Site Sensitivity Verification Report
Agricultural Theme

Midas Battery Energy Storage Systems Project

15 July 2024

Prepared by:

The Biodiversity Company

Cell: +27 81 319 1225

Fax : +27 86 527 1965

info@thebiodiversitycompany.com

www.thebiodiversitycompany.com

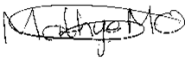
Project Title	**Midas Battery Energy Storage Systems Project**	
Report Name	Site Sensitivity Verification Report	
Specialist Theme	Agricultural Theme	
Project Reference	Midas BESS SSVR	
Date	15 July 2024	
Report Writer	Cathrine Mathye (SACNASP 127950)	
Reviewer	Andrew Husted (SACNASP 400213/11)	
Declaration	The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, Amended. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.	

Table of Contents

List of Tables

List of Figures

1 Introduction

The Biodiversity Company was appointed to conduct a Site Sensitivity Verification (SSVR) for the proposed Midas Battery Energy Storage System (BESS) Project. The project site is located approximately 18 km east of the town of Carletonville and approximately 13 km northeast of the town of Fochville. The Project Area is located in the Gauteng Province within the Rand West City Local Municipality and in the West Rand District Municipality. The proposed BESS and associated infrastructure are collectively referred to as the Project Area for reporting purposes (Figure 1-1).

The approach adopted for this assessment has taken cognisance of Government Notice 320 in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) dated 20 March 2020: "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 NEMA, 1998, when applying for Environmental Authorisation". The National Web based Environmental Screening Tool (DFFE, 2024) has characterised the agricultural theme sensitivity of the project area as predominantly "High", with a key consideration of this assessment being the determination of agricultural theme sensitivities for the project. However, according to the Government Gazette 43110, Government Notice No. 320, a site is found to be of a "medium" or "low" sensitivity if the application is for a linear activity, for which impacts on the agricultural resource are temporary and the land in the opinion of the soil scientist or agricultural specialist, based on the mitigation and remedial measures, can be returned to the current land capability within two years of the completion of the construction phase. Therefore, the proposed project area was found to have a low sensitivity.

This report aims to present and discuss the findings from the soil resources identified within the 50 m buffered area. The report will also identify the soil suitability and land potential of these soils, the land uses within the assessment area and the risks associated with the proposed Midas BESS Project from an agricultural and soil resources management perspective.

This report should be interpreted after taking into consideration the findings and recommendations provided by the specialist (Section 4 of this report). Further, this report should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision making, as to the soil resources of the proposed project.

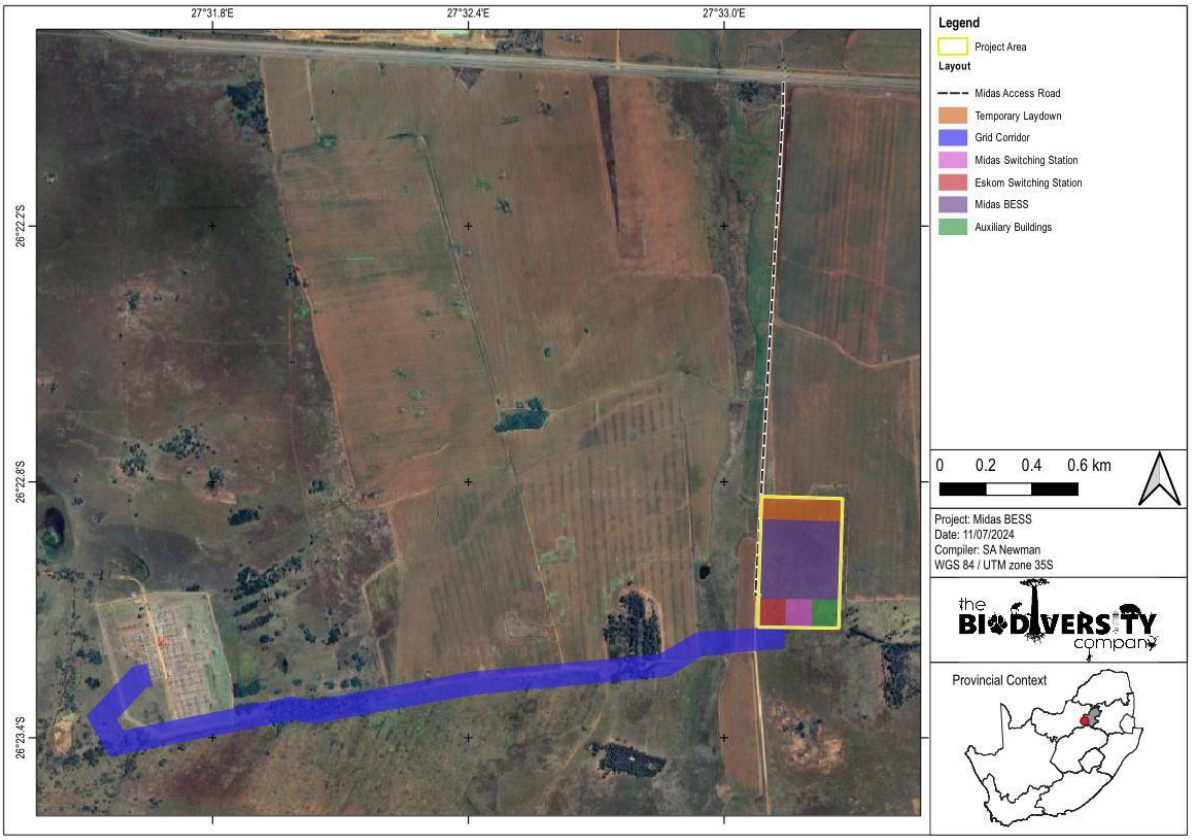


Figure 1-1 Project components

1.1 Legal Framework

The site sensitivity verification must be undertaken:

- For the footprint on which the proposed activities are proposed to take place;
- By specialists, registered in the field for which they are undertaking the site sensitivity verification; and
- For a period of time as necessitated by the sensitivity of the proposed site and size of the proposed facility.

1.2 Project Description

Midas BESS (Pty) Ltd ('the Applicant') is proposing the construction of the Midas Battery Energy Storage (BESS) Facility, located on Portion 10 of the Farm Uitval No. 280, approximately 18 km east of Carletonville in the Gauteng Province. The Applicant is also proposing to utilise the existing public road on Portion 8 and Portion 10 of the Farm Uitval No. 280 to access the site.

