	2	2	1	2	1	2	16	L

CONSTRUCTION PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
												building components must be managed within a designated area, and run-off from the area to be prevented.								
												<ul style="list-style-type: none"> <li>Contaminated soils, if any, could be treated before disposed of at a licensed waste disposal facility. Close out of construction activities, should include for a thorough cleanup and removal and disposal of contaminated soil and waste.</li> </ul>								
<b>Biodiversity</b>																				
Clearance of 13 ha of indigenous vegetation	<p><b>Destruction, fragmentation and degradation of habitat and ecosystem</b></p> <p>The habitat found within the entire project area, is regarded as disturbed Bushveld. Historic land clearing, for most likely, agricultural purposes, has affected the soil layer and vegetation present. This habitat is in a disturbed state. Recovery to a climax state is not possible due to ongoing disturbances. The encroachment of <i>Dichrostachys cinerea</i> is a result of past disturbances. It affects not only the amount and type of biodiversity found within the site but also the ecosystem processes at the site. The removal of the current vegetation has an impact on current ecosystems established on site.</p>	4	2	2	2	3	2	26	L			<ul style="list-style-type: none"> <li>Demarcate the footprint area.</li> <li>Restrict the removal of vegetation to the footprint area only.</li> <li>Cleared vegetation and debris that has not been utilised must be collected and disposed through an appropriate manner.</li> <li>Collection of branches, wood (dead or alive), shrubs or any vegetation for fire making purposes is strictly prohibited.</li> <li>Open fires at site is prohibited, including the burning of waste material. The irresponsible use of welding equipment, oxy-acetylene torches, and other naked flames, which could result in veld fires, or constitute a hazard should be guided by safe practice guidelines.</li> <li>Provide temporary and suitable on-site ablation, sanitation, litter and waste management and hazardous materials management facilities until such time that adequate permanent and operational facilities can be provided.</li> <li>Ablution anywhere other than in provided ablations shall not be permitted. Under no circumstances shall use of the veld for ablation purposes be permitted.</li> <li>A periodic clean-up of the surrounding natural environment should be undertaken to remove litter and prevent unwanted deterioration of the surrounding natural environment.</li> <li>Implement site induction for contractors and workers to familiarize them with all aspects relating to environmental components of the project.</li> </ul>	2	2	1	1	1	2	14	L
Clearance of 13 ha of indigenous vegetation	<p><b>Loss of protected plant and tree species</b></p> <p>Several Marula Trees that are protected in terms of the National Forest Act were identified in the project area. As these trees are protected, they may not be disturbed without the necessary permits in place.</p>	4	4	1	3	3	5	75	M	Low	Negative	<ul style="list-style-type: none"> <li>Protected plants must be marked with high visibility flags and clearance thereof should be avoided.</li> <li>If clearance of protected plants species cannot be avoided, apply for and acquire permits from DFFE (and possibly LEDET) for removal and preferred, relocation/replanting of protected plant species. Removal cannot commence unless the permit has been received.</li> </ul>	2	2	1	2	1	2	16	L
Vegetation clearance, stripping of topsoil,	<p><b>Spread and/or establishment of alien and/or invasive species</b></p> <p>Several invasive species have been identified on the relocation</p>	4	4	1	3	3	5	75	M	Low	Negative	<ul style="list-style-type: none"> <li>Implement an Alien Invasive Plant Management Plan, which identify species that pose the greatest threats, in terms of habitat transformation, within</li> </ul>	2	2	1	2	1	2	16	L

CONSTRUCTION PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
construction activities	area , which, if left unchecked, will continue to grow and spread prolifically leading to further and more significant deterioration to the health of the remaining natural environment in and around the project area.											the development areas, and considers all appropriate chemical, mechanical, biological and cultural control methods to effectively control the species.								
<b>Surface Water</b>																				
Construction activities for the proposed relocated Seritarita Secondary School	<p><b>Contamination of surface water resources</b></p> <p>Although there are no surface water resources (rivers) in close proximity to the proposed relocated Seritarita Secondary School, surface run-off may be contaminated by activities on site due to spillage of hydrocarbons or other hazardous material</p>	2	3	2	2	1	3	30	L	Low	Negative	<ul style="list-style-type: none"> <li>Storage of chemical and other hazardous substances /waste in bunded areas.</li> <li>All contractors must have spill kits available and be trained in the correct use thereof.</li> <li>Drip trays to be made available for construction vehicles.</li> <li>Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area.</li> <li>All waste generated on-site must be adequately managed, stored and separated into different waste materials should be supported.</li> <li>All machinery and equipment should be inspected regularly for faults and possible leaks, these should be serviced off-site.</li> <li>Re-fuelling must take place on a sealed surface area to prevent hydrocarbon pollution.</li> <li>Implementation of a stormwater management plan around the Seritarita Secondary School.</li> <li>Prevent any spills from occurring. Machines/construction vehicles must be parked within hard park areas or dedicated storage areas and must be checked weekly for fluid leaks. Drip trays to be placed under vehicles where oil leaks could occur.</li> <li>Mixing and management of cement and building components must be managed within a designated area, and run-off from the area to be prevented.</li> <li>An emergency spill procedure should be developed and implemented.</li> </ul>	2	2	1	1	1	2	14	L
<b>Groundwater</b>																				

