



**SOIL AND AGRICULTURAL COMPLIANCE
STATEMENT FOR THE PROPOSED KELVIN
POWER STATION COMBINED CYCLE GAS
TURBINE POWER PLANT PROJECT**

**City of Ekurhuleni Metropolitan Municipality, West
Rand District Municipality, Gauteng Province,
South Africa**

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Report Name	SOIL AND AGRICULTURAL COMPLIANCE STATEMENT FOR THE PROPOSED KELVIN POWER STATION COMBINED CYCLE GAS TURBINE POWER PLANT PROJECT	
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Declaration	<p>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 interest 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.</p>	

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1 Introduction

1.1 Background

The Biodiversity Company was appointed to conduct a soil and agricultural assessment for the proposed development of Kelvin Power Combined Cycle Gas Turbine (CCGT) Project. The proposed development is located approximal 5 km west of the O.R Tambo International Airport, in Kempton Park, within the City of Ekurhuleni Metropolitan Municipality in the Gauteng Province.

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). 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 National Web based Environmental Screening Tool (DFFE, 2024) has characterised the agricultural theme sensitivity of the project area as predominantly "Medium", with a key consideration of this assessment being the determination of agricultural theme sensitivities for the project. Therefore, the proposed project area was found to have a "low" sensitivity due to the surrounding cumulative impacts.

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 project.

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

1.2 Project Description

The following project description is as per information provided by EIMS (2024):

The applicant, Kelvin Power (Pty) Ltd, is proposing the development of a Combined Cycle Gas Turbine (CCGT) Power Plant at the Kelvin Power Station located in Kempton Park, within the City of Ekurhuleni Metropolitan Municipality. Kelvin intends to construct a CCGT with generation capacity of up to 600 MW at the previous Kelvin A-station site area. Kelvin aims to supply the electricity generated to Eskom through a Power Purchase Agreement (PPA) (see Figure 1-1).

THE CCGT Power Plant will comprise of one gas turbine, a heat recovery boiler, and a steam turbine (with associated High Voltage switchgear and control gear). The gas turbine will receive natural gas from the Sasol gas pipeline network into the gas turbine where the combustion will take place producing mechanical energy that is converted by the generator to electric power and a hot exhaust gas. The hot exhaust gas will be captured by the heat recovery boiler where treated water will be heated producing high pressure steam with high potential energy. The steam will be moved to the steam turbine where the potential energy contained in the steam will be converted to mechanical energy powering a generator that will produce electricity. The steam is then discharged into condenser where it is then collected and returned to the boiler to produce more steam (recycling).

The proposed CCGT Power Plant will comprise of one gas turbine, heat recovery boiler and steam turbine. The main structures comprising the plant include a control room, gas turbine unit, mechanical drift cooling tower, steam turbine building, heat recovery steam generator (HRSG) and HRSG stack, water treatment plant for the cooling tower water, raw water and demineralised water tanks, fuel gas, compressor building, a High Voltage switchyard, auxiliary buildings, and administration buildings. Other

infrastructure includes additional water and treatment sewage water reticulation pipelines, as well as electricity transmission lines to the City Power Sebenza substation adjacent to the power station (see Figure 1-3).

Kelvin plans to receive Natural Gas to the CCGT plant via Sasol's gas pipeline network. A short pipeline will be required to connect to the existing gas pipeline network. It is noteworthy that various gas suppliers are currently being engaged to the supply of gas to the CCGT plant via the existing Sasol gas pipeline.

The proposed CCGT is proposed to consist of MW to EHV step-up transformers to tie the generators to the grid. Electricity generated as the Power Station will be evacuated from the plant by means of a new 2754 kV lines (or possible cables) with an approximate length of 250 m from the generating plant to the Sebenza 275/88 kV Substation located adjacent to the proposed CCGT plant. Eskom and City Power have shared ownership of the Sebenza Substation and already has space allocated for the integration of Kelvin Power via two 275 kV bays. The Sebenza Substation is connected to the Eskom grid via 275Kv powerlines to Prospect Substation with a transfer capacity of approximately 625MVA each.