The Midas BESS facility will have a total development footprint of up to approximately 15 ha and will have a maximum export capacity of 77 MW. The development area is situated within the Merafong City Local Municipality and the Rand West City Local Municipality. The site is accessible via existing gravel roads from the R501 and N12.

The proposed Midas BESS will cover approximately 15 ha and will include the following infrastructure:

- Solid State Battery Energy Storage System (BESS) (up to 10 ha);

- Inverters and transformers;
- Site and internal access roads (up to 8m wide);
- Operation and Maintenance buildings including a gate house and security building, control centre, offices, warehouses and workshops for storage and maintenance (up to 1 ha);
- Laydown areas (3 ha temporary and 1 ha permanent);
- A 132 kV facility substation (up to 1 ha); and
- 33 kV cabling between the project components and the facility substation.

1.3 Scope of Work

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 NEMA, 1998, when applying for environmental authorisation the current use of the land and the environmental sensitivity of the site under consideration as identified by the national web-based environmental screening tool, must be confirmed by undertaking a site sensitivity verification.

The outcome of this site sensitivity verification is to:

- Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool; and
- Motivate and provide evidence of either the verified or different use of the land and environmental sensitivity of the site.

2 Approach

The field survey was conducted from 10th of July 2024. A CV and specialist declaration are provided in the appendices. A verification report has been prepared in accordance with the Specialist Assessment and Minimum Report Content Requirements for an Agricultural Agro-Ecosystem Specialist Assessment (Government Notice 320, dated 20 March 2020).

2.1 Assumptions and Limitations

The following is applicable:

- The information contained in this report is based on previously surveyed desktop data and verified observations on site. There may be variations in terms of the delineation of the soil forms across the area; and
- The GPS used for delineations is accurate to within five meters. Therefore, the delineation plotted digitally may be offset by at least five meters to either side.

3 Results & Discussion

3.1 Description of Soil Forms and Soil Families

During the site assessment various soil forms were identified (Table 3-1). These soil forms are described in according to depth, clay percentage, indications of surface crusting, signs of wetness and percentage rock. The soil forms are followed by the soil family and in brackets the maximum clay percentage of the topsoil. Soil family characteristics are described in Table 3-2 below. Furthermore,

different soil forms identified within the proposed project area, field work tracks and dominant land uses are illustrated in Figure 3-1, Figure 3-2, and Figure 3-3, respectively.

Table 3-1 Summary of soils identified within the project areas

Diagnostic Horizon		Soil Forms		
		Glenrosa	Ermelo	Hutton
Topsoil	Depth (mm)	0-100	0-300	0-300
	Clay (%)	0-15	0-15	0-15
	Signs of Wetness	None	None	None
	Rock (%)	0	0	0
	Surface crusting	None	None	None
Subsoil B1	Depth (mm)	100-150	300-1200	300-1200
	Clay (%)	0-15	0-15	0-15
	Signs of Wetness	None	None	None
	Rock (%)	50	5	5
Subsoil B2	Depth (mm)	-	-	-
	Clay (%)	-	-	-
	Signs of Wetness	-	-	-
	Rock (%)	-	-	-

Table 3-2 Description of soil family characteristics

Soil Form/Family	Topsoil Colour	Base Status	Textural Contrast
Glenrosa	Chromic Topsoil	Mesotrophic	Aluvic
Hutton	Chromic Topsoil	Mesotrophic	Luvic
Ermelo	Chromic Topsoil	Mesotrophic	Luvic

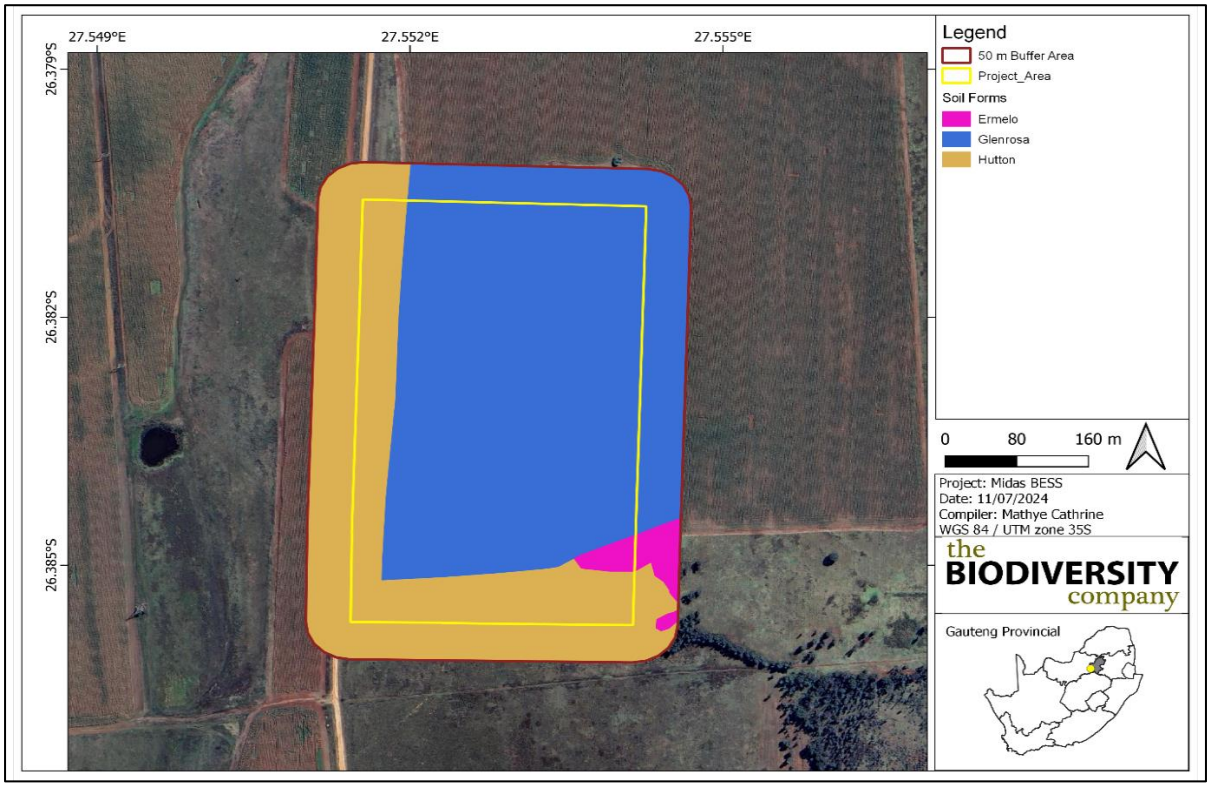


Figure 3-1 Dominant soil forms distribution identified in the project area during the site assessment