CONSTRUCTION PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Construction activities for the proposed relocated Seritarita Secondary School	<b>Contamination of groundwater resources due to spillage</b> It is anticipated that deterioration of groundwater quality may occur from the infiltration from contaminants including hydrocarbons due to spillage	2	3	2	2	1	3	30	L	Low	Negative	<ul style="list-style-type: none"> <li>Implement the same mitigation measures as described for surface water above.</li> </ul>	2	2	1	1	1	2	14	L
<b>Air Quality</b>																				
Construction activities for the proposed relocated Seritarita Secondary School	<b>Increase in dust fallout</b> A general rise in dust fallout is expected during the construction phase, due to the clearance of vegetation and general construction activities.	6	2	2	1	1	4	48	M	Low	Negative	<ul style="list-style-type: none"> <li>A complaints register must be available at the Construction Site Office. Complaints must be attended to immediately as per the AAP's Grievance Procedure.</li> <li>Personal working on site should be provided with Personal Protective Equipment (PPE) and must be worn at all times during the construction phase.</li> <li>Continue with dustfallout monitoring, to monitor Mogalakwena Mine's impact on the surrounding community.</li> <li>Where required, wetting of areas to be undertaken, as dust suppression measures.</li> </ul>	2	2	1	1	1	2	14	L
<b>Noise</b>																				
Construction activities for the proposed relocated Seritarita Secondary School	<b>General rise in ambient noise levels</b> A general rise in ambient noise levels are expected during the construction phase, due to the movement on construction vehicles, undertaking of earthworks and general construction activities.	6	2	1	1	1	4	44	M	Low	Negative	<ul style="list-style-type: none"> <li>High noise construction activities (loud machinery, hammering) will be limited to daylight hours.</li> <li>A complaints register must be available at the Construction Site Office. Complaints must be attended to immediately as per the AAP's Grievance Procedure.</li> <li>All construction equipment and vehicles must be regularly serviced to prevent excessive noise.</li> <li>Construction vehicles and equipment generating excessive noise should be fitted with appropriate noise abatement measures.</li> <li>Personal working on site should be provided Personal Protective Equipment and must be worn at all times during the construction phase.</li> </ul>	2	2	1	1	1	2	14	L
<b>Heritage</b>																				
Vegetation clearance, stripping of topsoil, construction activities	<b>Impact on Heritage /Archaeological Resources</b> The probability is very low that archaeological resources will be impacted upon, since no known heritage features were pointed out by community representatives and the site visit also did not record any heritage features. Due to the lack of any heritage finds within the project area, no major impacts are expected. Construction activities could unearth non-visible heritage	1	3	1	1	5	2	22	L	Low	Negative	<ul style="list-style-type: none"> <li>Implementation of a Chance Find Procedure for the project, should a heritage feature be uncovered during the construction phase. Construction to stop at this area, while Chance Find Procedure is implemented.</li> </ul>	1	3	1	1	2	1	8	L



CONSTRUCTION PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
	resources/graves																			
<b>Waste Management</b>																				
Construction activities for the proposed relocated Seritarita Secondary School	<b>Increase waste generation due to construction activities</b>	4	2	1	1	1	4	36	L	Low	Negative	<ul style="list-style-type: none"> <li>Rubble and other construction waste produced should be re-used if possible, otherwise be disposed of at a licensed waste disposal facility.</li> <li>Adequate bins must be provided on site and cleared regularly. Bins must not overflow. Illegal dumping is prohibited.</li> <li>The construction area must remain litter free and regular inspections for litter must be conducted. The activity should not contribute to any surrounding windblown litter.</li> <li>Waste skips must be emptied regularly. No overflowing to be allowed.</li> <li>Empty cement bags must be kept in a sealed waste container.</li> <li>Waste must not to be buried or burned.</li> </ul>	1	3	1	1	2	1	8	L
<b>Fire Management</b>																				
Construction activities for the proposed relocated Seritarita Secondary School	<b>Increased risk of on-site fires</b>	4	4	1	4	3	4	64	M	Low	Negative	<ul style="list-style-type: none"> <li>A firebreak surrounding the relocated Seritarita Secondary School must be made.</li> <li>All chemicals and hazardous substances (flammable) must be stored in dry areas and locked.</li> <li>Smoking is prohibited near flammable substances. Dedicated smoking areas must be made available for personal.</li> <li>No open fires to be allowed on site. Fire extinguishers and other firefighting equipment deemed suitable must be available on site at all times</li> </ul>	2	2	1	1	1	2	14	L
<b>Socio-economic</b>																				
Construction activities for the proposed relocated Seritarita Secondary School	<b>Creation of local employment and business opportunities</b> In terms of AAPs procurement policies, where possible locally based service providers will be appointed to undertake the required work associated with the establishment of the temporary school facility, including, vegetation clearing and site preparation, installation of the prefabricated, modular structures and sports facilities and access roads. The construction phase will therefore create employment and business opportunities for local community members from the MLM, including members from the doorstep communities. However, due the tight timeframes the potential opportunities to create employment opportunities for members from the doorstep communities may be limited. The tight timeframes will also limit the potential opportunities to implement a training and skills development programme as part of the construction phase.	4	2	1	0	0	3	21	L	Low	Positive	<ul style="list-style-type: none"> <li>Implement AAP procurement policies and procedures to maximise employment of local service providers and suppliers, community members from doorstep communities.</li> <li>AAP to provide local SMMEs with assistance to understand AAP procurement requirements and submit tender forms and associated information that meet AAP requirements.</li> <li>Before the construction phase commences, the proponent should meet with representatives from the MLM, Business Forum and local TCs to establish the existence of a skills database for the area.</li> <li>The recruitment selection process should seek to promote gender equality and employment of women wherever possible.</li> </ul>	6	2	2	1	1	4	48	M