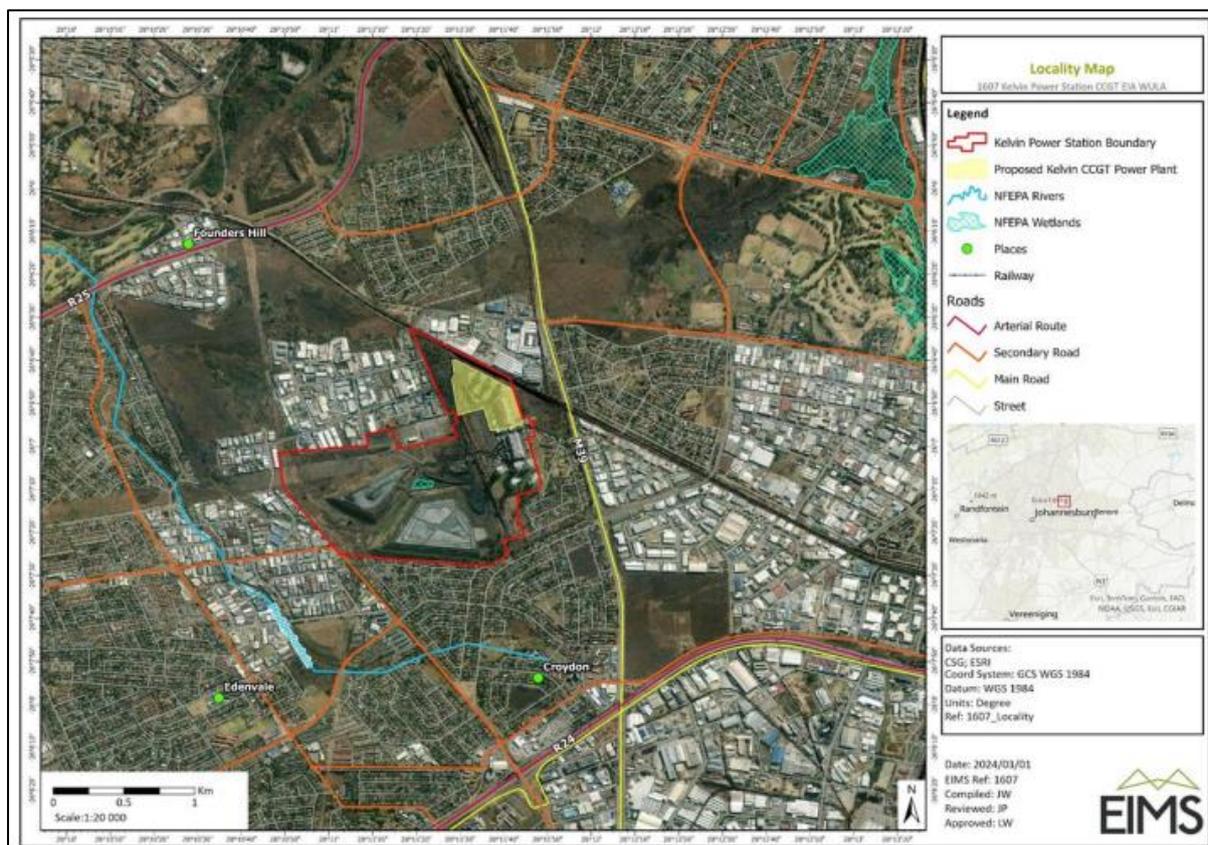


Figure 1-1 Map showing the proposed development area (yellow) and the Kelvin Power Station Boundary (red).

1.3 Project Area

The extent of the property/development footprint is referred to as the Project Area of Influence (PAOI) and pertains to the project area. A map of the PAOI and buffered area in relation to the local region is presented in Figure 1-2 . A map illustrating the proposed layout assessed is presented in Figure 1-3 . The surrounding land uses include mainly industrial and residential areas.