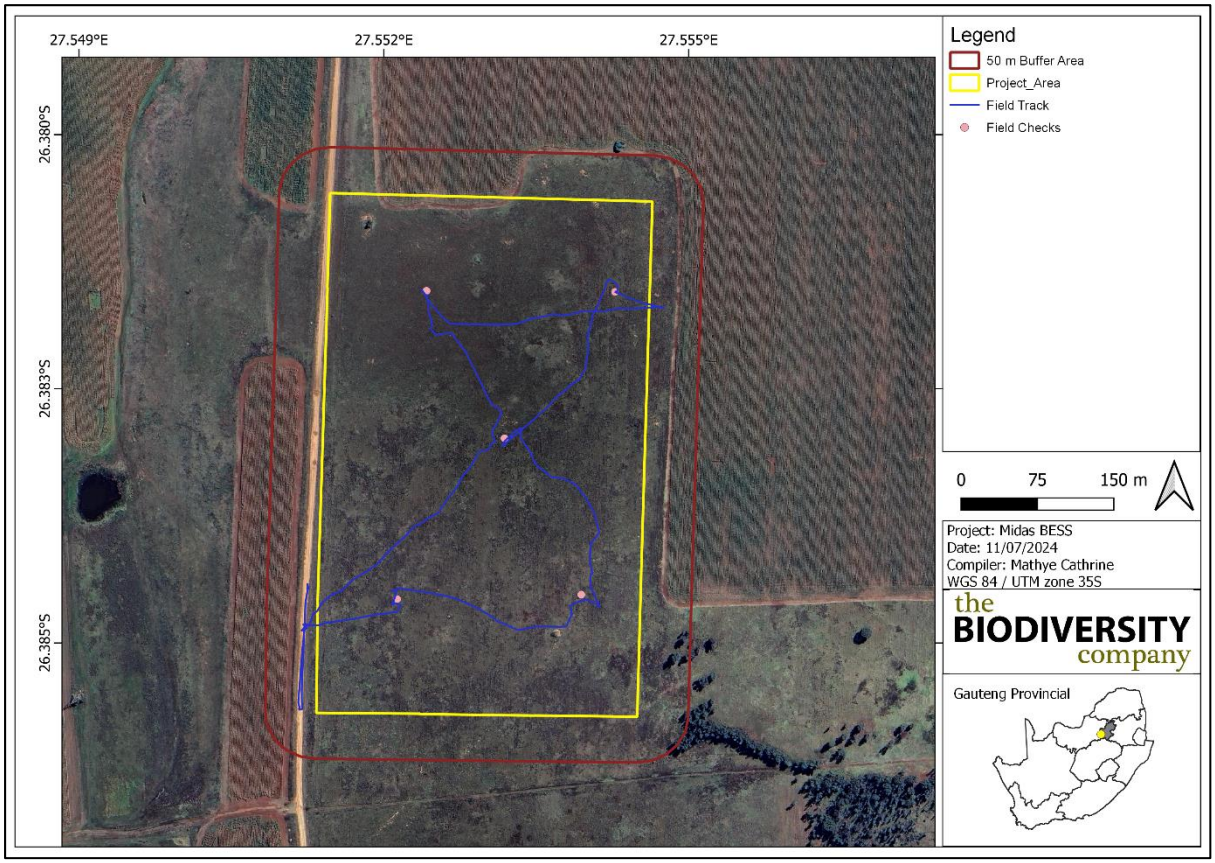


Figure 3-2 Map illustrating the field work tracks for the proposed project area

Figure 3-3 Soil forms and diagnostic horizons identified on-site: A) Ermelo soil form (Orthic/ Yellow-brown horizon); B) Red apedal subsurface horizon from Hutton soil forms; C) Glenrosa soil form.

3.2 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.

3.3 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) (see Table 3-3).

Table 3-3 Climatic capability (step 1) (Scotney et al., 1987)

Carletonville Dolomite Grassland 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), 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 (i.e. Carletonville Dolomite Grassland, MAP 593 mm and MAPE of 2388 mm with a pan Class of 0.25) has been determined to be "C8" for the project area, no further steps will be taken to refine the climate capability.

3.4 Land Capability

The land capability was determined by using the guidelines described in "The farming handbook" (Smith, 2006). Accordingly, the identified soil forms associated with the project area are restricted to land capability 3 and 6 classes.

Table 3-4 Land capability for the soils within the project area

Land Capability Class	Definition of Class	Conservation Need	Use-Suitability	Land Capability Group	Sensitivity
3	Moderate limitations. Some erosion hazard.	Special conservation practice and tillage methods.	Rotation of crops and ley (50%).	Arable	Medium
6	Limitations preclude cultivation. Suitable for perennial vegetation.	Protection measures for establishment e.g. sod seeding.	Veld, pasture and afforestation.	Non-arable	Low

3.5 Land Potential

The methodology in regard to the calculations of the relevant land potential levels are illustrated in Table 3-5 and Table 3-6. From the two land capability classes, the land potential levels have been determined by means of the Guy and Smith (1998) methodology. Land capability class III has been reduced to land potential 6 and Land Capability class 6 has been reduced to a land potential level L7 due to climatic limitations (see Table 3-5).

Table 3-5 Land potential from climate capability vs land capability (Guy and Smith, 1998)

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 3-6 Land potential for the soils within the project area (Guy and Smith, 1998)

Land Potential	Description of Land Potential Class	Sensitivity
6	**Very restricted potential**. Regular and/or severe limitations due to soil, slope and temperature or rainfall. Non-arable	Low
7	**Low potential.** Severe limitations due to soil, slope and temperature or rainfall. Non-arable.	Low
Disturbed	N/A	None

The following land potential level have been determined;

- Land potential level 6 (this land potential is characterised by very restricted potential. Regular and /or severe limitations due to soil, slope, temperature, or rainfall); and
- Land potential level 7 (land potential level is characterized by a low potential with a severe limitation due to soil, slope, temperatures, or rainfall).

Land potential of the proposed area is illustrated in Figure 3-4.