CONSTRUCTION PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Construction activities for the proposed relocated Seritarita Secondary School	<p><b>Impact of construction workers on local communities</b></p> <p>While the presence of construction workers does not in itself constitute a social impact, the way in which they conduct themselves can impact on local communities. The potential negative impacts are associated with the disruption of existing family structures and social networks. The potential risks are linked to:</p> <p>An increase in alcohol and drug use, an increase in crime levels, the loss of partners to construction workers, an increase in teenage and unwanted pregnancies, an increase in prostitution, an increase in sexually transmitted diseases (STDs), including HIV.</p> <p>Given the relatively small scale of the project and the short duration of the construction phase (6 months) the potential impact of construction workers on the local community is likely to be limited. The potential impact can also be reduced / mitigated by employing local service providers and community members from the doorstep communities.</p> <p>While the risks associated with construction workers at a community level will be low, at an individual and family level they may be higher, especially in the case of contracting a sexually transmitted disease or an unplanned pregnancy. The experience with the other construction projects is that it is not possible to totally avoid these impacts due to the nature of human behaviour.</p>	4	2	2	3	3	3	42	M	Low	Negative	<ul style="list-style-type: none"> <li>Implement Mogalakwena Complex Community Health and Safety Plan (July 2022).</li> <li>Implement AAP employment policies and procedures to maximise employment of community members from doorstep communities.</li> <li>Implement AAP procurement policies and procedures to maximise employment of local service providers and suppliers. community members from doorstep communities.</li> <li>Implements recommendations of Mogalakwena Site Induced Migration Assessment, Plexus Energy Ltd, 2022).</li> <li>AAP in consultation with the contractor/s appointed should implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase.</li> <li>The contractor/s should provide daily transport to and from the site for construction workers. This will enable the contractor to effectively manage and monitor the movement of construction workers on and off the site.</li> <li>The contractor/s should ensure that construction workers remain on site during work hours. This will enable the contractor to effectively manage and monitor the movement of construction workers on the site.</li> <li>Where necessary, the contractor should make the necessary arrangements for workers from outside the area to return home over weekends and/ or on a regular basis. This would reduce the risk posed to local family structures and social networks.</li> </ul>	4	2	1	3	3	3	39	L
Construction activities for the proposed relocated Seritarita Secondary School	<p><b>Loss of productive land</b></p> <p>The temporary school facility will occupy an area of 13 ha. The loss of an area of this size has the potential to impact on livelihoods if the land is being used farming uses, such as livestock grazing and or dryland farming. However, based on the findings of the SIA and a number of other specialist studies there are no farming related activities taking place on the site. The site is overgrown with sekelbos and access onto the site is difficult due the thick growth.</p>	2	2	1	1	1	3	21	L	Low	Negative	<ul style="list-style-type: none"> <li>Rehabilitate disturbed footprint area to enable land to be used for farming.</li> </ul>	6	4	1	1	1	4	52	M (+)

Table 26: Identified impacts during the operational phase of the Seritarita Secondary School relocation project

OPERATIONAL PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
<b>Soils</b>																				
Operation of the relocated Seritarita Secondary School	No additional impacts are expected during the operational phase.																			
<b>Biodiversity</b>																				
Operation of the relocated Seritarita Secondary School	<p><b>Spread and/or establishment of alien and/or invasive species</b></p> <p>Several invasive species have been identified on the relocation area, which, if left unchecked, will continue to grow and spread prolifically leading to further and more significant deterioration to the health of the remaining natural environment in and around the project area.</p>	2	3	1	3	3	2	24	L	Low	Negative	Implement an Alien Invasive Plant Management Plan, which identify species that pose the greatest threats, in terms of habitat transformation, within the development areas, and considers all appropriate chemical, mechanical, biological and cultural control methods to effectively control the species.	2	2	1	3	3	2	22	L
<b>Groundwater</b>																				
Abstraction of groundwater from supply borehole	<p><b>Impact on groundwater volumes due to groundwater abstraction from the water supply borehole</b></p> <p>Once the school is operational, water will be drawn from the new borehole for potable water supply to learners, teachers and other employees at the school. The estimated daily demand is approximately 40 000l/day (12 000m<sup>3</sup> per annum).</p> <p>The groundwater level around the water supply borehole will potentially draw down due to groundwater abstraction. The zone of influence of the potential dewatering cone depends on several factors with the most important being depth of the groundwater level drawdown below the regional groundwater level (depending on the yield and specific capacity of the borehole), recharge from rainfall to the aquifers, the aquifer transmissivity, and aquifer storativity amongst others.</p> <p>The dewatering cone will be localised due to the proposed small scale abstraction. There are no identified boreholes within 350m of the school's abstraction borehole, and there are no watercourses/drainage line within 500m of the project area. Therefore the abstraction of groundwater from the borehole will not impact any nearby receptors, however monitoring of the water level of the production borehole will be done in order to confirm a decreasing water table trend.</p>	2	2	2	2	3	2	22	L	Low	Negative	<ul style="list-style-type: none"> <li>Continue to monitor groundwater levels and quality on a quarterly basis.</li> <li>Licence all production boreholes.</li> </ul>	1	2	3	3	3	2	24	L
Operation of the waste water treatment plant (WWTP)	<p><b>Contamination of groundwater due to the potential overflow and spillage of the waste water treatment plant.</b></p> <p>In the event that large amounts of wastewater are continuously spilled on the surface or released from leaking buried tanks, the wastewater will infiltrate into/through the subsurface and move through the unsaturated zone and finally into the saturated zone. Once migrated into the aquifer the contaminants will migrate down gradient to a possible receptor.</p>	1	2	3	3	3	2	24	L	Low	Negative	<ul style="list-style-type: none"> <li>The design and construction of the WWTP according to the appropriate engineering specifications and standards, ensuring that the facility is a closed system.</li> <li>Inclusion of additional mitigative features such as additional overflow capacity and bunding of infrastructure.</li> <li>Frequent inspection and servicing of the facility.</li> <li>Installation of a dedicated shallow monitoring borehole immediately down gradient of the WWTP, to serve as an early warning detection system for potential contaminants leaking from the infrastructure.</li> <li>Management of the dosing of the final effluent to be proceduralised and maintained.</li> </ul>	1	1	2	2	3	2	18	L
<b>Air Quality</b>																				