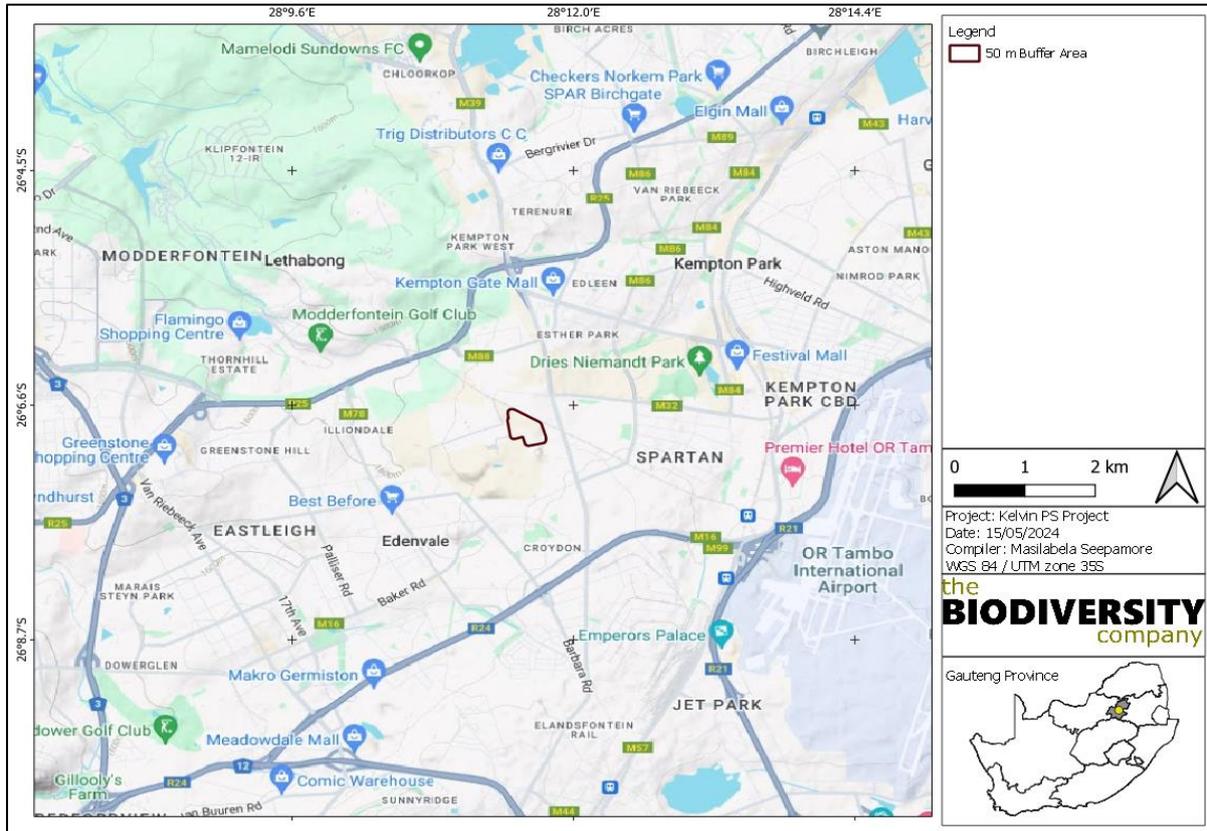


Figure 1-2 Spatial context of the proposed development

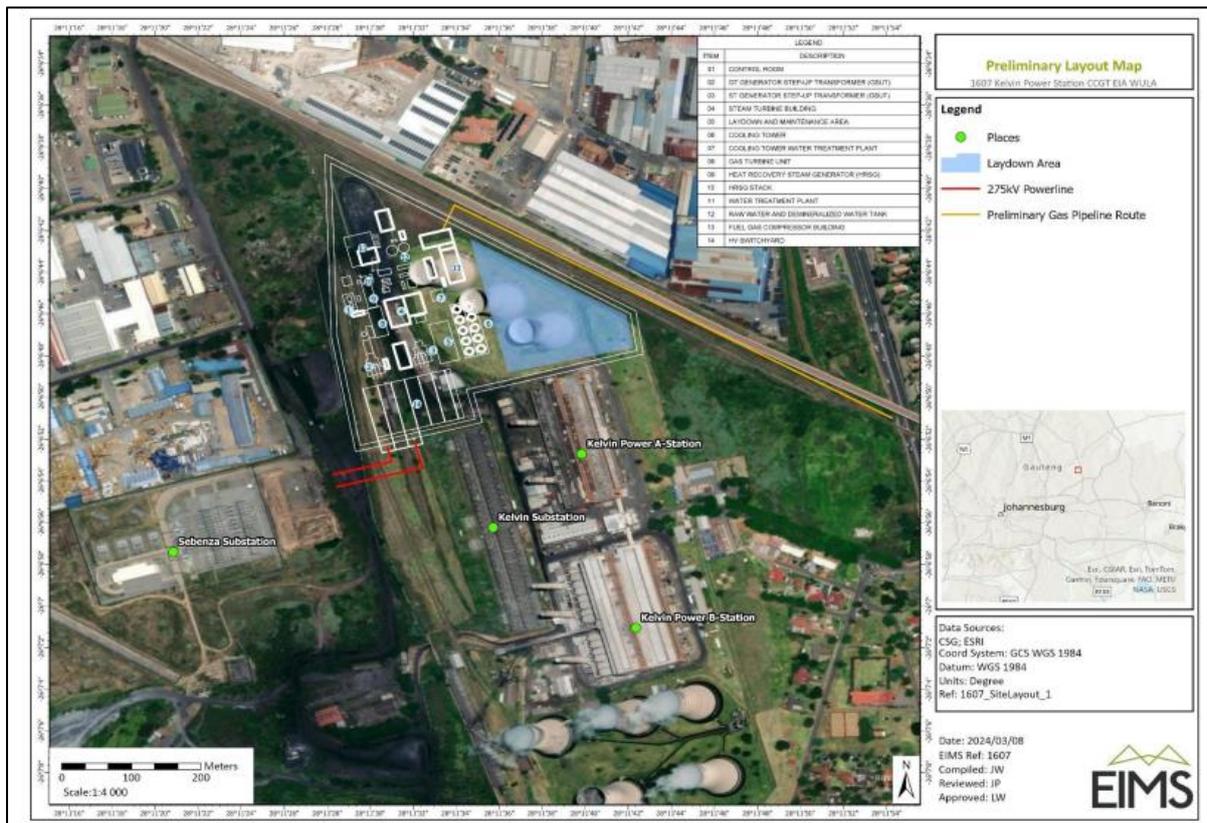


Figure 1-3 Preliminary Site Layout Map

1.4 Scope of Work

In addition to the requirements stipulated in GNR 320, the following Terms of Reference, as stipulated, apply to the Agricultural Compliance Statement:

- Ensure a thorough assessment, which includes both the desktop assessment of databases and aerial photography; a description of the on-site verification of the agricultural potential of the area; and the soil forms present in the development area;
- Identify and assess potential impacts on both agricultural potential and soil resulting from the proposed project;
- Identify and describe potential cumulative soil, agricultural potential and land capability impacts resulting from the proposed project in relation to proposed and existing developments in the surrounding area; and
- Recommend mitigation, management, and monitoring measures, to minimise impacts and/or optimise benefits associated with the proposed project.

1.5 Assumptions and Limitations

The following aspects were considered as limitations;

- Soil fertility analysis was not conducted on-site for this report;
- The GPS used for ground truthing is accurate to within five meters. Therefore, the wetland and the observation site's delineation plotted digitally may be offset by at up to five meters to either side; and
- No heavy metals have been assessed nor fertility been analysed for the relevant classified soils.

1.6 Key Legislative Requirements

The report follows the protocols as stipulated for agricultural assessment in Government Notice 320 of 2020 (GNR 320). This Notice provides the procedures and minimum criteria for reporting in terms of Sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (No. 107 of 1998) (NEMA).

The above mentioned are supported by additional legislation that aims to manage the impact of development on the environment and the natural resource base of the country. Related legislation to this effect includes:

- Conservation of Agricultural Resources Act (Act 43 of 1983);
- Environment Conservation Act (Act 73 of 1989);
- National Environmental Management Act (Act 107 of 1998); and
- National Water Act (Act 36 of 1998).