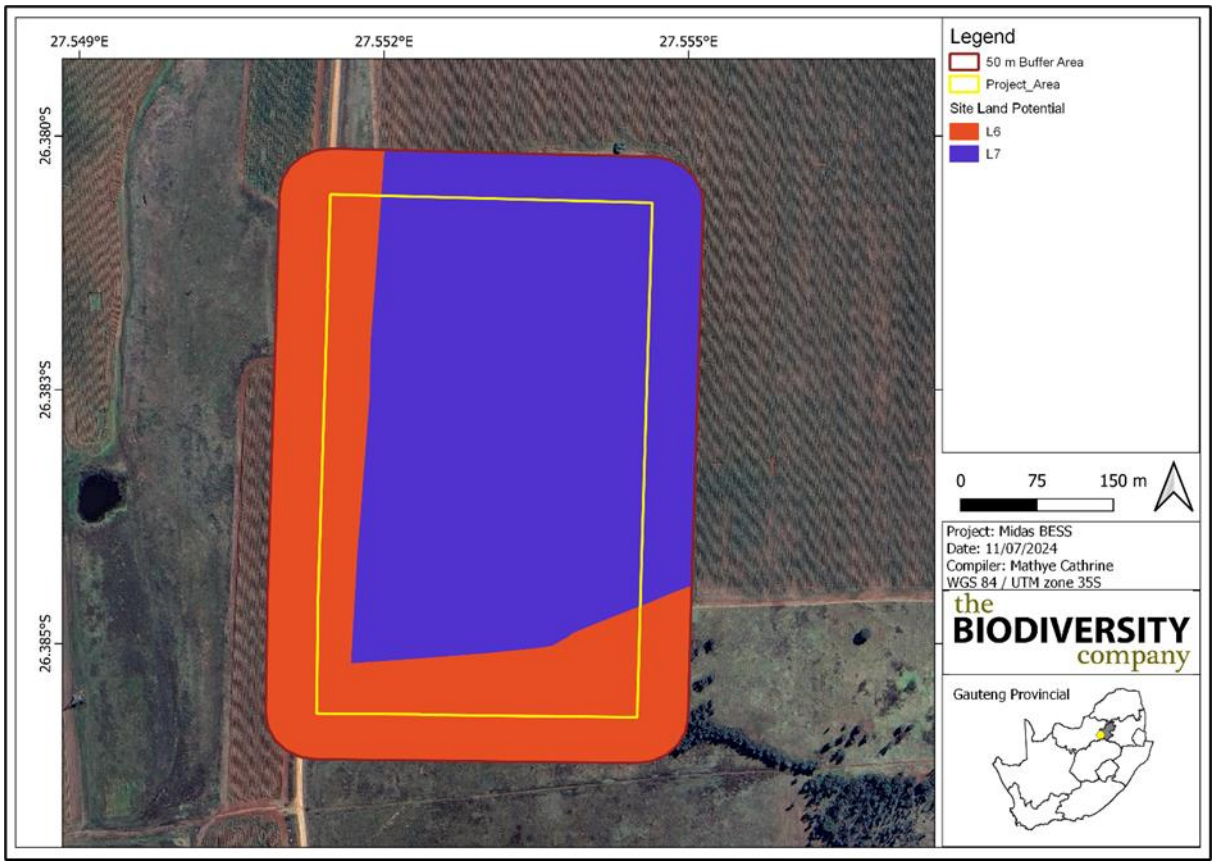


Figure 3-4 Land Potential within the 50 m Buffer area of the Project Area.

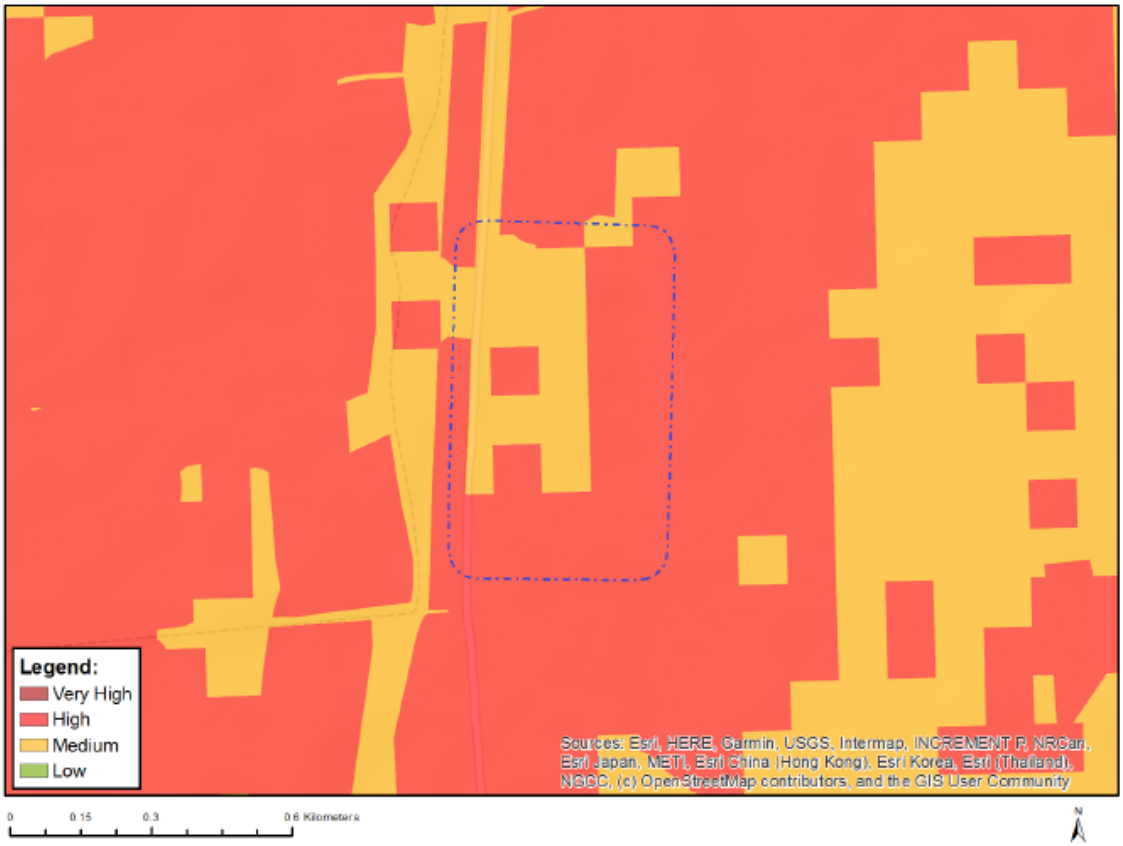
4 Screening Tool

4.1 Screening Report

The following is deduced from the National Web-based Environmental Screening Tool Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended):

- Agriculture Theme Sensitivity indicates that the proposed project area falls within the “Medium to High” agricultural sensitivity (Figure 4-1).

