SITE SENSITIVITY VERIFICATION REPORT FOR THE BOOYSENDAL NORTH BATTERY ENERGY STORAGE SYSTEM PROJECT

Agricultural (Soil) Theme

Booysendal North, located in Fetakgomo Tubatse Local Municipality, Sekhukhune District Municipality, Limpopo Province, South Africa

17 March 2026

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Report Name	**SITE SENSITIVITY VERIFICATION REPORT FOR THE BOOYSENDAL NORTH BATTERY ENERGY STORAGE SYSTEM PROJECT**
Specialist Theme	Agricultural Theme (Soil)
Project Reference	Booysendal North BESS
Environmental Assessment Practitioner	
Date	17 March 2026
Technical Support	Cathrine Mathye (SACNASP 127950)
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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 personal stake 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.

Executive Summary

The Agricultural Theme Site Sensitivity Verification Report has been prepared for the proposed Booysendal North Battery Energy Storage System (BESS) Project, situated within the existing Booysendal Platinum Mine in the Fetakgomo Tubatse Local Municipality, Limpopo Province, South Africa. The Project entails the construction, operation, and decommissioning of a containerised, utility-scale battery energy storage facility (up to 25 MW/50 MWh) to enhance energy security and operational resilience at the mine, while reducing reliance on the national electricity grid.

The Biodiversity Company was appointed to conduct a Site Sensitivity Verification (SSV) in line with the National Environmental Management Act (NEMA) and the recently gazetted Battery Energy Storage Systems Exclusion Norm (GN 4557). The SSV verifies the environmental sensitivity ratings generated by the Department of Forestry, Fisheries and the Environment (DFFE) National Web-Based Environmental Screening Tool and assesses the site's suitability for potential exclusion from Environmental Authorisation (EA) requirements. The assessment included a desktop review and a field survey (26–30 January 2026) to evaluate the agricultural and soil resources within the Project Area.

The National Web based Environmental Screening Tool (DFFE, 2025) has characterised the agricultural theme sensitivity of the project area as predominantly "Medium", and with other areas having "Low" sensitivities, 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 predominate "Low" sensitivity with marginal "Medium" sensitive areas.

Key Findings

Four (4) representative soil forms that were identified within the project area include the Swartland, Mispah, Johannesburg and Witbank soil forms. The proposed project area is dominated by low potential soils such as Mispah, Johannesburg and Witbank which is suitable for grazing practices. The medium potential soil found within the project area is the Swartland soil form which is ideally suitable for some crop production practices. The overall sensitivity of the proposed Project ranges from Low to Medium.

Conclusions and Recommendations

The results indicate a predominantly "Low" and "Medium" land capability sensitivities. The Low sensitivity was assigned in areas dominated with Mispah, Johannesburg and Witbank soil forms within the proposed BN BESS Project area. The medium sensitivity was assigned to the areas dominated by the Swartland soil form. The overall sensitivity of the proposed Project area is predominately Low sensitive, with areas ranging from Low to Medium sensitivities.

It is the specialist's opinion that the proposed BN BESS Project will have an overall low residual impact on the agricultural production**.** The specialist confirms that the proposed Booysendal North BESS Project meets the requirements of the BESS Exclusion Norm, based on the assessment's findings of low and medium sensitivity which will results into low anticipated irreplaceable biodiversity loss. The site is therefore suitable for registration under the Exclusion Norm, provided that all recommended mitigation and management measures are implemented. The Environmental Assessment Practitioner should ensure that these specialist recommendations are incorporated into the overall Environmental Management Programme (EMPr).

Table of Contents

1 Introduction 1
1.1 Legal Framework 3
1.2 Project Description 3
1.2.1 Project Location and Site Context 3
1.2.2 Overview of the Facility 4
1.2.3 Installed Capacity 4
1.2.4 Battery Technology 4
1.3 Scope of Work 4
2 Approach 5
2.1 Assumptions and Limitations 5
3 Results and Discussion 6
3.1 Description of Soil Forms and Soil Families 6
3.2 Agricultural Potential 9
3.3 Climate Capability 9
3.4 Land Capability 10
3.5 Land Potential 10
4 Screening Tool 11
4.1 Screening Report: Booysendal North Battery Energy Storage System Project 11
4.1.1 Screening Tool Comparison 13
5 Impact and Management Measures 14
5.1 Cumulative Impacts 18
6 Conclusion 20
6.1 Developable Areas 20
7 References 21
8 Appendix Items 22
8.1 Appendix A – Specialist Declaration of Independence 22
8.2 Appendix B – Specialist CV 24

List of Tables

Table 3-1 Summary of soils identified within the Project area 6

Table 3-2 Description of soil family characteristics 6

Table 3-3 Climatic capability (step 1) (Scotney et al., 1987) 9

Table 3-4 Land capability for the soils within the Project area 10

Table 3-5 Land potential from climate capability vs land capability (Guy and Smith, 1998) 10

Table 3-6 Land potential for the soils within the Project area (Guy and Smith, 1998) 10

Table 4-1 Summary of the Screening Tool vs specialist assigned sensitivities for Booysendal North Battery Energy Storage System Project area 13

Table 5-1 The proposed Project management measures for the soils and agriculture resources during the construction phase 15

Table 5-2 The proposed Project management measures for the soils and agriculture resources during the operational phase 17

Table 5-3 Cumulative Impacts associated with the proposed Booysendal North Battery Energy Storage System Project 19

List of Figures

Figure 1-1 Map illustrating the regional locality of the Project area 2

Figure 1-2 Proposed Project area of the Booysendal North Battery Energy Storage System 2

Figure 3-1 Dominant soil forms distribution identified in the Booysendal North Battery Energy Storage System Project area during the site assessment 7

Figure 3-2 Map illustrating the field work Global Positioning System tracks of the specialist during the field survey 8

Figure 3-3 Diagnostic horizon of dominant soils identified within the proposed project area and different land uses; A) Swartland soil form (Orthic/pedocutanic/Gleylithic); B) Witbank soil form; C) Johannesburg soil form (Mining infrastructure); and D) Mispah soil form (Bare rock) 8

Figure 3-4 Land Potential within the 50 m Buffer area of the Booysendal North BESS Project area 11

Figure 4-1 Agricultural Theme Sensitivity for the Booysendal North Battery Energy Storage System Project area 12

Figure 4-2 Overall sensitivity of the Booysendal North Battery Energy Storage System Project area 13

Figure 5-1 Cumulative impacts map for the Booysendal North Battery Energy Storage System Project area 18

Figure 6-1 Developable areas for the Booysendal North Battery Energy Storage System Project area 20

Table of Abbreviations and Units of Measure

Abbreviation / Unit	Full Meaning / Description
%	Percent
"	Second (used in GPS coordinates)
'	Minute (used in GPS coordinates)
°	Degree (used in GPS coordinates)
°C	Degree Celsius (temperature, implied in climate)
BESS	Battery Energy Storage System
BI	Biodiversity Importance
Cand. Nat. Sci.	Candidate Natural Scientist (SACNASP registration)
C1–C8	Climatic Capability Classes (Smith, 2006)
CI	Conservation Importance
CR	Critically Endangered (IUCN Red List status)
DFFE	Department of Forestry, Fisheries and the Environment
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Programme
EN	Endangered (IUCN Red List status)
EOO	Extent of Occurrence
GIS	Geographic Information System
GN	Government Notice
GPS	Global Positioning System
ha	Hectare (unit of area)
km	Kilometer (unit of distance)
L1–L8	Land Potential Levels (Guy and Smith, 1998)
LC	Least Concern (IUCN Red List status)
LC1–LC8	Land Capability Classes
LFP	Lithium Iron Phosphate (battery chemistry)
m	Meter (unit of length)
m²	Square meter (unit of area)
MAP	Mean Annual Precipitation
MAPE	Mean Annual Potential Evaporation
mm	Millimeter (unit of length)
MW	Megawatt (unit of power)
MWh	Megawatt-hour (unit of energy)
NEMA	National Environmental Management Act
PAOI	Project Area of Influence
pH	Potential of Hydrogen (soil acidity/alkalinity, implied)
Pr. Sci. Nat.	Professional Natural Scientist (SACNASP registration)

REEA	Renewable Energy EIA Application
RR	Receptor Resilience
SSV	Site Sensitivity Verification
SSVR	Site Sensitivity Verification Report
SACNASP	South African Council for Natural Scientific Professions
SEI	Site Ecological Importance
t	Tonne (metric ton, implied in soil/land context)
TBC	The Biodiversity Company
Vlei	Wetland (Afrikaans term, used in land potential tables)

1 Introduction

The Biodiversity Company was appointed to conduct a Site Sensitivity Verification (SSV) report for the proposed in support of the environmental authorisation process for the proposed Booysendal North (BN) Battery Energy Storage System (BESS) Project. The proposed BN BESS Project is located on Portion 0 of Farm Booysendal No. 43JT, within the Fetakgomo Tubatse Local Municipality, which falls under the Sekhukhune District Municipality in the Limpopo Province. The proposed Project site lies approximately 35 kilometres (km) west of Mashishing and is accessed via the R577 regional road, followed by established Mine access roads (Figure 1-1).