1.7 Legislative Framework

In line with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on soil and agricultural assessment as per the Government Notice 320 published

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” – the following has been assumed:

- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified on the screening tool as being of:
 - “Medium sensitivity” for agriculture, must submit an Agricultural Compliance Statement.

An Agricultural Compliance Statement Report must contain the information as presented in below.

Table 1-1 *Agricultural Compliance Statement report information requirements as per the relevant protocol, including the location of the information within this report*

Information to be Included (as per GN 320, 20 March 2020)	Report Section
details and relevant expertise as well as the SACNASP registration number of the soil scientist or agricultural specialist preparing the statement including a curriculum vitae	Pg i/ Appendix B
a signed statement of independence by the specialist	Appendix C
a map showing the proposed development footprint (including supporting infrastructure) with a 50 m buffered development envelope, overlaid on the agricultural sensitivity map generated by the screening tool	Section 3.3 or Figure 3-9
confirmation from the specialist that all reasonable measures have been taken through micro-siting to avoid or minimise fragmentation and disturbance of agricultural activities	Section 4
a substantiated statement from the soil scientist or agricultural specialist on the acceptability, or not, of the proposed development and a recommendation on the approval, or not, of the proposed development	Section 4.2
any conditions to which this statement is subjected	Section 4.3
where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr	Section 4.1
a description of the assumptions made and any uncertainties or gaps in knowledge or data	Section 1.4

A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

2 Fieldwork

Field assessment for the proposed project area was conducted on the 7th of May 2024, to determine the soil forms and current land uses within the assessed area (Figure 2-1).

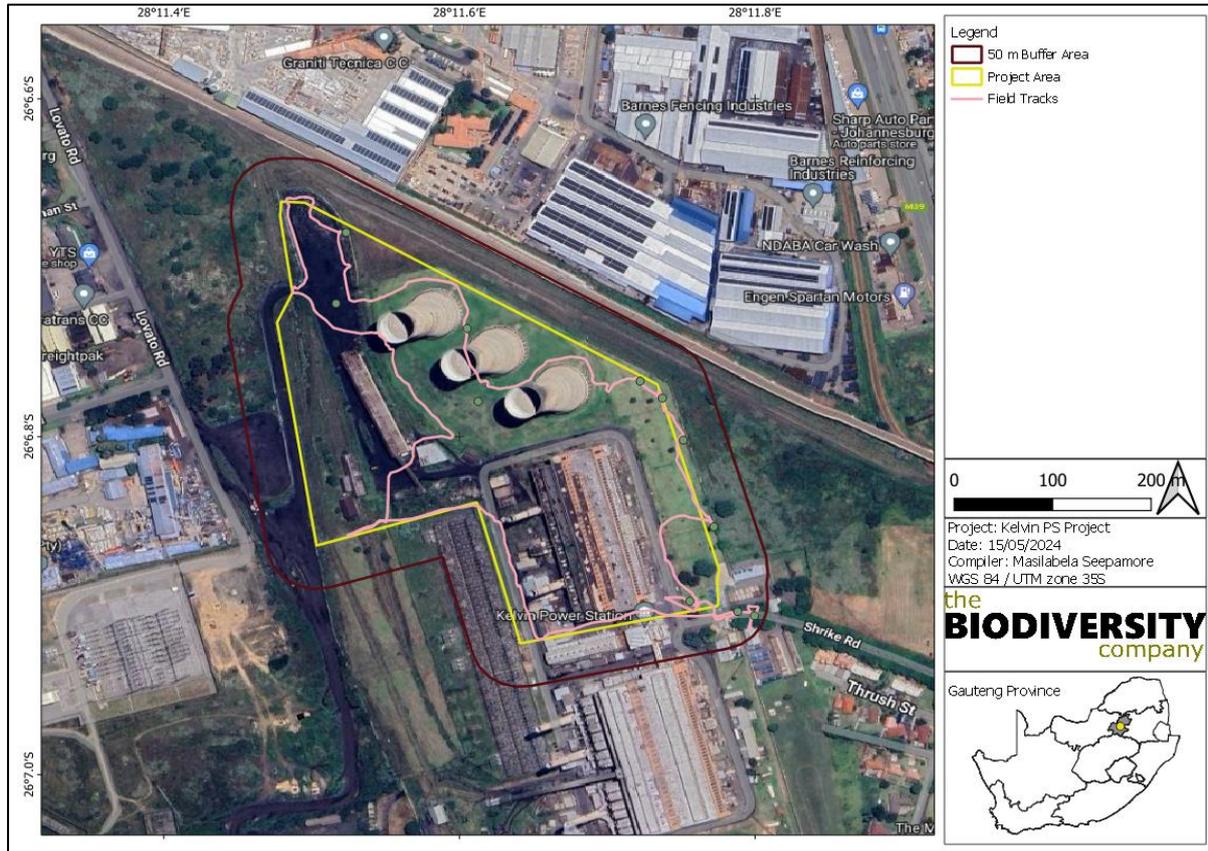


Figure 2-1 Map illustrating the field tracks of the field survey

3 Results and Discussion

3.1 Desktop Information

3.1.1 Climate

The project area falls within the Carletonville Dolomite Grassland vegetation. It is characterised with warm-temperate summer-rainfalls, with high summer temperatures and severe frequent frost occurrence in winter. The area has a MAP of 560 mm (Mucina & Rutherford, 2006; Figure 3-1).