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
High	Annual Crop Cultivation / Planted Pastures Rotation;Land capability;09. Moderate-High/10. Moderate-High
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

Figure 4-1 Agricultural Theme Sensitivity

Fifteen land capabilities have been digitised by (DAFF, 2017) across South Africa, of which five potential land capability classes are located within the proposed footprint area's assessment area, including;

- Land Capability 6 to 8 (Low to Moderate Sensitivity); and
- Land Capability 9 to 10 (Moderate to High Sensitivity).

The land capability dataset (DAFF, 2017) indicates a varied range of land capabilities expected throughout the project area falls within the "Low Moderate to Moderate" sensitivities and "Moderate High" sensitivities (Figure 4-2). Furthermore, "Highly" sensitive field crop boundaries were also identified within the 50 m buffer area of proposed project area (DFFE, 2024), with the help of the agricultural theme tool (Figure 4-3).

The baseline soil findings, current land uses and the calculated land potential concur with the agricultural theme in areas associated with sensitivities ranging from "Low Moderate to Moderate". The soils such as Hutton and Ermelo soil forms are deep, well-drained, and have good aeration with medium agricultural potential. They further dispute the agricultural theme tool in areas associated with "Moderate-High" sensitivities and "highly" sensitive field crop boundary.

In addition, no farming activities were confirmed within the project area. There is no irrigation infrastructure such as centre pivots or drip irrigation that was identified within the proposed project area. Glenrosa is the dominant soil form found within the proposed project area comprised of orthic horizon and lithic sub soil horizon with weak to moderate structure. It has shallow rooting depth due to the presence of fragmented rock which restrict growth of deep-rooted crops. It also has a low land capability sensitivity due to their low suitability for crop production because of impermeable subsoil horizons and low organic matter content. The other soil forms identified in the area include the Hutton and Ermelo. They are freely drained apedal soils that promote plant growth and water movement throughout the whole profile due to their high pore distribution and homogenous bulk density. Furthermore, these soils are found to be suitable and productive for crop production within the proposed project area.

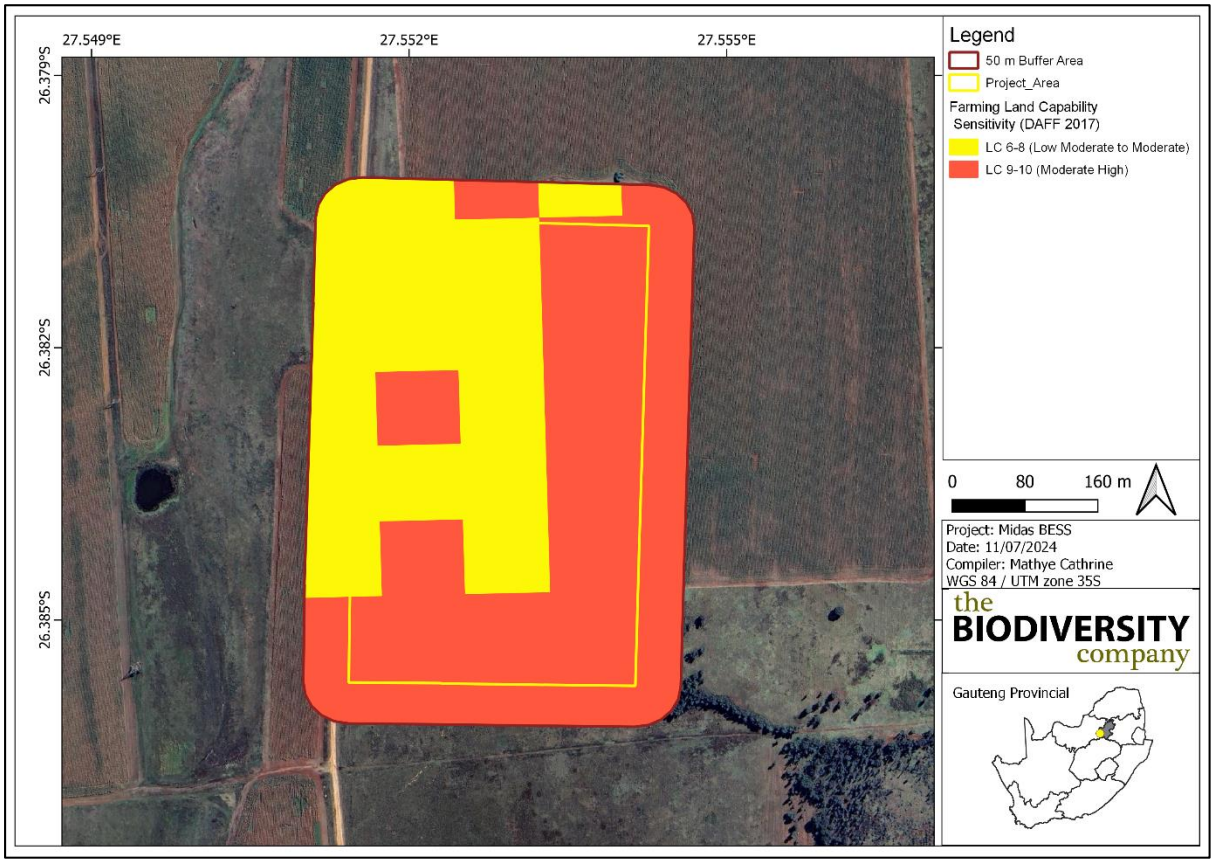


Figure 4-2 The land capability sensitivity (DAFF, 2017)