OPERATIONAL PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Operation of the relocated Seritarita Secondary School	No additional impacts are expected during the operational phase.																			
<b>Noise</b>																				
Operation of the relocated Seritarita Secondary School	No additional impacts are expected during the operational phase.																			
<b>Heritage</b>																				
Operation of the relocated Seritarita Secondary School	No additional impacts are expected during the operational phase.																			
<b>Traffic</b>																				
Operation of the relocated Seritarita Secondary School	<b>Increase in existing traffic volumes</b> The proposed temporary relocation of the Seritarita Secondary School will generate a maximum of 33 veh/h two-way trips during the AM peak hour and 43 veh/h two-way trips during the PM peak hour on the road network surrounding the new location for the school. This existing road network, even though it is gravel surfaced and not in very good condition, is still operating at well below its capacity as existing traffic volumes are very low. No geometric improvements are therefore recommended for the road network. The additional traffic will, however, have an impact on the condition of the road surface over time as indicated below.	8	2	2	0	1	4	52	M	Medium	Negative	<ul style="list-style-type: none"> <li>Widen, grade and maintain local gravel roads to enhance accessibility to the school and to provide a safer and more reliable roads for all road users.</li> </ul>	4	2	2	0	1	2	18	L
Operation of the relocated Seritarita Secondary School	<b>Increase in pedestrian flows</b> The relocation of the Seritarita Secondary School will generate increased pedestrian activity along the roads in the vicinity of the new location of the school.	8	2	2		1	4	52	M	Medium	Negative	<ul style="list-style-type: none"> <li>Provide grass verges along the main access roads along which scholars are expected to walk as part of the recommended road network upgrades.</li> <li>Provide formal sidewalks within the school precinct with a minimum width of 2.0m to separate vehicular activity from pedestrian activity. Wider sidewalks with a minimum width of 3.0m should be provided at the pick-up/drop off area.</li> </ul>	4	2	2		1	2	18	L
Operation of the relocated Seritarita Secondary School	<b>Localised increase in public transport activities</b> The relocation of the Seritarita Secondary School will result in an increase in public transport vehicles transporting learners and staff to and from school. This public transport activity will be dropping off and picking up passengers at the school.	8	2	2		1	4	52	M	Medium	Negative	<ul style="list-style-type: none"> <li>Provide formal drop-off and pick up area for public transport vehicles.</li> <li>Permit public transport vehicles to park within the pick-up/drop-off area during off-peak times or provide alternative parking for buses and minibuses during off-peak times.</li> </ul>	4	2	2		1	2	18	L
Operation of the relocated Seritarita Secondary School	<b>Decrease of road safety along localised intersections</b> The relocation of the Seritarita Secondary School will result in increased traffic flows and pedestrian activity on the roads surrounding the new location and this will have an adverse impact on road safety conditions, particularly where the pedestrian activity is concentrated at the school access.	8	2	2		1	4	52	M	Medium	Negative	<ul style="list-style-type: none"> <li>Provide speed humps in the gravel road from which the school will take access to reduce the speed of all traffic.</li> <li>Increase road signage in the vicinity of the school by placing W3087 children signs, R201 speed limit and R214 overtaking prohibited signs to slow down vehicles and improve safety near the school along the road from which access is taken to the school.</li> </ul>	4	2	2		1	2	18	L
<b>Social</b>																				
Operation of the relocated Seritarita Secondary School	<b>Establish safe, modern, well-equipped temporary school facility</b> Although the school will be a temporary facility, every effort has been made to ensure that the school will be a modern, well-equipped facility that provides teachers and learners with safe, modern, well-equipped environment that is conducive to learning and caters for sports and recreational needs. Depending on the resettlement process for the villages of Skimming and Leruleng, the lifespan of the temporary school facility is expected to be 2-4 years. However, it has been	6	2	2	1	1	4	48	M	Medium	Positive	<ul style="list-style-type: none"> <li>Establish proposed school and facilities as per design proposal.</li> <li>Provide free wi-fi connection to the school.</li> <li>Establish all weather, artificial (Astroturf) sports field/s.</li> </ul>	8	2	4	2	2	5	90	MH

OPERATIONAL PHASE																				
ACTIVITY	POTENTIAL ENVIRONMENTAL IMPACT	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
	<p>designed to function as a school beyond 2-4 years if required.</p> <p>Based on discussions with representatives from Skimming and Leruleng, the MTC and Seritarita Secondary School the need for the school to be relocated and the establishment of a temporary school to address the health and safety risks to the current Seritarita Secondary School posed by blasting at the South Pit is fully supported. The need to relocate the current school as soon as possible is also fully supported.</p>																			
Operation of the relocated Seritarita Secondary School	<p><b>Improve access to school for adjacent communities</b></p> <p>The location of the temporary school is closer to and more accessible to the communities located to the north-west, west, and south of Skimming and Leruleng. Travel time for learners will therefore be lower. Given that most learners walk to school this will represent a social benefit. This benefit can be enhanced if the school is maintained as a permanent facility after the villages of Skimming and Leruleng have been relocated. The option of maintaining the school as a permanent facility should be discussed with the MTC and affected villages whose children may benefit from such a facility.</p>	6	2	2	1	1	5	60	M	Medium	Positive	<ul style="list-style-type: none"> <li>AAP should engage with MTC, Limpopo Department of Education, MLM and affected villages to assess option of maintaining the school as a permanent facility after the villages of Skimming and Leruleng have been relocated.</li> </ul>	8	2	4	1	1	5	80	MH
Operation of the relocated Seritarita Secondary School	<p><b>Establish educational asset for surrounding communities</b></p> <p>The villages that currently use the Seritarita Secondary School and that are located relatively close to the temporary school site would benefit if the school was established as a permanent facility after Skimming and Leruleng have been relocated. The local communities would also benefit from the facilities associated with the school, including sports fields, borehole, food garden, borehole etc. Establishing the school as permanent facility would also address the negative impacts associated with the closure of the Seritarita Secondary School on learners that are not residents from Skimming and Leruleng.</p>	8	4	2	1	1	4	64	M	Medium	Positive	<ul style="list-style-type: none"> <li>AAP should engage with MTC, Limpopo Department of Education, MLM and affected villages to assess option of maintaining the school as a permanent facility after the villages of Skimming and Leruleng have been relocated.</li> </ul>	8	4	2	1	1	5	80	MH



## **Impacts during decommissioning and closure phase**

As the relocation of the Seritarita Secondary School is considered a temporary project, high level closure impacts have been considered.