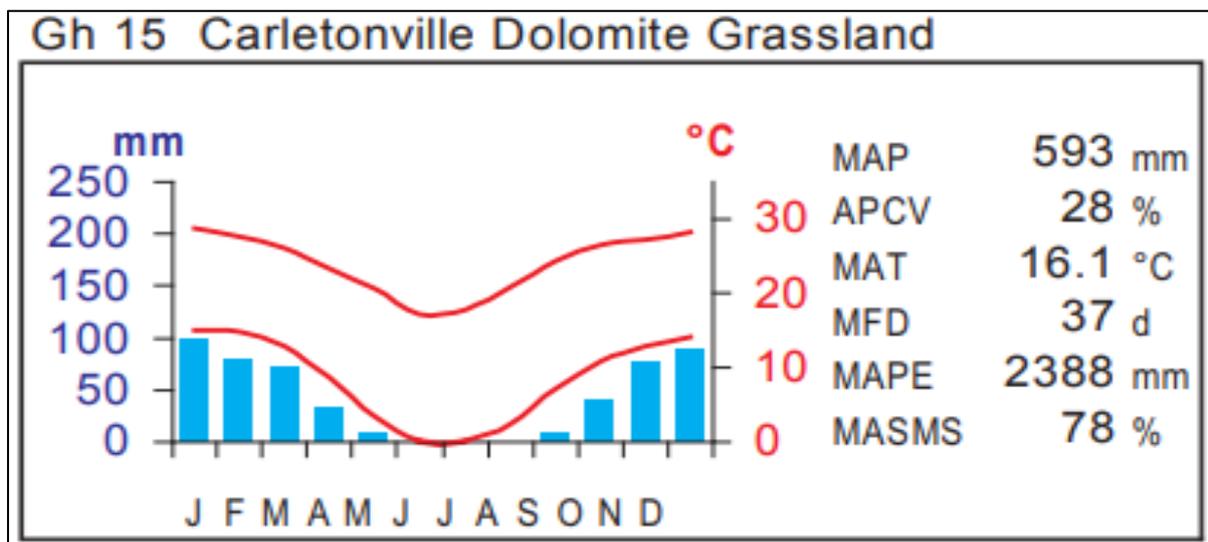


Figure 3-1 Summarised climate for the region (Mucina & Rutherford, 2006)

3.1.2 Geology & Soils

The geology of the area is almost exclusively dolomite of the Malmani Subgroup (Chuniespoort Group, Transvaal Supergroup), where underground dissolution of the rock causes sinkholes. More than 50% of the main soil types are relatively shallow (50-150 mm) and rocky, with the dominant soil forms Mispah, Glenrosa and shallow Hutton. The latter soils are associated with the Fa land type.

According to the land type database (Land Type Survey Staff, 1972 - 2006), the project area falls within the Ab 11 land type (see Figure 3-2). The Ab 11 land type mainly consists of Hutton, Willowbrook and Rensburg soil forms according to the Soil classification working group, (1991), with the occurrence of other soils within the landscape. The Hb land type are characterised by red-yellow apedal, freely drained soils; red, dystrophic and/or mesotrophic. The land terrain units for the featured Ab 11 land type are illustrated in Figure 3-3 with the expected soils listed in

Table 3-1.