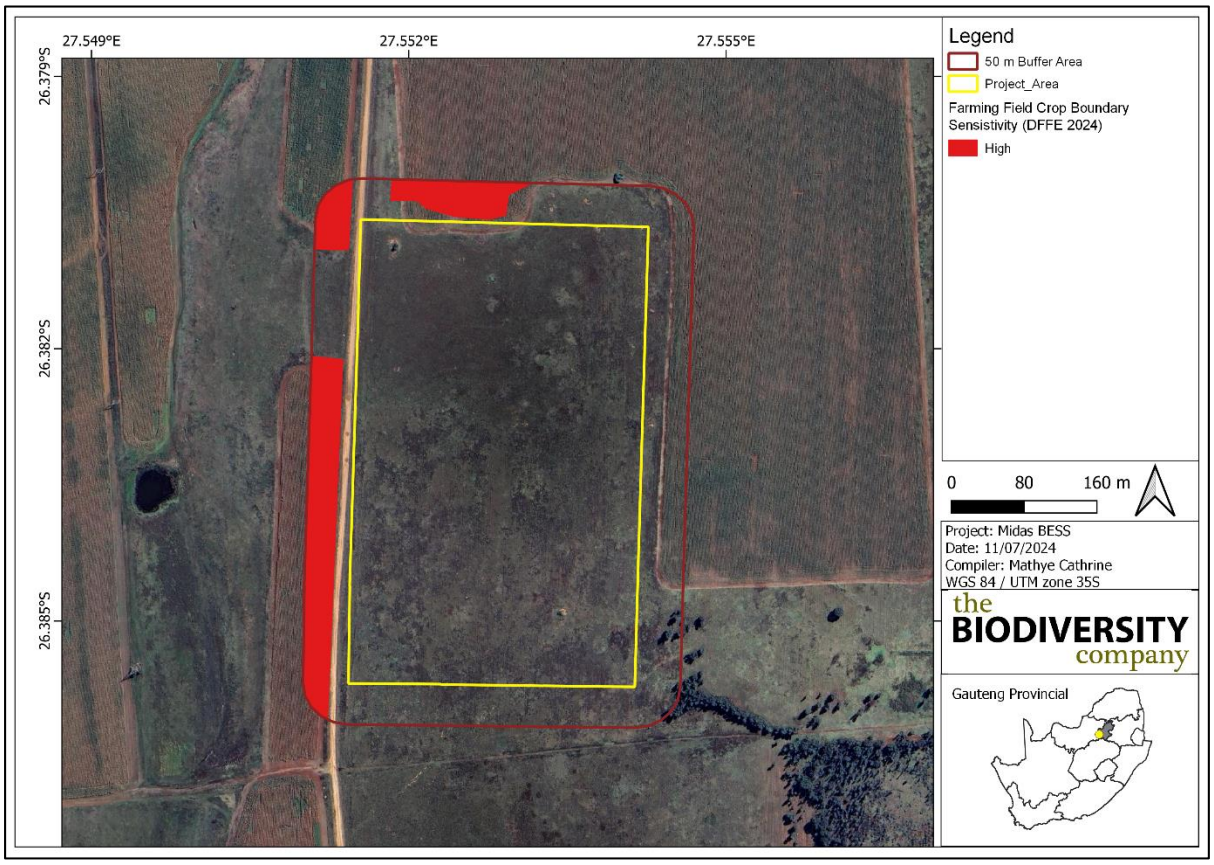


Figure 4-3 The Field Crop Boundary Sensitivity (DFFE 2024)

4.1.1 Screening Tool Comparison

The allocated sensitivities for the theme are either disputed or validated in Table 4-1 below.

Table 4-1 Summary of the screening tool vs specialist assigned sensitivities

Screening Tool Theme	Screening Tool	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Agricultural Theme	High	Medium	Disputed – Land Capability Low Moderate to Moderate. Presence of moderate potential soils including the Ermelo and Hutton soil form. There was no active crop fields and irrigation infrastructure found within the project area.
	High	Low	Disputed – Land Capability Very Low to Low. Presence of low potential soils including the Glenrosa soil form. Glenrosa has a restrictive subsoil horizon with low agricultural potential.
	Medium	Medium	Validated– Land capability Low Moderate to Moderate. Presence of moderate soils including Ermelo and Hutton soil forms with well drained, aerated and unfavorable climatic conditions.

Considering the verified soil properties, land potential as well as the current land use of the BESS development area, the overall sensitivity of the proposed project area is categorized as “Low” with “Medium” sensitivity areas (Figure 4-4).