### **Soils**

The impacts on the soil resource during the decommissioning and closure phase will potentially have both a positive and a negative effect, with:

- Compaction and dust contamination due to vehicle movement while decommissioning and closure and rehabilitation of the project area is undertaken.
- Hydrocarbon or chemical spillage from contractor vehicles undertaking decommissioning and closure activities.
- Positive impacts of reduction in areas of disturbance and return of soil utilisation potential, uncovering of areas of storage and rehabilitation of compacted materials.

### **Biodiversity**

Re-vegetation of areas where demolition and clearing of surface infrastructure has taken place will positively impact on the biodiversity of the area. Strict rehabilitation management measures should be implemented to ensure establishment of indigenous vegetation of rehabilitated areas.

Should no rehabilitation and re-vegetation take place during the closure phase, it is anticipated that erosion and further loss of biodiversity will be eminent. The cleared areas will encourage infestation of alien invasive species that will further degrade the natural occurring biodiversity.

### **Surface Water**

Although there are no surface water resources (rivers) in close proximity to the proposed relocated Seritarita Secondary School, surface run-off may be contaminated by activities on site due to spillage of hydrocarbons or other hazardous material during the demolition of infrastructure.

### **Groundwater**

After decommissioning and closure the groundwater abstraction will cease and any drawdown in groundwater level will stop and the groundwater level will recover to pre-usage levels.

Contamination from the school will decrease due to the rehabilitation of the area. This will reduce or remove impacts on the groundwater environment.

### **Air Quality**

Potential dust impacts during decommissioning and closure will include demolition, land clearing, bulldozing and compaction. This will result in an increase in nuisance dust impacts associated with fugitive dust emissions.

However, the extent of the dust emissions is likely to be short term and varying depending on the level of activity and meteorological conditions. Dust impacts will also be site specific as clearing activities will be limited to the immediate footprint of the relocated Seritarita Secondary School and will only be during the decommissioning phase.

## **Noise**

A general rise in ambient noise levels are expected during the decommissioning and closure, due to the movement on construction vehicles, undertaking of earthworks and general demolition activities.

## **Heritage**

No impacts on heritage resources are expected during the decommissioning and closure phase.

## **Social**

Approximately 25% of the learners at the Seritarita Secondary School are from Skimming and Leruleng, while 40% are from Armoede and Rooibokfontein located ~ 15 km to the northeast of the site. Therefore, reasonable to assume that ~ 35% of the remaining learners come from the surrounding villages in the area including Ga-Chaba, Matopa, Hans, Ga-Seema, Magope and Mmamala. The learners (current and future) from these villages will therefore be negatively impacted if the temporary school established to replace the Seritarita Secondary School is closed once the villages of Skimming and Leruleng are resettled. The Digby Wells Survey (2021) also found that the villages of Ga-Chaba, Matopa, Magope and Mmamala did not have access to secondary schools in their villages (TBEC, 2023).

The SIA did not include an assessment of the capacity of other Secondary Schools in the area to accommodate learners from the villages listed above. However, given that learners from these villages currently attend Seritarita Secondary School it is reasonable to assume that the capacity to accommodate new learners in existing schools is limited. The pressure on existing schools will increase with population growth in the area. The MLM IDP and Spatial Development Framework (SDF) identify Mokopane as a place of opportunity, specifically amongst communities in the Limpopo Province (TBEC, 2023).

The loss of the Seritarita Secondary School will therefore impact on learners (current and future) from villages other than Skimming and Leruleng that attend (current and future) the school. In the case of the current learners, they will be impacted when the temporary school closes (2-4 years). In the case of future learners, they may find that places available in other schools are limited. The closure of the temporary facility will therefore reduce their choice of potential options. The closure of the temporary facility will also place pressure on the existing schools in the catchment area for the Seritarita Secondary School. This pressure may not be offset by the establishment of a new permanent school in the area where the villages of Skimming and Leruleng are resettled to (TBEC, 2023).

At the time of undertaking the SIA the area for the establishment of the resettled villages of Skimming and Leruleng and new permanent replacement for the Seritarita Secondary School has not been identified. The accessibility for learners from the surrounding villages currently served by the school will depend on the location of the new permanent school. However, until the site is confirmed it is assumed that the location of the new permanent school will further away than the temporary school for the majority of the learners (TBEC, 2023).

This will impact on the ability of learners to walk to school. Approximately 30% of current learners walk to school, and the affordability for the 30% of learners that rely on arranged mini-bus school transport or private vehicles that is not funded or subsidised by MM. The learners from Armoede and Rooibokfontein may also be negatively impacted if the distance to the new permanent school associated with the resettlement of Skimming and Leruleng is significantly greater than the current distance of 15 km. This would result in longer travel times and associated fatigue and productivity related impacts and increase in potential for traffic related accidents (TBEC,

2023).

Depending on the location of the permanent facility the closure of the temporary facility has the potential to impact on ~ 75% of the current student body. This represents the most significant impact associated with the project. The impact on these learners must be addressed before a decision is taken to close the facility (TBEC, 2023).

### **Alternative (preferred alternative)**

Refer to Table 25 and Table 26.

## **3. ENVIRONMENTAL IMPACT STATEMENT**

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### **Alternative A (preferred alternative)**

#### **Soils**

Two main sensitive soil forms were identified within the assessment area, namely the Valsrivier and Swartland soil forms. The land capability data (DAFF, 2017) indicate land capabilities with “Low to Moderate” and “Moderate to High” sensitivities, which correlates and concur with the findings in some areas with “Moderate” sensitivity to the baseline assessment. The land potential falls mostly within “Moderately Low” sensitivities which also concur with some sections from the DAFF (2017) dataset. The soil baseline assessment findings also dispute some of the areas which were categorised as “High” following the DEA (2023) agricultural theme screening tool. The project area is therefore assigned an overall sensitivity of “Moderate” land capability with a “Moderately Low” land potential (TBC1, 2023).