Booysendal Platinum Proprietary Limited, a subsidiary of Northam Platinum Limited (Northam), proposes the development of the Booysendal North (BN) Battery Energy Storage System (BESS) Project at the existing BN mining operation in the Limpopo Province of South Africa. The proposed project forms part of Northam's strategy to enhance energy security, improve operational resilience, and reduce reliance on the national electricity grid.

The BN BESS Project entails the construction, operation, and eventual decommissioning of a utility-scale, behind-the-meter battery energy storage facility with an installed capacity of up to 25 megawatts (MW) and an energy storage capacity of up to 50 megawatt-hours (MWh). The facility will store electrical energy during periods of lower demand and release stored energy during periods of peak demand or grid instability. The development is located entirely within the existing BN mining footprint and will connect directly to establish mine electrical infrastructure.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, 2025) has characterised the agricultural theme sensitivity of the project area as predominantly "Medium", and with other areas having "Low" sensitivities, 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 predominate "Low" sensitivity with marginal "Medium" sensitive areas.

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 Booysendal North 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 3 and 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.

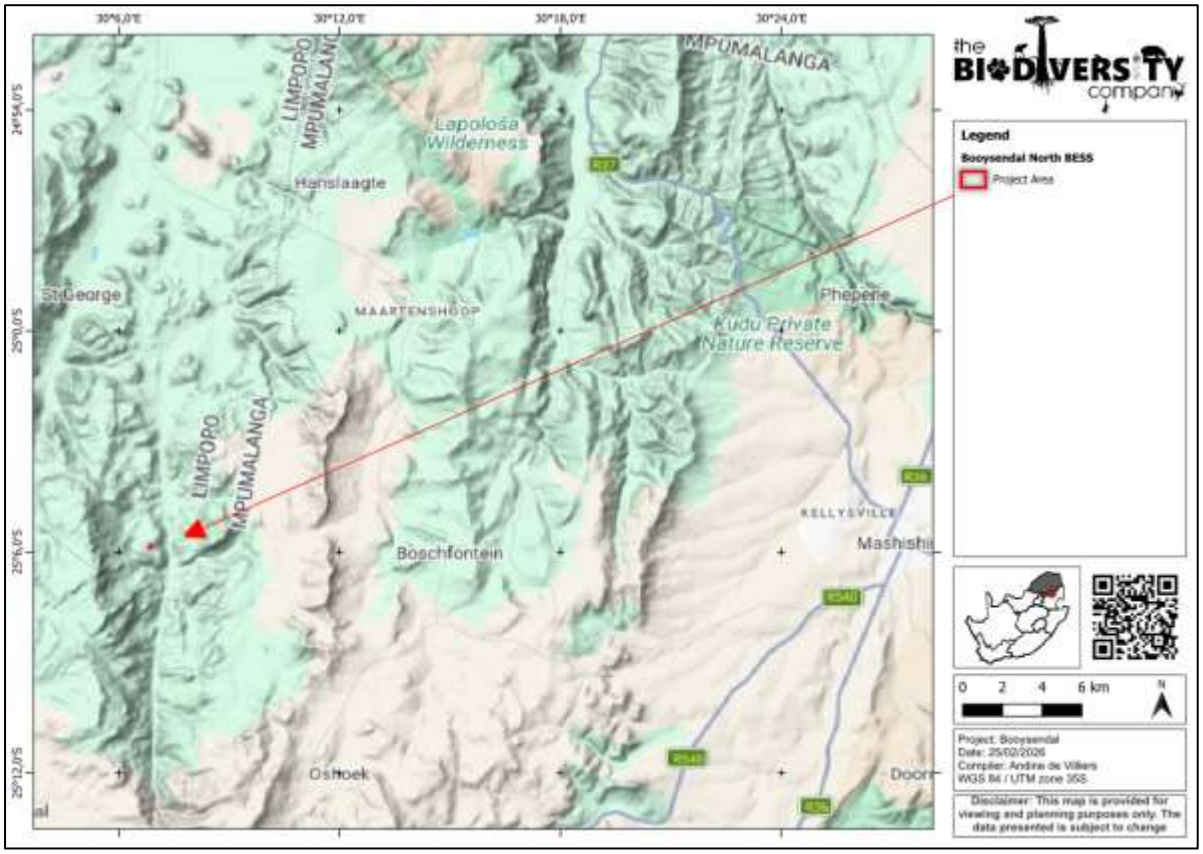


Figure 1-1 Map illustrating the regional locality of the Project area

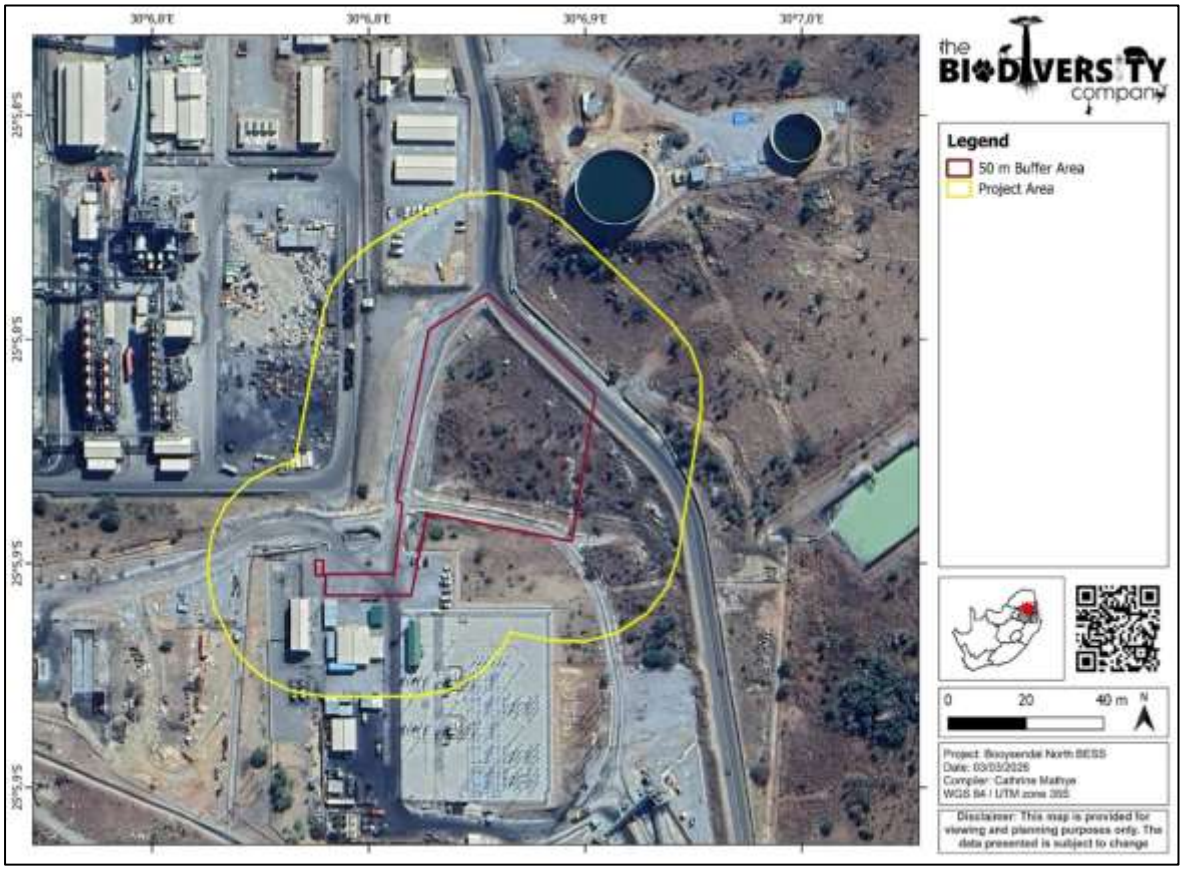


Figure 1-2 Proposed Project area of the Booysendal North Battery Energy Storage System