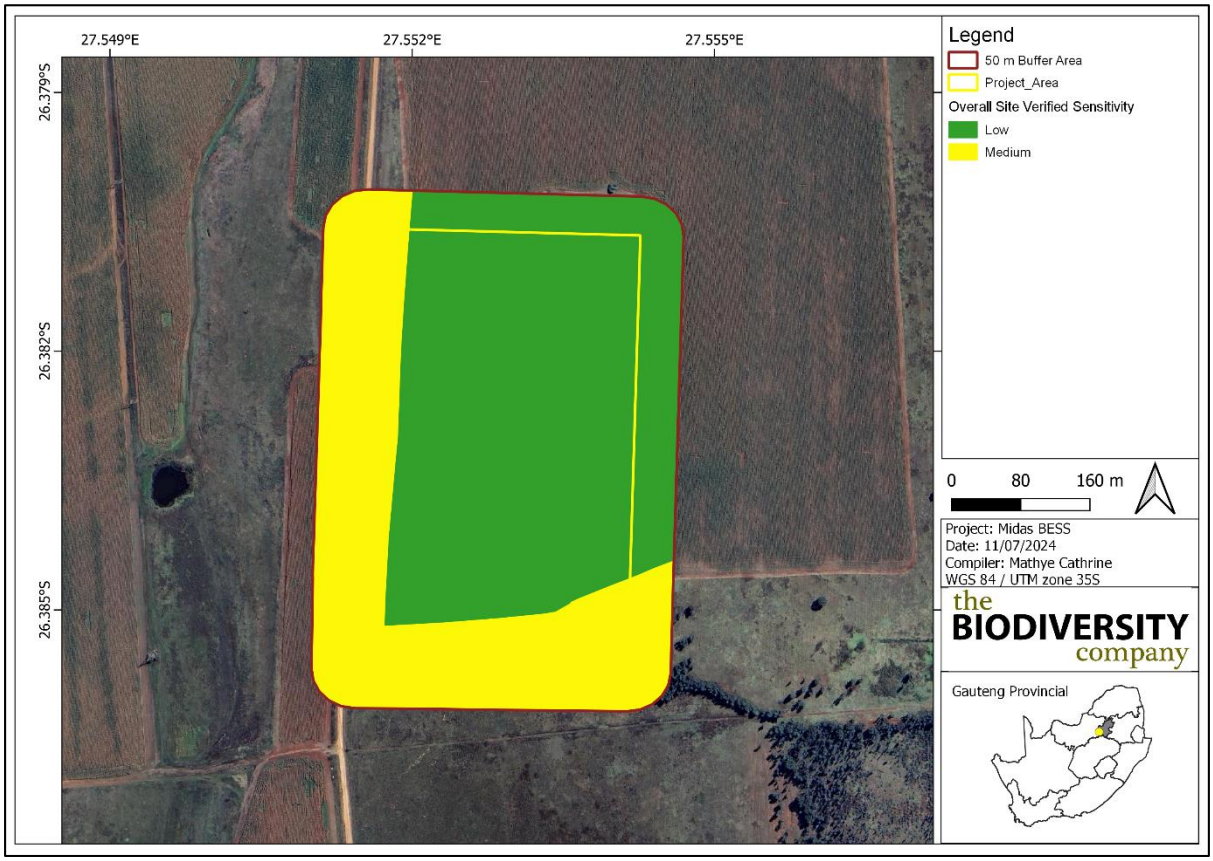


Figure 4-4 Overall sensitivity of the project area

5 Impact & Management Measures

The assessment of impact significance considers pre-mitigation as well as implemented post-mitigation scenarios. Two phases were considered for the impact assessment, with the infrastructure assumed to be permanent (> 20 years) and no decommissioning phase required:

- Construction Phase; and

- Operational Phase.

The aim of the management outcomes (below) is to present the mitigation measures in such a way that the can be incorporated into the Environmental Management Programme (EMPr) for the project, allowing for more successful implementation and auditing of the mitigations and monitoring guidelines. Table 5-1 presents the prescribed mitigation measures for construction phase for the assessment. Table 5-2 presents the prescribed mitigation measures for operational phase for the assessment.

Table 5-1 The project management measures for the soils and agriculture resources during the construction phase

Environmental Theme: Agriculture

Impact Management Outcome: Protection of soil resources
Phase: Construction

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
Cleared areas must be rehabilitated and stabilised to avoid impacts to adjacent areas	Contractor/ Environmental Officer	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Rehabilitation implemented
Restrict the disturbance footprint and the clearing of vegetation for the authorized area only.	Engineer/Contractor/ Environmental Officer	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	Disturbance minimised
Make use of existing access routes as much as possible before new routes are considered. Any selected "new" route must be authorized, minimizing disturbances to the wetland areas.	Contractor	Design engineer to consider this for final layout	Construction Phase	Environmental Officer	Throughout phase	All routes authorised
Promptly remove all alien and invasive plant species that may emerge during construction (i.e. weedy annuals and other alien forbs) must be removed	Environmental Officer	Implement an alien vegetation management plan	Construction Phase	Environmental Officer	Throughout phases	Implement alien vegetation management plan
Limit soil disturbance	Contractor/ Environmental Officer	Clear/disturb soil on a need basis only	Construction Phase	Environmental Officer	Throughout phase	Soil disturbance is reduced
Keep excavation and soil heaps neat and tidy	Contractor	Separate topsoil and sub-soil	Construction Phase	Environmental Officer	Throughout phase	Soil heaps are managed
Lightly till any disturbed soil around the development footprint to avoid compaction	Contractor/ Environmental Officer	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
Ensure soil stockpiles sand are sufficiently safeguarded against rain wash	Contractor/ Environmental Officer	Implement soil management plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
Mixing of concrete must under no circumstances take place in any wetlands or their buffers	Contractor/ Environmental Officer	Only permissible in designated working area	Construction Phase	Environmental Officer	Throughout phase	Avoidance of wetlands and buffer area
Minimize unnecessary clearing of vegetation beyond the development footprints	Contractor/ Environmental Officer	Visibly demarcate authorised working areas	Construction Phase	Environmental Officer	Throughout phase	Clearance is minimised

The use of herbicides is not recommended (opt for mechanical removal).	Contractor/ Environmental Officer	Demarcate buffer area	Construction Phase	Environmental Officer	Throughout phase	Avoided buffer area
Make sure all excess consumables are removed from site and deposited at an appropriate waste facility	Contractor/ Environmental Officer	Restrict to designated working/storage/service areas	Construction Phase	Environmental Officer	Throughout phase	Restricted to demarcated area
Appropriately contain any generator diesel storage tanks, machinery spills (e.g. accidental spills of hydrocarbons oils, diesel etc.) or construction materials on site (e.g. concrete) in such a way as to prevent them leaking and entering wetlands or buffer areas	Contractor/ Environmental Officer	Restrict to designated working/storage/service areas	Construction Phase	Environmental Officer	Throughout phase	Restricted to demarcated area
Provide appropriate sanitation facilities for workers during construction and service them regularly	Contractor	Provide service ablution for contractors/labour	Construction Phase	Environmental Officer	Throughout phase	Ablution facilities provided and serviced
The Contractor should supply sealable and properly marked domestic waste collection bins and all solid waste collected must be disposed of at a licensed disposal facility	Contractor	Implement waste management plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
The Contractor must be in possession of an emergency spill kit that must be complete and available at all times on site	Contractor	Implement spill response plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
Any possible contamination of topsoil by hydrocarbons must be avoided. Any contaminated soil must be treated in situ or be placed in containers and removed from the site for disposal in a licensed facility	Contractor	Implement spill response plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented

Table 5-2 The project management measures for the soils and agriculture resources during the operational phase

Environmental Theme: Agriculture

Impact Management Outcome: Protection of soil resources
Phase: Operational

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

Implement erosion control methods like mulching, geotextile sheets, reduce soil compaction, chemical spills which can affect soil fertility. Promptly remove all alien and invasive plant species that may emerge during construction (i.e. weedy annuals and other alien forbs) must be removed	Environmental Officer	Implement an alien vegetation management plan	Operational Phase	Environmental Officer	Throughout phases	Implement alien vegetation management plan
Ensure successful rehabilitation of areas disturbed during construction and these areas are stabilised to avoid impacts to adjacent areas	Contractor/ Environmental Officer	Implement spill rehabilitation plan	Operational Phase	Environmental Officer	Quarterly during first two years of operation.	Plan is implemented

5.1 Cumulative Impacts

The quantitative impact of the proposed project in isolation on agriculture is anticipated to be “Low” due to the expected avoidance of cultivated areas (Table 5-3). The cumulative impact of the proposed project is anticipated to be “Low” The project area has undergone historic and current modification, like the disturbances that the local area has undergone.