The available climatic conditions of low annual rainfall and high evapotranspiration potential severely limits crop production significantly resulting in land capabilities with “Low” and “Moderate” sensitivities. The land capabilities associated with the assessment area are suitable for natural veld and livestock grazing, which corresponds with the current land use (TBC1, 2023).

It is the specialist’s opinion that the proposed Seritarita Secondary School project and associated infrastructure will have an overall low residual impact on the agricultural production ability of the land. It is the specialist’s recommendation that the proposed Seritarita Secondary School project and associated infrastructure may be favourably considered for development with implementation of mitigation measures (TBC1, 2023).

#### **Terrestrial Biodiversity**

The habitat has been classified as disturbed Bushveld. The term "Disturbed Bushveld" refers to the condition of the Makhado Sweet Bushveld found in the area and the degree (or extent) of disturbance to the structure and composition of the habitat type. This disturbance is attributed to human activities in the area, specifically vegetation clearing for subsistence agriculture. This clearing required the removal of plant/tree species

representative of the vegetation type, with the vegetation type now representing cleared areas (vegetation loss) and the encroachment of invasive species (TBC2, 2023).

The project area is disturbed, but supports several common indigenous fauna and flora species, such as scrub hare (*Lepus saxatilis*), common duiker (*Sylvicapra grimmia*) and Nationally protected tree species. The project area has however been altered both currently and historically and due to the bush encroachment, the potential for this site to support fauna specifically is very low. The present land use has a direct impact on the fauna and the flora in the area, which is evident in the disturbed habitats. Historical overgrazing from cattle, subsistence farming and mismanagement has led to the deterioration of most of the area that is either encroached or transformed. It is important that the management outcomes presented above be adhered to in order to properly mitigate the negative environmental impacts that will stem from the project activities, including obtaining the relevant permits for removal of protected trees (TBC2, 2023).

Completion of the terrestrial biodiversity assessment led to a validation of the 'Low' classification for the terrestrial biodiversity theme sensitivity as allocated by the National Environmental Screening Tool. The project area is assigned an overall sensitivity of 'Low', due to the anthropogenic disturbance, and small size. Once construction has ceased and the disturbed areas have been rehabilitated there is likely to be a net biodiversity gain on the site, due to the low biodiversity of the site (TBC2, 2023).

It is the opinion of the specialists that the project may be favourably considered, provided that the mitigation measures presented in this report be implemented, along with the recommendations below. The location and size of the ecosystem means that it is unlikely that any functional habitat or SCCs will be lost as a result of the impacts arising from the proposed activities (TBC2, 2023).

### **Groundwater**

Groundwater resource potential at the relocation area (Geostratum, 2023):

- According to the 1:250 000 Geological Map – 2328 Pietersburg, the relocation area is underlain by igneous rocks (such as gabbro, norite and anorthosite) of the Rustenburg Layered Suite. No significant geological structures intersect the relocation area.
- According to the 1:500 000 Hydrogeological Map – 2326 Polokwane, the hydrogeology of the relocation area is characterised by generally high-yielding fractured and intergranular aquifers, with median borehole yields of 2-5 l/s.
- The overall groundwater potential of the regional aquifer is generally good and is readily exploited for large-scale irrigation and mining activities.
- In the Mokopane area, groundwater tends to occur in deep weathered and/or fractured basins and these are noted to be very productive aquifers due to their high permeability.
- The potential for groundwater exploitation at the relocation site good and geophysical exploration is recommended.

Aquifer Vulnerability and Risk profile of the proposed waste water treatment plant (WWTP) (Geostratum, 2023):

- According to the aquifer vulnerability assessment, a level of protection that ensures non-degradation of the aquifer system is recommended.

- It is expected that without mitigation and proper construction a medium negative impact can be expected from the proposed WWTP. However, with mitigation measures in place and ensuring the facility remains a closed system, a low impact can be expected.
- The study concluded that the proposed WWTP will pose a low risk to groundwater quality if the proposed monitoring and applicable mitigation measures are implemented. No notable environmental receptors exist near and downgradient of the WWTP. Boreholes that could potentially be in use by community members do exist downgradient of the WWTP.

### **Heritage and palaeontology**

The project area used to be part of the larger Mapela irrigation scheme that contributed to the founding of Skimming, and has been transformed through cultivation which would have impacted on tangible heritage resources if any were present in the project footprint. This was corroborated by the community representatives (Mr Percy and James Nyatlo) that were nominated by the Traditional Council who are not aware of any heritage resources in the study area although the irrigation scheme is of significance to the Skimming residents. According to the SAHRA Paleontological sensitivity map the study area is of insignificant paleontological significance and no further studies are required for this aspect (Beyond Heritage, 2023).

The impact to heritage resources is low provided that the recommendations in this report are adhered to, based on the South African Heritage Resource Authority (SAHRA) 's approval (Beyond Heritage, 2023).

### **Traffic**

From the traffic count undertaken at the school access intersection, the Seritarita Secondary School generates a total of 33 veh/h two-way trips during the AM peak hour and 43 veh/h two-way trips during the PM peak hour (Zutari, 2023).

The proposed temporary relocation of the Seritarita Secondary School is expected to generate an increase in existing traffic volumes in the vicinity of the new school location. Most of the roads within the vicinity of the new school location are not in very good condition which will affect the accessibility of the school especially in adverse weather conditions (Zutari, 2023).

The proposed temporary relocation of the Seritarita Secondary School is expected to generate an increase in pedestrian activity in the vicinity of the school. It is therefore recommended that grass verges be provided along the main access roads for these pedestrians especially in adverse weather conditions (Zutari, 2023).