1.1 Legal Framework

This assessment was conducted in accordance with the amendments to the Environmental Impact Assessment Regulations. 2014 (GNR 326, 7 April 2017) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), DFFE Agricultural Screening tool, (2025). The approach has taken cognisance of the published Government Notices (GN) 320 in terms of 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 National Environmental Management Act, 1998, when applying for Environmental Authorisation" (Reporting Criteria). The GNR 320 requirements of an Agricultural Compliance Statement stipulate that a 50 m buffered development envelope be considered.

In accordance with GN 320 and GN 1150 (20 March 2020) of the NEMA EIA Regulations of 2014 (as amended), prior to commencing with a specialist assessment, a site sensitivity verification must be undertaken to confirm the current land use and environmental sensitivity of the proposed project areas as identified by the National Web-Based Environmental Screening Tool (i.e., Screening Tool). The agricultural theme sensitivity for the area is predominantly classified as 'Low' and marginal 'Medium.'

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 where relevant, with demonstrated experience in the taxonomic group of the soil forms being considered;
- Within the season which would be most relevant to identify the specific soil resources of interest (i.e. not applicable for soil assessments); 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

The following information was provided by GCS Environment South Africa (Pty) Ltd and pertains to the Booysendal North BESS project:

Northam proposes the development of the BN BESS Project at the existing Booysendal Platinum Mine (the Mine) in the Limpopo Province of South Africa.

The proposed Project entails the construction, operation and eventual decommissioning of a utility-scale, behind-the-meter BESS with an installed capacity of up to 25 MW and an energy storage capacity of 50 MWh. The BN BESS Project will store electrical energy during periods of lower electricity demand and release stored energy during periods of peak demand or grid instability.

The proposed BN BESS Project is intended to enhance electricity supply reliability and operational resilience at the BN Mine, while reducing reliance on, and pressure upon, the national electricity grid. The development will be located entirely within the existing mining footprint and will connect directly to established electrical infrastructure associated with the BN Mine.

1.2.1 Project Location and Site Context

The proposed BN BESS Project is located on Portion 0 of Farm Booysendal No. 43JT, within the Fetakgomo Tubatse Local Municipality, which falls under the Sekhukhune District Municipality in the Limpopo Province. The proposed Project site lies approximately 35 kilometers (km) west of Mashishing and is accessed via the R577 regional road, followed by established Mine access roads.

1.2.2 Overview of the Facility

The proposed BN BESS Project comprises the development of a containerised battery energy storage facility located within the existing operational footprint of the Mine. The facility will occupy a total fenced development area of approximately 2 900 square metres (m²) and has been designed to integrate fully with the Mine's established electrical and operational infrastructure.

The proposed BN BESS Facility will operate as a behind-the-meter energy storage installation, providing electrical storage capacity for exclusive on-site use. Stored electrical energy will be discharged directly to Mine infrastructure through a dedicated medium-voltage electrical connection to the existing BN consumer substation.

The Project has been purposefully designed to minimise environmental disturbance through the use of modular, containerised infrastructure and by situating the development entirely within an established industrial mining area. This approach limits additional land transformation, avoids encroachment into undeveloped or environmentally sensitive areas, and enables efficient construction, operation and eventual decommissioning of the facility.

1.2.3 Installed Capacity

The proposed Project will have an installed power capacity of up to 25 MW and an energy storage capacity of up to 50 MWh.

The BESS will supply electricity during peak demand periods to reduce the Mine's reliance on expensive Eskom peak Time-of-Use tariffs. In addition, the system will manage short-term load fluctuations and provide reliable backup capacity during periods of grid instability or electricity supply interruption.

1.2.4 Battery Technology

The proposed BN BESS Project will utilise Lithium Iron Phosphate (LFP) battery technology. This battery chemistry has been selected based on its proven performance, operational reliability and enhanced safety characteristics when compared with alternative lithium-ion technologies.

LFP batteries are characterised by high thermal stability and a significantly reduced risk of thermal runaway, which is a critical consideration for large-scale stationary energy storage applications. The chemistry exhibits strong resistance to overheating and fire propagation, thereby reducing potential safety risks to personnel, infrastructure and the surrounding environment.

In addition to its safety advantages, LFP technology offers a longer operational cycle life, high charge–discharge efficiency and stable performance under frequent cycling conditions. These attributes make LFP batteries particularly suitable for behind-the-meter industrial applications where daily load shifting, peak shaving and backup power functions are required.

LFP battery systems are widely deployed internationally in utility-scale and industrial energy storage facilities, including mining operations, due to their durability, predictable performance characteristics and reduced environmental risk profile over the Project lifecycle.

1.3 Scope of Work

The scope of work for this SSV was undertaken to support the potential registration of the proposed Project under the BESS Exclusion Norm and to verify the environmental sensitivity ratings generated by the Screening Tool.

The SSV was conducted in accordance with the requirements of GN 320 and GN 1150 and was designed to independently confirm the suitability of the site for exclusion by verifying the Screening Tool outputs for the relevant environmental theme.

The scope of work included, but was not limited to, the following tasks:

- A desktop review of available spatial, environmental, and regulatory information relevant to the specialist discipline, including Screening Tool outputs, spatial datasets, previous studies (where applicable), and relevant legislative and guideline documents.

- A site visit, where required, to verify on-site conditions, current land use, and environmental features relevant to the specialist assessment.

- Assessment and verification of the environmental sensitivity of the site in relation to the relevant environmental theme, as identified by the Screening Tool.

- Identification of any environmental constraints, sensitivities, or features of importance that may influence the suitability of the site for development or the applicability of the exclusion norm.

- Preparation of maps and spatial outputs illustrating the development footprint, verified sensitivity ratings, and relevant environmental features.

- Provision of clear motivation, justification, and supporting evidence where the verified sensitivity differs from that identified by the Screening Tool.

The outcome of this SSV is to:

- Confirm or dispute the environmental sensitivity ratings identified by the Screening Tool; and

- Motivate and substantiate the verified sensitivity ratings, including any deviations from the Screening Tool outputs, in accordance with the requirements of GN 320 and GN 1150.

2 Approach

The field survey was conducted from the 26th to the 30th of January 2026. Seasonality has no bearing on the soil assessment and fieldwork is therefore deemed sufficient for the proposed Project. 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:

- It is assumed that all information received from the client/EAP and landowner is accurate

- The information contained in this report is based on surveyed desktop data and verified observations on site. There may be variations in terms of the delineation of the soil forms across the area;

- Seasonality has no bearing on the soil assessment and fieldwork is therefore deemed sufficient for the proposed Project. Therefore, the data collected during the fieldwork is considered sufficient to establish a meaningful baseline for the study objectives

- The assessment area (Project Area) was based on the footprint areas as provided by the client, and any alterations to the area and/or missing Geographic Information System (GIS) information pertaining to the assessment area would have affected the area surveyed and hence the results of this assessment

- The Global Positioning System (GPS) used in the assessment has an accuracy of 5 m and consequently any spatial features may be offset by up to 5 m. Please note that a GPS positional accuracy of up to five metres is considered adequate for the purposes of this study, given the scale of the assessment and the objectives of the Site Sensitivity Verification.