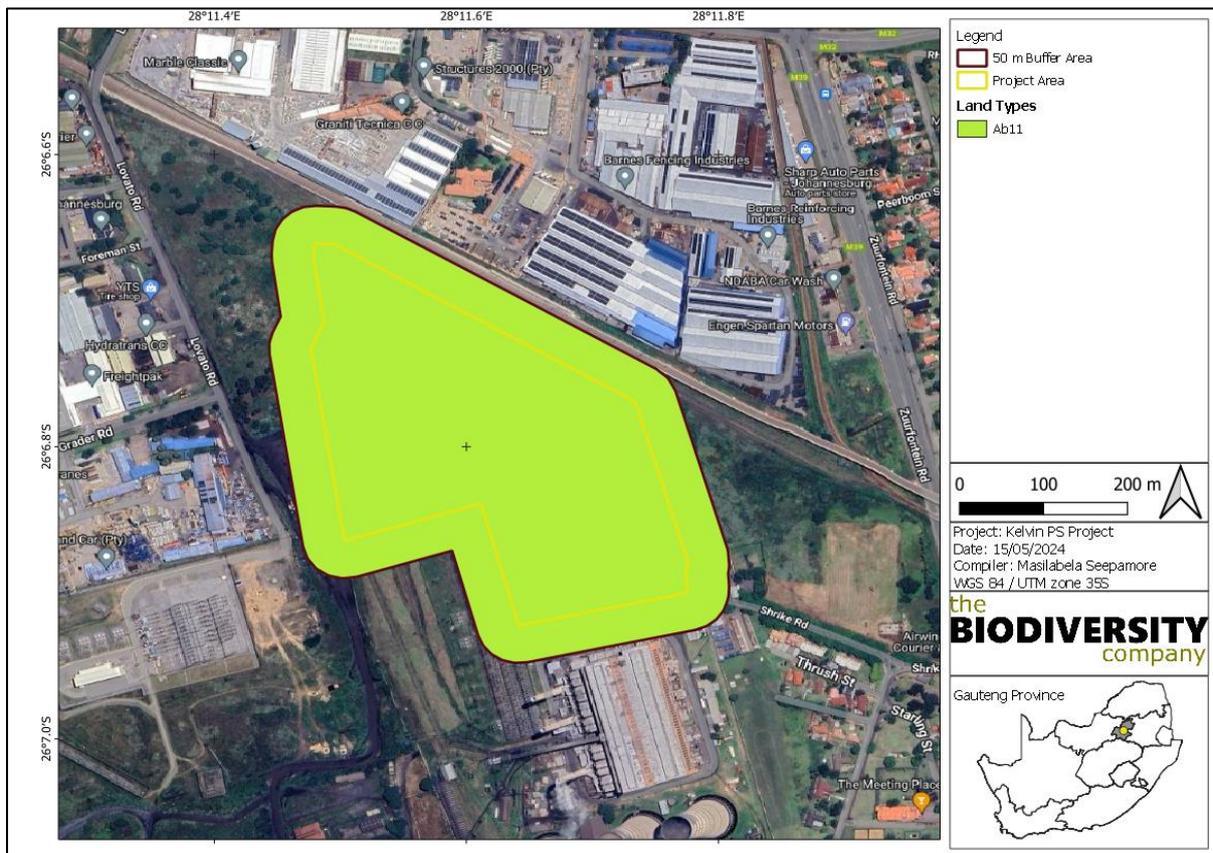


Figure 3-2 Land types associated with the proposed project area

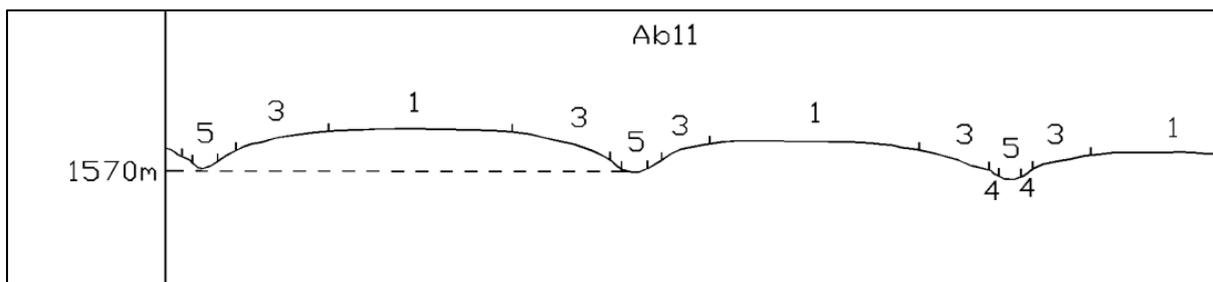


Figure 3-3 Illustration of land type Ab 11 terrain units (Land Type Survey Staff, 1972 - 200

Table 3-1 Soils expected at the respective terrain units within the Ab 11 land type (Land Type Survey Staff, 1972 - 2006)

		Terrain units					
1 (45%)		3 (45%)		4 (5%)		5 (5%)	
Hutton	80%	Hutton	65%	Hutton	40%	Willowbrook, Rensburg	50%
Shortlands	10%	Shortlands	10%	Valsrivier	20%	Bonheim	20%
Bainsvlei	5%	Bainsvlei	10%	Bainsvlei	15%	Valsrivier	20%
Bare Rocks	5%	Bonheim	5%	Bonheim	15%	Westleigh	10%
		Westleigh	5%	Westleigh	10%		
		Bare Rocks	5%				

3.1.3 Terrain

The slope percentage of the proposed project area has been calculated and is illustrated in Figure 3-4. Most of the project area is characterised by a slope percentage ranging between 0 to 10% with some irregularities in areas with slopes between 10 to 25%. This illustration indicates a mostly non-uniform topography with occurrence of some steep sloping being present. The Digital Elevation Model (DEM) of the project area (Figure 3-5) indicates an elevation of 1663 to 1686 Metres Above Sea Level (MASL).