The proposed temporary relocation of the Seritarita Secondary School is expected to generate an increase in public transport activity in the vicinity of the new location of the school (Zutari, 2023).

The proposed temporary relocation of the Seritarita Secondary School is expected to result in increased conflict between vehicular traffic and pedestrian activity resulting in reduced road safety conditions (Zutari, 2023).

Several mitigation measures have been recommended to lower the identified impacts. If these are implemented, proposed temporary relocation of Seritarita Secondary School can be supported from a traffic and transportation perspective provided the mitigation measures recommended are implemented as part of the school development (Zutari, 2023).

### **Socio-economic**



The findings of the SIA confirm and support the need to relocate the Seritarita Secondary School within the next 12 months and establish a temporary school facility on the preferred site. Representatives from Skimming and Leruleng, MTC, MLM and Seritarita Secondary School also support the need for the school to be relocated and the establishment of a temporary school to address the health and safety risks to the current Seritarita Secondary School posed by blasting at the South Pit . The need to relocate the current school as soon as possible was fully supported (TBEC, 2023).

The findings of the SIA also indicate that depending on the location of the permanent facility the closure of the temporary facility has the potential to impact on ~ 75% of the current student body. This represents the most significant impact associated with the project. The impact on these learners must be investigated before a decision is taken to close the facility. In this regard the option of maintaining the facilities associated with the temporary facility should be investigated and discussed with representatives from the MTC, Limpopo Department of Education and local villages in the area. Maintaining the temporary facility once the villages of Skimming and Leruleng have been resettled could create a potential opportunity to provide local communities in the area with a modern, well-designed educational asset. The sports and recreational facilities could also benefit local communities. Maintaining the temporary facility would also potentially reduce the impact of the closure of temporary facility on learners from villages other than Skimming and Leruleng that attend Seritarita Secondary School (current and future) (TBEC, 2023).

Alternatively, AAP in collaboration with the Limpopo Department of Education should investigate the option of increasing the capacity of existing schools in the doorstep and host communities located to the west of the Mogalakwena Mine to accommodate learners impacted by the closure of the temporary facility (TBEC, 2023).

Considering the above discussion, it is recommended that the proposed Seritarita Secondary School temporary relocation project be supported on the condition that all mitigation measures listed in this Basic Assessment Report, the specialist reports and the EMPr are implemented and adhered to throughout the project life.

### **No-go alternative (compulsory)**

The no-go alternative is the option of not undertaking the proposed activity or any of its alternatives. Should the proposed Seritarita Secondary School relocation not go ahead, any potential environmental impacts, associated with construction and operation of the relocated school, would be avoided.

However, if the school is not relocated, the safety of learners, employees and parents remain at risk, due to the close proximity of the school to the current Mogalakwena Mine mining opencast activities.

Considering the above, as well as that all negative impacts can be adequately mitigated and managed, it is not recommended that the No-go Alternative be supported

### **Alternative B**

**Not applicable**

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**Alternative C**

**Not applicable**

**For more alternatives please continue as alternative D, E, etc.**

**SECTION E. RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

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If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the department in respect of the application:

The following recommendations were made by the specialists in their reports (refer to Appendix D).

**Groundwater:**

Groundwater resource development:

- It is recommended to conduct an Electrical Resistivity Tomography (ERT) survey at the relocation site in order to identify potential borehole drilling targets by delineating potential preferential pathways for groundwater flow.
- If a successful borehole is drilled, a 24-hour constant discharge pumping test should be conducted in order to determine the sustainable yield of the borehole.
- A detailed abstraction schedule for the borehole should be included upon completion of the aquifer testing.
- Electronic groundwater level monitoring of the borehole should be included upon successful installation of the borehole.

Monitoring of the proposed waste water treatment plant (WWTP):

- Housekeeping and regular inspections of the facility should be carried out.
- It is recommended that a dedicated shallow monitoring borehole (10 to 15 meters deep) be drilled immediately downgradient of the WWTP, which is to serve as an early warning detection system of potential contamination originating from the facility (refer to Figure 22).
- The water quality and level of the monitoring borehole should be monitored quarterly. Water quality

parameters to be analysed for should include bacteria, faecal coliforms, total coliforms, E. coli as well as the standard inorganic parameters analysed for in a typical SANS 241-1 (national drinking water standards) test.



**Figure 22: Proposed monitoring borehole location for the WWTP**

### **Soils:**

All contractors must have spill kits available and be trained in the correct use thereof.

All contractors and employees should undergo induction which is to include a component of environmental awareness. The induction is to include aspects such as the need to avoid littering, the reporting and cleaning of spills and leaks and general good “housekeeping”.

### **Heritage:**

Vegetation clearing in the project site should be conducted prior to construction and monitored by an archaeologist.

Monitoring of the project area by the ECO during pre-construction and construction phases for heritage chance finds, if chance finds are encountered to implement a Chance Find Procedure for the project as outlined in Appendix A of the Heritage Impact Assessment (Appendix D5 of this report).

### **Traffic:**

Gravel roads should be appropriately widened, graded and maintained to enhance accessibility to the school and to provide a safer and more reliable roads for all road users.

Provide formal sidewalks within the school premises along the access roads and at the formal drop-off and pick-up

area.

Provide a formal pick-up and drop off facility is provided within the school premises to minimise the impact of buses and minibus taxis stopping within the public roadway and impeding the flow of traffic on these roads especially during school start and end times when vehicular traffic and pedestrian activity will be at its peak. It is further recommended that these public transport vehicles be permitted to park within this pick-up / drop-off area during off-peak times or alternative parking is provided for these buses and minibuses during off-peak times.

Implement additional road signage, including W308 children signs, R201 speed limit signs and R214 overtaking prohibited signs to slow down vehicles and improve safety near the school. It is therefore recommended that speed humps be graded into the gravel road where the access intersection will be located as part of the recommended road upgrades. It is further recommended that that W308 children signs and R201 speed limit signs are erected along the road from which access is taken to the school to further improve safety near the school.