3 Results and Discussion

3.1 Description of Soil Forms and Soil Families

During the site assessment various soil forms were identified (see table below). 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 area

Diagnostic Horizon		Soil Forms			
		Swartland 2113 (0-15)	**Mispah 2120 (0-15)**	**Johannesburg 2200 (0-15)**	**Witbank 1200 (0-15)**
Topsoil	Depth (mm)	0-150	0-50	0-50	0-50
	Clay (%)	0-15	0-15	-	-
	Signs of Wetness	-	-	-	-
	Rock (%)	0	0	-	-
	Surface crusting	None	None	-	-
Subsoil B1	Depth (mm)	150-500	+50	-	-
	Clay (%)	0-15	-	-	-
	Signs of Wetness	None	-	-	-
	Rock (%)	0	+50	-	-
Subsoil B2	Depth (mm)	500-650	-	-	-
	Clay (%)	15	-	-	-
	Signs of Wetness	None	-	-	-
	Rock (%)	10	-	-	-

Table 3-2 Description of soil family characteristics

Soil Form/Family	Topsoil Colour	Base Status	Textural Contrast
Swartland 2113	Chromic Topsoil	Mesotrophic	Luvic
Mispah 2120	Chromic Topsoil	Dystrophic	Aluvic
Johannesburg 2000	-	-	Aluvic
Witbank 1100	-	-	Aluvic

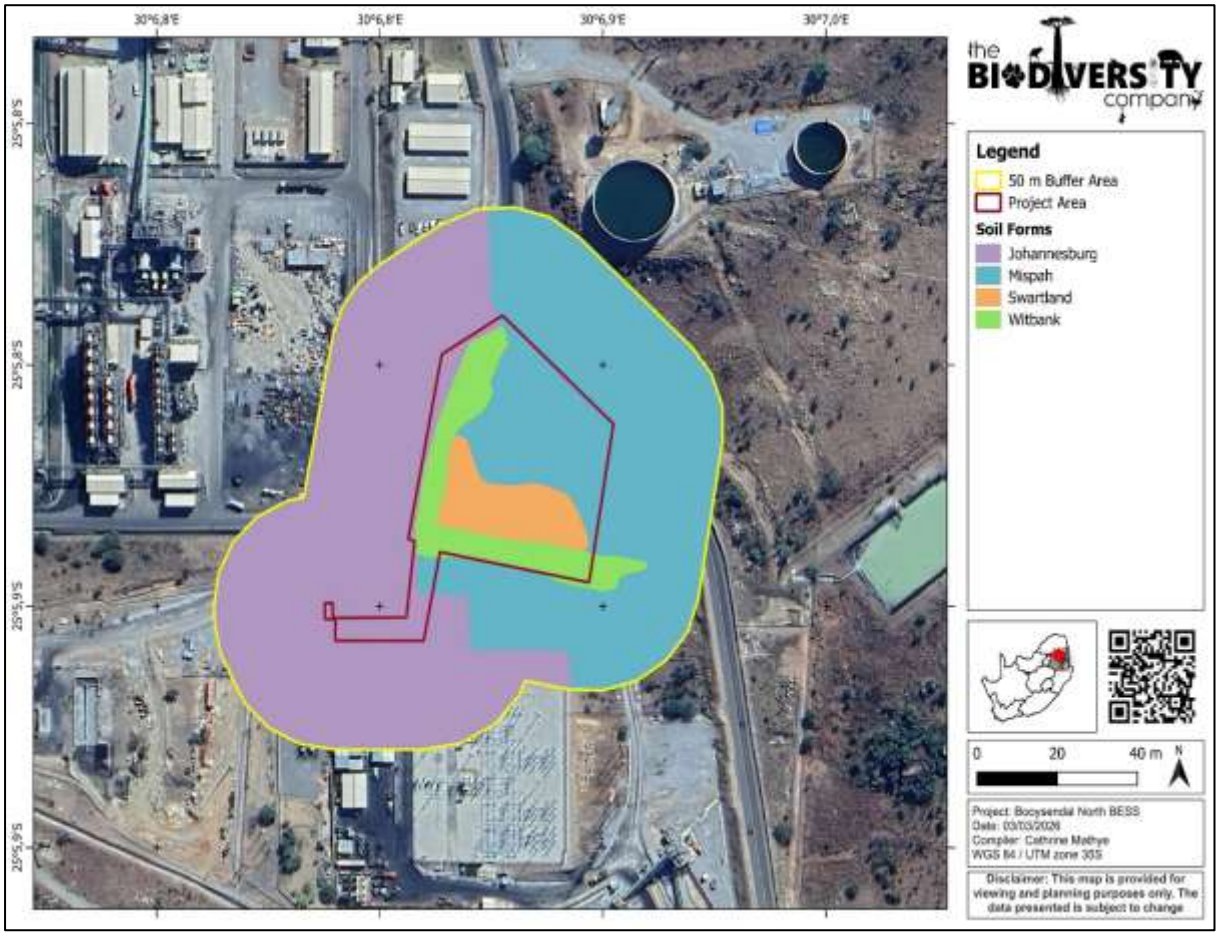


Figure 3-1 Dominant soil forms distribution identified in the Booysendal North Battery Energy Storage System Project area during the site assessment

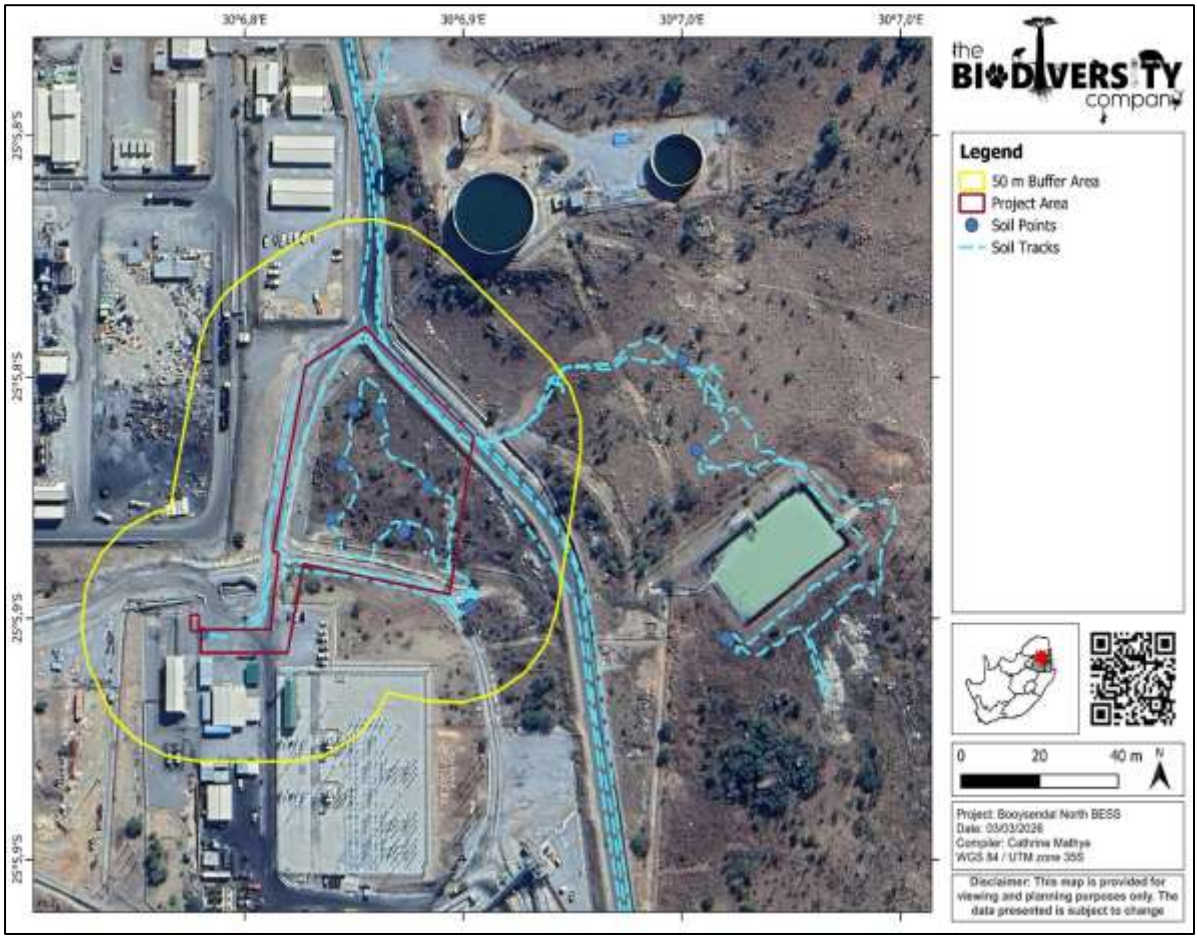


Figure 3-2 ***Map illustrating the field work Global Positioning System tracks of the specialist during the field survey***