After implementation of the mitigation measures as stipulated above the agricultural productivity of the area is not expected to deteriorate further because of the proposed development and no irreplaceable loss of resources is anticipated.

Table 5-3 Cumulative Impacts associated with the proposed project

Status	Cumulative Effect	Impact Significance	Impact Rating	Can impact be mitigated?	Is the impact acceptable?
Impact in isolation	1	11	Low (6-28)	Yes	Yes
Cumulative impact	2	21	Low (6-28)		

6 Conclusion

The most sensitive soil forms identified in the proposed project area including Ermelo and Hutton are characterised by land potential level “L6”, and ultimately a “Medium” sensitivity due to the moderate soil properties and unfavourable climatic conditions. Moreover, the less sensitive and dominant soil form identified within the project area was Glenrosa categorised with a “Low” sensitivity due their very restrictive permeability and the poor climatic conditions.

The land capability sensitivity (DAFF, 2017) is dominated by land capabilities with “Moderate high”, with some areas associated with “Low Moderate to Moderate” sensitivity. The field crop boundaries were also identified following the agricultural theme screening tool. The baseline findings only concur with only Low- Moderate to Moderate sensitivity and further dispute the highly field crop boundaries. The overall site sensitivity of the project area ranges from medium to low.

It is the specialist’s opinion that the proposed Midas BESS project will have an overall low residual impact on the agricultural production ability of the land. That being the case, the proposed project may be favourably considered for development.

6.1 Specialist Opinion

The proposed Midas BESS project will have an overall low residual impact on the agricultural production capability of the area. The proposed development can be favourably considered for authorisation. The following serves to substantiate this statement:

- The site verified land capability of the proposed project area is found to range from low to medium.
- The agricultural potential of the area is ranges from low to medium;
- No active crop production was found within the project area; and
- The overall agricultural theme sensitivity for the BESS project area ranges from medium to low.

7 References

Department of Agriculture, Forestry and Fisheries, 2017. National land capability evaluation raster data: Land capability data layer, 2017. Pretoria.

Land Type Survey Staff. (1972 - 2006). Land Types of South Africa: Digital Map (1:250 000 Scale) and Soil Inventory Databases. Pretoria: ARC-Institute for Soil, Climate, and Water.

Mucina, L. & Rutherford, M.C. (Eds.). (2006). The vegetation of South Africa, Lesotho, and Swaziland. Strelizia 19. South African National Biodiversity Institute, Pretoria South African.

National Environmental Screening Tool. 2024. National Environmental Screening Tool, 2024. Available from the Department of Forestry, Fisheries and the Environmental website: https://screening.environment.gov.za/screeningtool/index.html#/pages/welcome.

Smith, B. (2006). The Farming Handbook. Netherlands & South Africa: University of KwaZulu-Natal Press & CTA.

Soil Classification Working Group. (1991). Soil Classification A Taxonomic system for South Africa. Pretoria: The Department of Agricultural Development.

Soil Classification Working Group. (2018). Soil Classification A Taxonomic system for South Africa. Pretoria: The Department of Agricultural Development.

8 Appendix Items

8.1 Appendix A – Specialist Declaration of Independence

I, Matthew Mamera, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of NEMA.

Dr Matthew Mamera

Soil Scientist

The Biodiversity Company

July 2024

8.2 Appendix B – Specialist CV

Matthew Mamera

PhD Soil Science (*Cand Nat Sci*)

Cell: +27 785 772 668
Email: matthew@thebiodiversitycompany.com
Identity Number: 8810315983183
Date of birth: 31 October 1988

Profile Summary

Working experience throughout South Africa

Specialist experience with pedology and agriculture.

Specialist expertise include hydropedology, pedology, land contamination, agricultural potential, land rehabilitation, rehabilitation management and wetlands resources.

Experience hydropedological modelling

Areas of Interest

Mining, Farming, Soil and Water quality contamination, Soil Sanitation management, Soil Carbon, Sustainability and Conservation.

Key Experience

- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)
- Wetland delineations
- Rehabilitation Plans
- Soil taxonomic classification (SA forms and WRB groups)
- Soil Hydropedology assessments
- Agriculture potential assessments
- Land contamination assessments

Country Experience

South Africa: All Provinces

Zambia - Kitwe and Mufulira

Angola- Zenza – Cacuso; Luena - Saurimo

Nationality

South African Permanent Residence

Languages

English – Proficient

Ndebele, Xhosa, Shona – Proficient

Qualifications

- PhD (University of the Free States)- Soil Science (Hydropedology, Sanitation and Water quality management)
- MSc (University of Fort Hare) – Soil Science (Hydropedology, Sanitation and Water quality management)
- BSc Honours *Cum laude* (University of Fort Hare) – Soil Science (Hydropedology, wetlands delineation and rehabilitation)
- BSc Agricultural Soil Science
- Cand Nat Sci 116356
- SSSSA- SSSSA 201

I, Cathrine Mathye, declare that:

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of Regulation 71 and is punishable in terms of Section 24F of the Act.

Cathrine Mathye

Soil Scientist

The Biodiversity Company

July 2024

Masesabona Cathrine Mathye

MSc Soil Science (*Cand Nat Sci*)

Cell: +27 818 039 974
Email: Cathrine@thebiodiversitycompany.com
Identity Number: 9603110508084
Date of birth: 11 March 1996

Profile Summary

Working experience throughout South Africa

Specialist experience with pedology and agriculture.

Specialist expertise include pedology, agricultural potential, irrigation water management.

Areas of Interest

Mining, Farming, Soil and Water quality contamination, Soil management, Soil Carbon, Sustainability and Conservation.

Key Experience

- Soil taxonomic classification (SA forms and WRB groups)
- Crop management
- Agriculture potential assessments
- Water use management (Irrigation)

Country Experience

South Africa: All Provinces

Nationality

South African

Languages

English – Proficient

Sepedi, Xitsonga, Venda – Proficient

Qualifications

- MSc (University of Free State) – Soil Science (Soil carbon, Carbon sequestration and sustainable agriculture)
- BSc Honours (University of Limpopo) – Soil Science (Soil classification and Soil survey)
- Cand Nat Sci 127950
- SSSSA