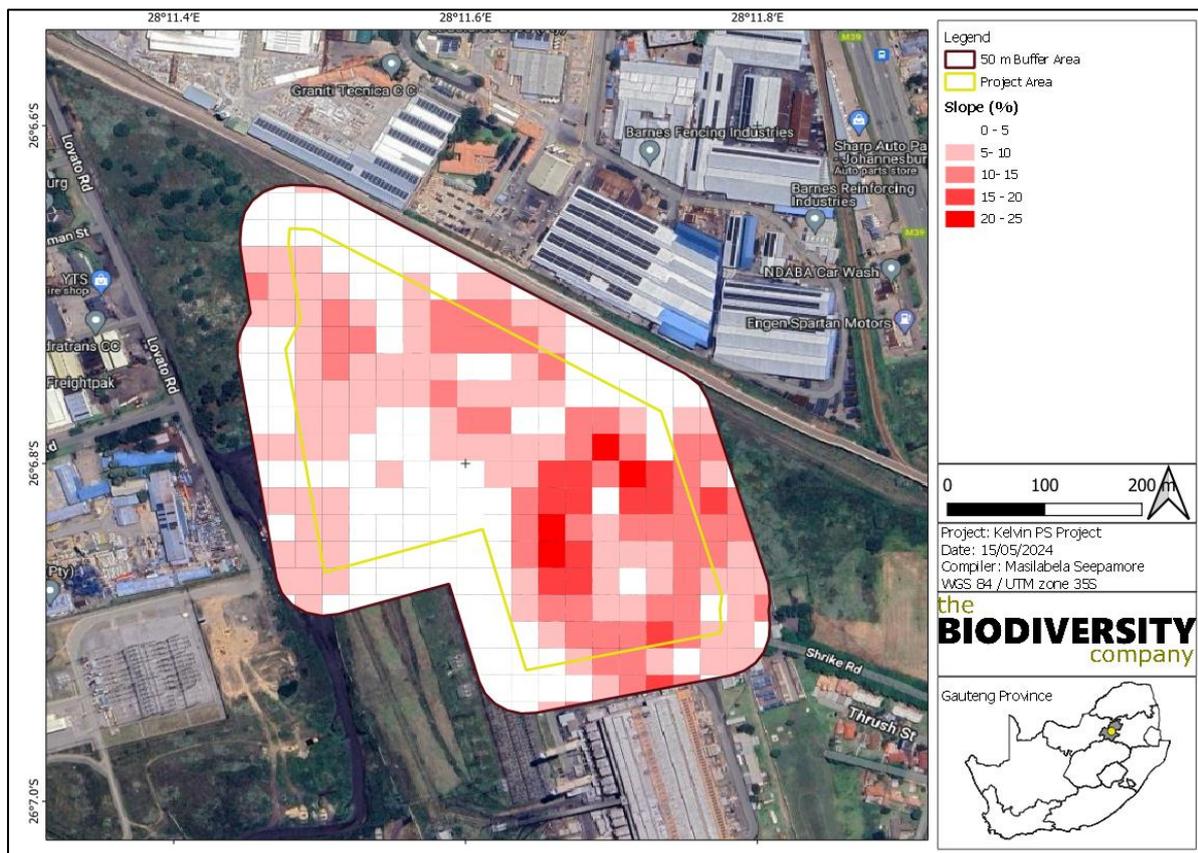


Figure 3-4 Slope percentage map for the project area

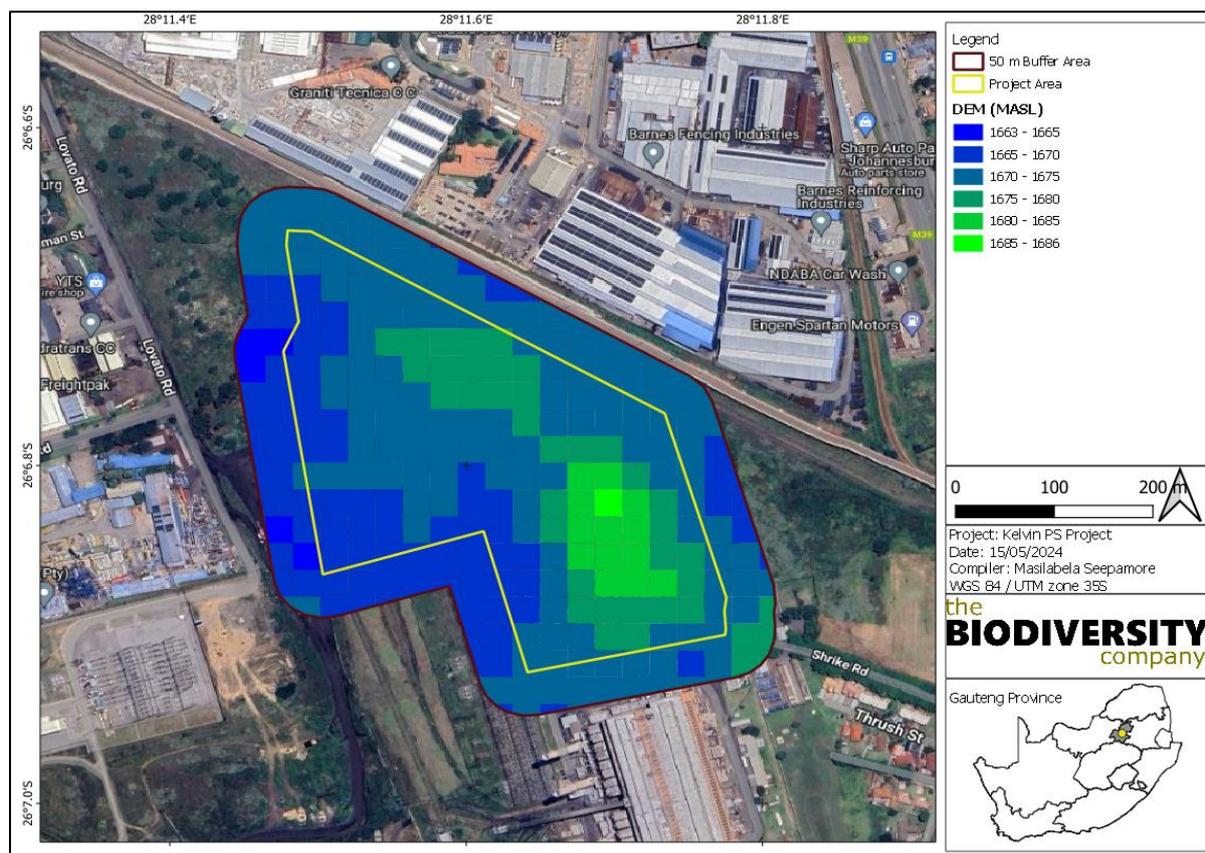


Figure 3-5 Digital Elevation Model of the project area (Metres Above Sea Level)

3.2 Baseline Findings

The three representative soil forms that were identified within the 50 m buffer area include the Nkonkoni, Glenrosa and Witbank soil forms. The proposed project area is dominated by the Witbank and Glenrosa soil forms and with Nkonkoni soil form being the least dominant soil form within the 50 m buffer area (see Figure 3-6). The study area falls predominately on shallow red apedal soil which are mostly covered by transported anthropogenic materials. The different soil forms identified within the proposed project area, as well as the current land uses are illustrated in Figure 3-7 and Figure 3-8, respectively.