Figure 3-3 ***Diagnostic horizon of dominant soils identified within the proposed project area and different land uses; A) Swartland soil form (Orthic/pedocutanic/Gleylithic); B) Witbank soil form; C) Johannesburg soil form (Mining infrastructure); and D) Mispah soil form (Bare rock)***

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. Sekhukhune Mountain Bushveld Grassland, MAP 609 millimetres (mm), with the Mean Annual Precipitation Evapotranspiration (MAPE) of 2043 mm, , with a pan Class of 0.298) 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 "IV," "VI" and "VIII" 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
IV	Severe limitations. Low arable potential and high erosion hazard	Intensive conservation practice.	Long term ley (75%)	Arable	Medium
VI	Limitations preclude cultivation. Suitable for perennial vegetation.	Protection measures for establishment, e.g. sod-seeding.	Veld, pastures, and afforestation.	Non-arable	Low
VIII	Extremely severe limitations. Not suitable for grazing or afforestation	Total protection from agriculture	Wildlife	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 "IV" has been reduced to land potential L6, land capability class "VI" has been reduced to land potential level L7, and land capability class "VIII" to land potential level L8, 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	Medium
7	**Low potential.** Severe limitations due to soil, slope, temperatures, or rainfall. Non-arable.	Low
8	**Very low potential.** Very severe limitations due to soil, slope, temperatures, or rainfall. Non-arable,	Low

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). Non-arable;
- Land potential level 7 (this land potential level is characterised by low potential with severe limitation due to soil, slope, temperatures, or rainfall). Non-arable; and
- Land potential level 8 (this land potential level is characterised by very low potential with very severe limitation due to soil, slope, temperatures, or rainfall). Non-arable.

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

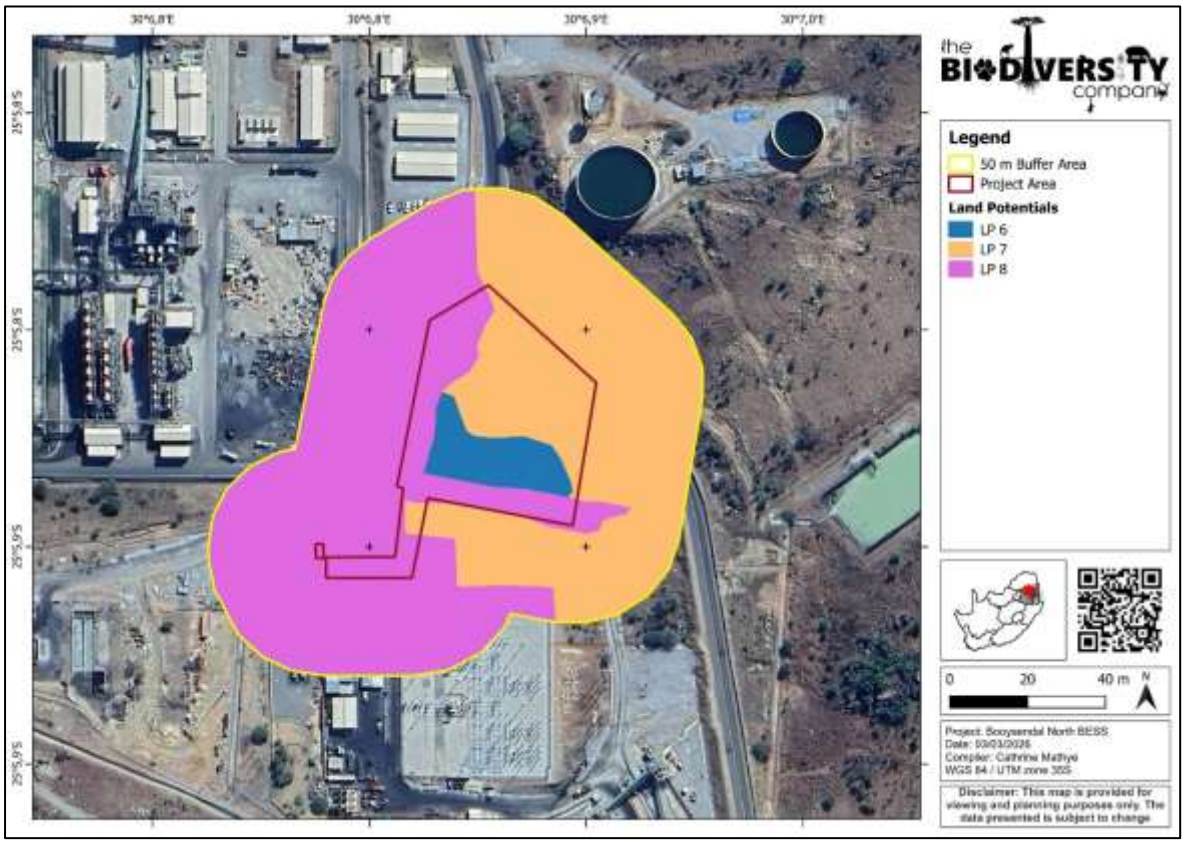


Figure 3-4 Land Potential within the 50 m Buffer area of the Booysendal North BESS Project area

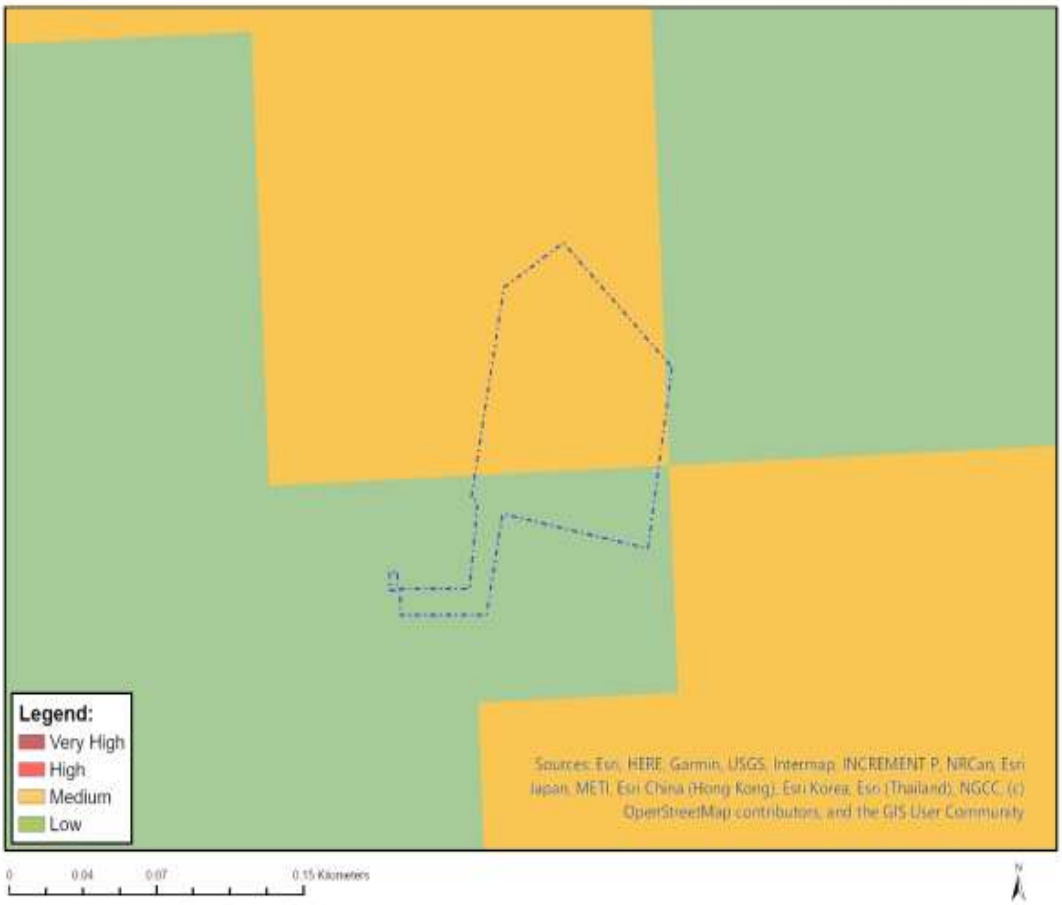
4 Screening Tool

4.1 Screening Report: Booysendal North Battery Energy Storage System Project

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 proposed Project area falls within the “Low” to “Medium” 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)
Low	05. Low
Medium	06. Low-Moderate