**Social:**

AAP should engage with MTC, Limpopo Department of Education, MLM and affected villages to assess how best to address the impact of the closure of the temporary facility on learners that do not live in Skimming and Leruleng. This includes the options of maintaining the facilities associated with the temporary facility, up-grading and increasing the capacity of existing schools in the doorstep and host communities located to the west of MM and the provision of mine sponsored school transport.

AAP should investigate the option of establishing an artificial, all weather AstroTurf sports field as part of the development. The establishment of an all-weather AstroTurf facility can also continue to be used by the local communities in the area if the temporary school is dismantled and removed.

**YES**

Is an EMPr attached?

The EMPr must be attached as Appendix F.

**SECTION F: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Public Participation

Appendix F: Environmental Management Programme (EMPr)

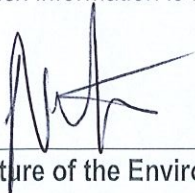
Appendix G: Other information



## SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, Suzanne van Rooy declare that I –

- (a) act as the independent environmental practitioner in this application;
- (b) do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- (c) do not have and will not have a vested interest in the proposed activity proceeding;
- (d) have no, and will not engage in, conflicting interests in the undertaking of the activity;
- (e) undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- (f) will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- (g) will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the Department in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the Department may be attached to the report without further amendment to the report;
- (h) will keep a register of all interested and affected parties that participated in a public participation process; and
- (i) will provide the Department with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.



\_\_\_\_\_  
Signature of the Environmental Assessment Practitioner:

Alta van Dyk Environmental Consultants cc

\_\_\_\_\_  
Name of company:

05/09/2023

\_\_\_\_\_  
Date:



## REFERENCES

Beyond Heritage, 2023. Heritage Impact Assessment for the proposed temporary relocation of Seritarita Secondary School, Mogalakwena Mine, Limpopo Province. Report No. 23048. May 2023.

Geostratum Water Management Consultants (Pty) Ltd (Geostratum), 2023. Seritarita Secondary School Relocation Project – Hydrogeological Baseline Risk Assessment. Report No. KT05\_23. May 2023.

SLR Consulting South Africa (Pty) Ltd (SLR), 2022. Anglo Mogalakwena Mine Dust Fallout Monitoring Report: October 2022. Reference Number: 720.01145.00001. October 2022.

The Biodiversity Company (TBC1), 2023. Soil and Agricultural Potential Assessment Report for the Temporary Relocation of the Seritarita Secondary School Project. May 2023.

The Biodiversity Company (TBC2), 2023. Terrestrial Biodiversity Compliance Statement for the proposed Seritarita Secondary School Temporary Relocation. May 2023.

The Biodiversity Company (TBC3), 2023. Wetland Delineation and Functional Assessment for the proposed Seritarita Secondary School Temporary Relocation. May 2023.

Tony Barbour Environmental Consulting (TBEC), 2023. Social Impact Assessment Seritarita Secondary School Relocation. June 2023.

uMoya-NILU Consulting (Pty) Ltd (uMoya), 2023. Air Quality Assessment to support the proposed future mining at the Mogalakwena Platinum Mine – specifically focusing on the transition of the Sandsloot Mine from an open pit to underground mining method. Report No. uMN029-23. May 2023.

Zutari (Pty) Ltd (Zutari), 2023. Seritarita Secondary School Temporary Relocation - Traffic Impact Assessment. Reference Number: 1002709. June 2023.

## APPENDIX A: SITE PLAN

## APPENDIX B: PHOTOGRAPHS

## APPENDIX C: FACILITY ILLUSTRATION

## APPENDIX D: SPECIALIST REPORTS



# APPENDIX D1: GROUNDWATER REPORT

## APPENDIX D2: FRESHWATER REPORT

## APPENDIX D3: SOILS REPORT

## APPENDIX D4: TERRESTRIAL BIODIVERSITY REPORT

## APPENDIX D5: HERITAGE IMPACT ASSESSMENT



## APPENDIX D6: TRAFFIC IMPACT ASSESSMENT

## APPENDIX D7: SOCIAL IMPACT ASSESSMENT

## APPENDIX D8: SPECIALIST DECLARATION FORMS

## APPENDIX E: PUBLIC PARTICIPATION

## APPENDIX E1: PRE-APPLICATION MEETING PRESENTATION (9 MAY 2023)



## APPENDIX E2: MINUTES OF PRE-APPLICATION MEETINGS (9 MAY 2023)

# APPENDIX E3: BACKGROUND INFORMATION DOCUMENT

## APPENDIX E4: COMMENT AND RESPONSE REPORT

## APPENDIX E5: CONSULTATION WITH AUTHORITIES

## APPENDIX E6: PROOF OF DISTRIBUTION OF BID

## APPENDIX E7: PROOF OF SITE NOTICE



## APPENDIX E8: ADVERTISEMENT

## APPENDIX E9: NOTIFICATION LETTER

## APPENDIX E10: PROOF OF DISTRIBUTION OF NOTIFICATION LETTER

## APPENDIX E11: PROOF OF SMS DISTRIBUTION

## APPENDIX E12: LIST OF STAKEHOLDERS

## **APPENDIX E13: FEEDBACK MEETING PRESENTATION (27 JULY 2023)**



## APPENDIX E14: MINUTES OF FEEDBACK MEETINGS (27 JULY 2023)

## APPENDIX E15: COMMENTS RECEIVED

## APPENDIX F: ENVIRONMENTAL MANAGEMENT PROGRAMME

## APPENDIX G: OTHER INFORMATION

# APPENDIX G1: SCREENING TOOL REPORT

## APPENDIX G2: WASTE WATER TREATMENT PLANT



## APPENDIX G3: GEOTECHNICAL ASSESSMENT