Figure 4-1 Agricultural Theme Sensitivity for the Booysendal North Battery Energy Storage System Project area

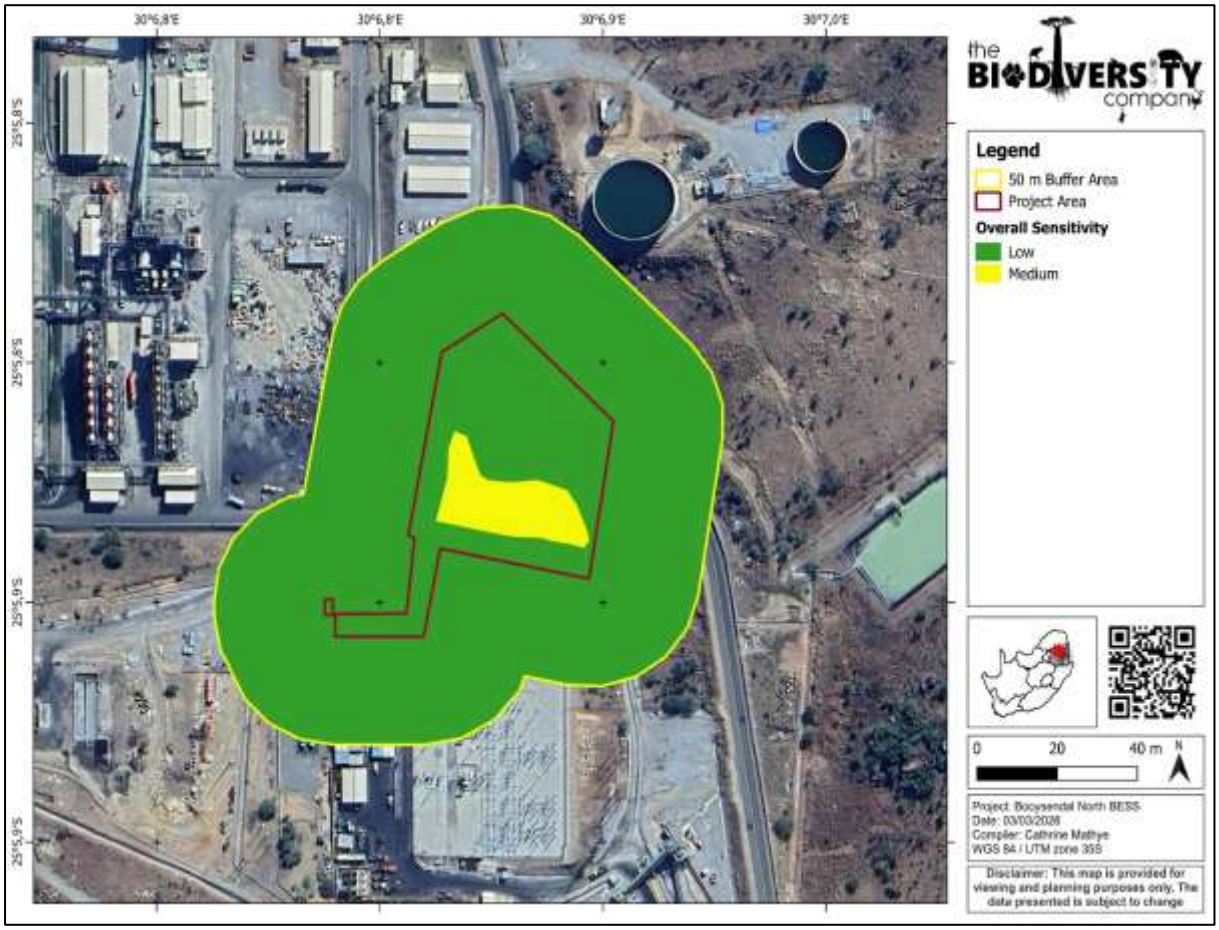


Figure 4-2 Overall sensitivity of the Booysendal North Battery Energy Storage System Project area

4.1.1 Screening Tool Comparison

The allocated sensitivities for each of the relevant themes are either disputed or validated for the assessed areas the table below. A summative explanation for each result is provided as relevant. The specialist-assigned sensitivity ratings are based largely on the agricultural land capability and potential of land resources followed in the previous section, and consideration is given to any observed active agricultural practices. 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 for Booysendal North Battery Energy Storage System Project area

Screening Tool Theme	Feature	Screening Tool	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Agricultural Theme	Low-Moderate (LC 6)	Medium	Medium	Validated –Low-Moderate land capability. The presence of medium potentials soil such as Swartland soil form.
	Low-Moderate (LC 6)	Medium	Low	Disputed –Very Low to Low land capability. The presence of shallow soils and the Urban Technosols. Moreover, the presence of low potential soil such as Mispah, Johannesburg and Witbank soil forms. These soils have as restrictive substratum horizon which restrict crop production.
	Low (LC 5)	Low	Medium	Disputed –Low-Moderate land capability. The presence of medium potentials soil such as Swartland soil form.
	Low (LC 5)	Low	Low	Validated – Very Low to Low land capability. The presence of land fragmentation, and transformation of the land use to industrial practices. Moreover, the presence of low to very low soil forms such as Mispah and Johannesburg.

5 Impact and 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 proposed 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 proposed 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/ Project Team	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Rehabilitation implemented
Restrict disturbance to the approved development footprint and limit vegetation clearing strictly to the authorised area	Engineer/Contractor/ Project Team	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.	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	Project Team	Implement an alien vegetation management plan	Construction Phase	Environmental Officer	Throughout phases	Implement alien vegetation management plan
Limit soil disturbance	Contractor/ Project Team	Clear/disturb soil on a need basis only	Construction Phase	Environmental Officer	Throughout phase	Soil disturbance is reduced
Install erosion control mats, geotextiles, silt fences, sediment barriers to limit soil and sediments runoff. Implement terracing, contour trenching to reduce runoff speed and capture sediments	Contractor/ Project Team	Land prone to soil erosion	Construction Phase	Environmental Officer	Throughout phases	Soil erosion is reduced
Lightly till any disturbed soil around the development footprint to avoid compaction	Contractor/ Project Team	Implement a rehabilitation plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented
Ensure soil stockpiles sand are sufficiently safeguarded against rain wash	Contractor/ Project Team	Implement soil management plan	Construction Phase	Environmental Officer	Throughout phase	Plan is implemented

Minimize unnecessary clearing of vegetation beyond the development footprints	Contractor/ Project Team	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).	Project Team	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/ Project Team	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.	Contractor/ Project Team	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 proposed 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 measures such as mulching and the use of geotextile sheets to stabilise exposed soils and prevent erosion.	Project Team	Apply mulching and install geotextile sheets on exposed and disturbed areas in accordance with the erosion control plan	Operational Phase	Environmental Officer	Throughout operations	Site inspection records, photographs, erosion control mesures in place
Reduce soil compaction by limiting heavy vehicle movement and confining access to designated routes. **Prevent chemical spills and contamination that may negatively affect soil fertility.**	Project Team	Restrict vehicle access to demarcated routes, implement traffic control measures, and apply spill prevention and response procedures	Operational Phase	Environmental Officer	Weekly during construction	Access control records, spill logs, site inspection reports
Seasonally identify and remove all alien and invasive plant species that emerge during construction, including weedy annuals and other alien forbs.	Project Team	Implement and maintain an alien vegetation management plan, including regular inspections and mechanical or chemical control where required	Operational Phase	Environmental Officer	Seasonal (as required)	Alien vegetation management records, removal logs, photographic evidence
Ensure successful rehabilitation of areas disturbed during construction and these areas are stabilised to avoid impacts to adjacent areas	Contractor/ Project Team	Implement spill rehabilitation plan	Operational Phase	Environmental Officer	Quarterly during first two years of operation.	Plan is implemented

5.1 Cumulative Impacts

The term "Cumulative Effect" has for the purpose of this report been defined as: the summation of effects over time which can be attributed to the operation of the Project itself, and the overall effects on the ecosystem of the site that can be attributed to the proposed Project and other existing and planned future Projects.

The geographic area of evaluation is the spatial boundary in which the cumulative effects analysis was undertaken. The spatial boundary evaluated in these cumulative effects analysis generally includes the area within the 50 km radius surrounding the proposed Project (Figure 5-1).

A temporal boundary is the timeframe during which the cumulative effects are reasonably expected to occur. The temporal parameters for these cumulative effects analysis is the anticipated lifespan of the proposed Project, commencing in 2026 and extending for the life of the Mine, which is the minimum expected Project life of the proposed Project. Where appropriate, particular focus is on near-term cumulative impacts of overlapping construction schedules for proposed Projects in the area of evaluation.

The quantitative impact of the proposed Project in isolation on agriculture is anticipated to be “Low” pre-mitigation and “Low” post-mitigation due to the absence of highly sensitive agricultural fields (Figure 5-1). The cumulative impact of the proposed Project is anticipated to be “Medium” pre-mitigation and “Low” post-mitigation. The Project area has undergone minimal modifications from other approved renewable projects within the 50 km radius (DFFE 2020).

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 Project and no irreplaceable loss of resources is anticipated.

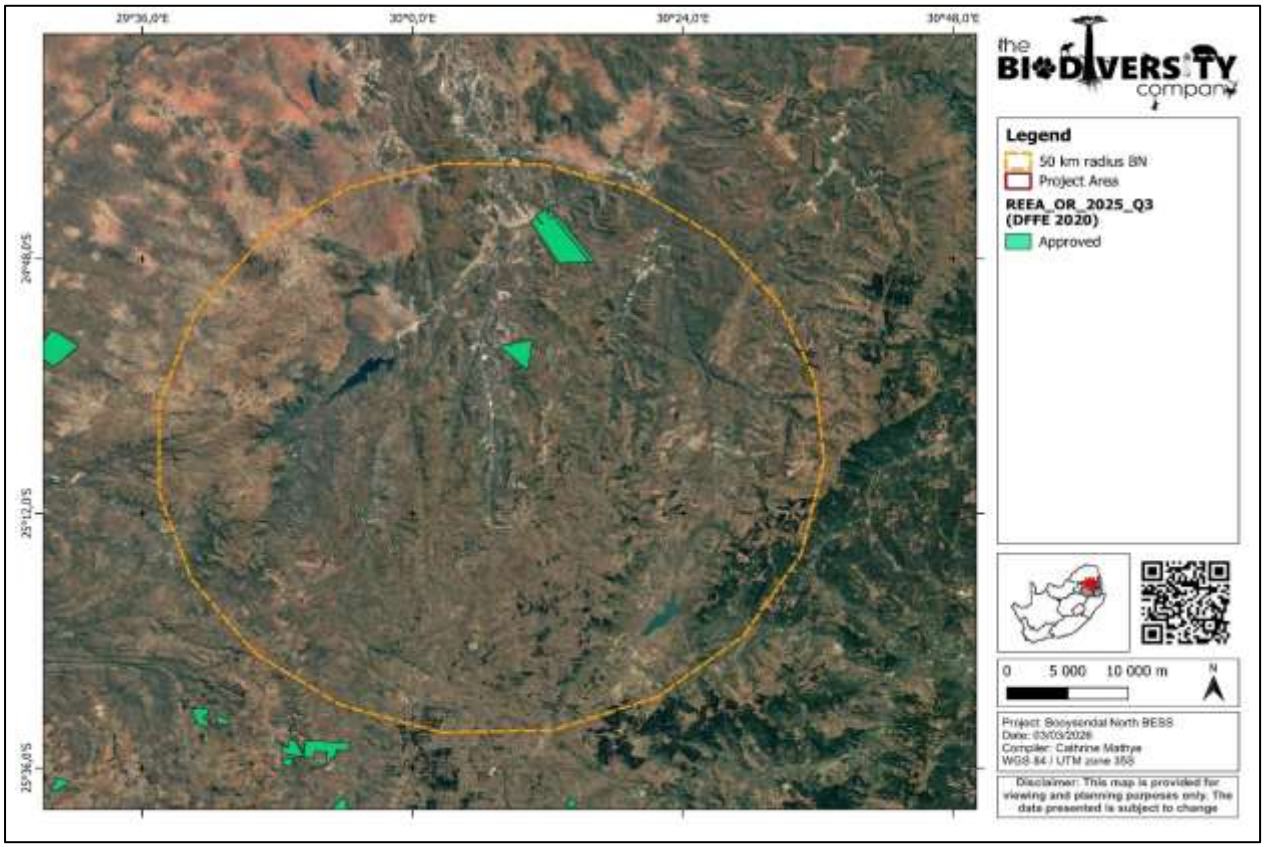


Figure 5-1 Cumulative impacts map for the Booysendal North Battery Energy Storage System Project area

Table 5-3 Cumulative Impacts associated with the proposed Booysendal North Battery Energy Storage System Project

The proposed BN BESS will result in loss of land capability, soil erosion and soil compaction of surrounding areas arising from construction activities and dust precipitation.

Component Being Impacted On	Activity Which May Cause the Impact		Pre- Mitigation							Post Mitigation						
			Duration	Extent	Potential for impact on irreplaceable resources	Severity	Consequence	Probability	Significance	Duration	Extent	Severity	Potential for impact on irreplaceable resources	Consequence	Probability	Significance
Land capability and agricultural potential	Construction of the Battery Energy Storage System will lead to site clearing, Movement of heavy machinery, potential hydrocarbon spills and leaks from machinery	Impact in isolation	2	2	1	-2	-10	2	-20	2	2	-1	1	-5	2	-10
		Cumulative impact	3	4	1	-2	-16	2	-32	2	3	-1	1	-6	2	-12

6 Conclusion

The results indicate a predominantly “Low” and “Medium” land capability sensitivities. The Low sensitivity was assigned in areas dominated with Mispah, Johannesburg and Witbank soil forms within the proposed BN BESS Project area. The medium sensitivity was assigned to the areas dominated by the Swartland soil form. The overall sensitivity of the proposed Project area is predominately Low sensitive, with areas ranging from Low to Medium sensitivities.

It is the specialist’s opinion that the proposed BN BESS Project will have an overall low residual impact on the agricultural production ability of the land. The proposed Project may be favourably considered for development.

6.1 Developable Areas

The Project area for the proposed BN BESS can be developed overall for the proposed Project layout. The sensitivities of the identified soils range from Low to Medium which will have acceptable impacts on soil resources (Figure 6-1).

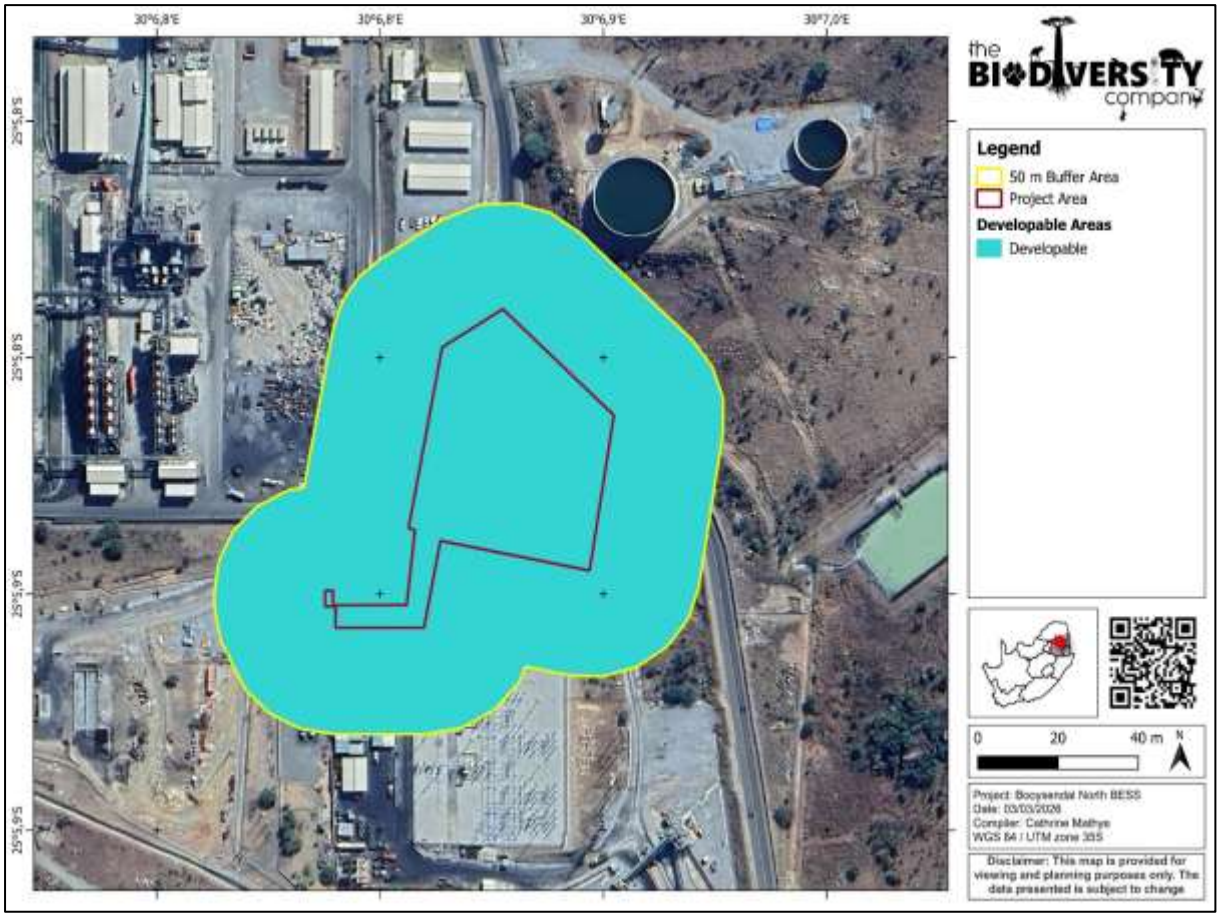


Figure 6-1 Developable areas for the Booysendal North Battery Energy Storage System Project area

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8 Appendix Items

8.1 Appendix A – Specialist Declaration of Independence

DECLARATION

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 Regulation 48 and is punishable in terms of Section 24F of the Act.

Dr Matthew Mamera

Soil Scientist

The Biodiversity Company

February 2026

DECLARATION

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 48 and is punishable in terms of Section 24F of the Act.

Cathrine Mathye

Soil Scientist

The Biodiversity Company

February 2026

8.2 Appendix B – Specialist CV

Matthew Mamera

Pr Sci Nat 116356 +27 785 772 668 matthew@thebiodiversitycompany.com

PROFILE SUMMARY

Environmental and ecological specialist with 10 years' consulting experience, with international working experience. Specialist experience in project exploration, mining, engineering, hydropower, renewable energy, and private sector developments. Project management of national and international multi-disciplinary projects. Provides specialist guidance, technical support, and facilitation for compliance with in-country legislative requirements and international lender standards. Registered Pr Sci Nat with the South African Council for Natural Scientific Professions and the Soil Science Society of South Africa.

PERSONAL INFO

Nationality: South African Permanent Residence
Date of birth: 31 October 1988

EXPERIENCE

- Environmental Impact Assessments (EIA)
- Soil taxonomic classification (SA forms and WRB groups)
- Soil Hydropedology, Agricultural and Land contamination assessments
- Soil Carbon credits

SKILLS

- ✓ Soil and Soil Hydropedology Assessments
- ✓ Agricultural, soil and water contamination Assessments
- ✓ Rehabilitation
- ✓ Monitoring & Management Plans

LANGUAGES

English – Proficient
Zulu, Xhosa, Ndebele, Sotho – Conversational
Afrikaner - Basic

Signed: Dr Matthew Mamera

ACADEMIC QUALIFICATIONS

University of the Free State (2021): Doctor of Philosophy (PhD) - Soil Science:
Title: *Assessing pollution and managing faecal sludge through biochar applications in Phuthaditjhaba, South Africa.*

University of the Fort Hare (2018): Master of Science (MSc) - Soil Science:
Title: *Pollution potential of on-site dry sanitation systems associated with the Mzimvubu Water Project, Eastern Cape, South Africa.*

University of the Fort Hare (2015): Bachelor of Science Honours *Cum laude* (Hons) – Soil Science

University of the Fort Hare (2001 - 2004): Bachelor of Science Agriculture in Soil Science. Majors: Soil Science.

PROFESSIONAL EXPERIENCE

Mar 2022 – Present	**The Biodiversity Company** Soils Unit Manager / Soil & Soil Hydropedology
Feb 2018 – Dec 2020	**University of the Free State** Junior Researcher, lecturer / Soil Science
Jan 2015 – Dec 2017	**University of Fort Hare** Junior Research, Tutor / Soil Science

INTERNATIONAL EXPERIENCE

Angola, Botswana, Namibia, Zambia, South Africa

Cathrine Mathye

Cand Sci Nat 127950 +27 81 803 9947 cathrine@thebiodiversitycompany.com

PROFILE SUMMARY

Soil Science specialist with ~ 3 years' consulting experience. Specialist experience in soil classsfication mining, agriculture, engineering, renewable energy, and private sector developments. Project management of national projects. Provides specialist guidance, technical support, and facilitation for compliance with in-country legislative requirements. Registered Cand Nat Sci with the South African Council for Natural Scientific Professions (SACNASP).

PERSONAL INFO

Nationality: South African

Date of birth: 11 March 1996

EXPERIENCE

Soil taxonomic classification (SA form)

GIS and soil mapping

Environmental Impact Assessment (EIA)

Environmental Management Programmes (EMP)

Agricultural potential assessments

SKILLS

- ✓ Soil Classification
- ✓ Soil & Crop Management
- ✓ Irrigation Management
- ✓ Monitoring & Management Plans
- ✓ Project Management

LANGUAGES

English – Proficient

IsiZulu, isiXhosa & Tshivenda – Conversational

Xitsonga, Sesotho, Sepedi - Proficient

ACADEMIC QUALIFICATIONS

University of the Free State (2022): MASTER OF SCIENCE IN AGRICULTURE (MSc)– Soil Science Interdisciplinary
Title: *Impact of livestock grazing management systems on below-ground carbon fractions in the semi-arid regions of South Africa.*

University of Limpopo (2014 - 2018): Bachelor of Science (BSc) – Agriculture (Soil Science)
Title: *The effects of woody plant encroachment on soil physical properties of one soil type in the Savannah rangelands of Limpopo Province.*

PROFESSIONAL EXPERIENCE

Jun 2024– Present	**The Biodiversity Company** Soil Specialist
Jan 2023 – Jul 2023	**Department of Agriculture land reform & rural development (FS)** Assistant Agricultural Practitioner
Feb 2022 – Oct 2022	**University of the Free State** Student Assistant
Feb 2019– Jan 2021	**Department of Agriculture land reform & rural development (DWUID)** Soil and water science Intern

INTERNATIONAL EXPERIENCE

South Africa