The most sensitive soil form identified within the proposed project area, with a moderate suitability for crop production is the Nkonkoni soil form. The Nkonkoni soil form consists of an orthic topsoil horizon on top of a red apedal horizon underlain with a lithic horizon below. The soil is characterised with a moderate suitability for crop production due to its good drainage, aeration and inherent fertility. However, the presence of a shallow lithic horizon may impede root development and decrease the total soil water storage capacity which is critical for crop production under rainfed conditions.

Other less sensitive soil forms identified within the project area include Glenrosa and Witbank soil forms. The Glenrosa soil form consists with an orthic topsoil horizon on top of a lithic horizon below. The Witbank soil form consists of transported technosols mainly anthropogenic material covering natural soil. These soils are considered to have a lower suitability for crop production due to their restrictive limitations which include impermeable subsoil horizon of a fractured rock and occurrence of various elements at high concentrations that can be toxic for majority of important agronomic crops, which are found within the transported anthropogenic materials.

The most sensitive land capability of the above-mentioned soils has been determined to be class “IV”, and the other less sensitive soils were determined to be of class “VI” and “VIII.” The land capability class “IV” is characterised with severe limitations with a low arable potential and is mostly suitable for

long term leys. The land capability class “VI” is characterised by limitations that preclude cultivation, and is mostly suitable for veld, pasture, and afforestation. Lastly, the land capability class “VIII” is characterised with extremely severe limitations, non-arable and is mostly suitable for wildlife. A climate capability of level 8 has been assigned to the proposed project area given the low Mean Annual Precipitation (MAP) and the high Mean Annual Potential Evapotranspiration (MAPE) rates. By using the determined land capability for the most sensitive soils and the determined climate capability, a land potential of “L6” was calculated for the most sensitive land capability class. The land potential level for the less sensitive soil forms was calculated to be “L7” and “L8”. The areas associated with the “L6”, “L7” and “L8” land potential are considered to be non-arable.

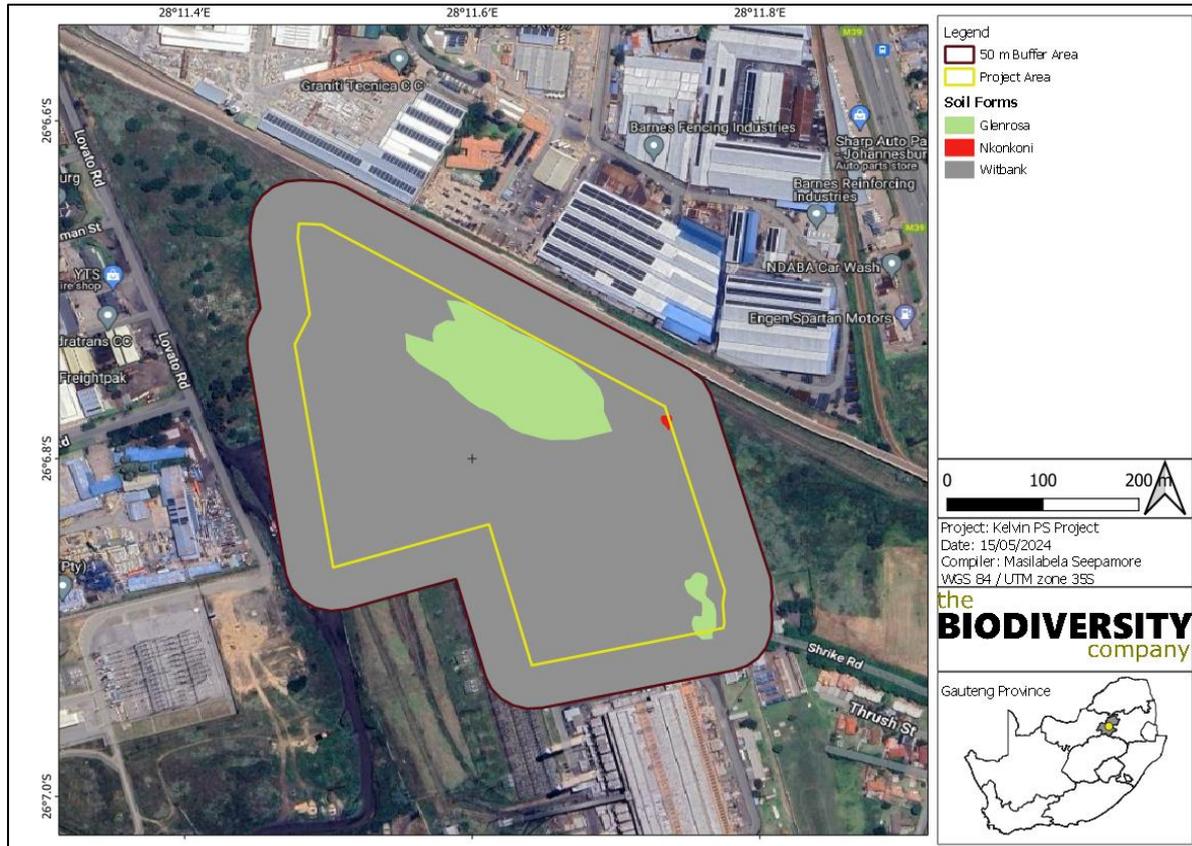


Figure 3-6 Soil forms found within the proposed project area

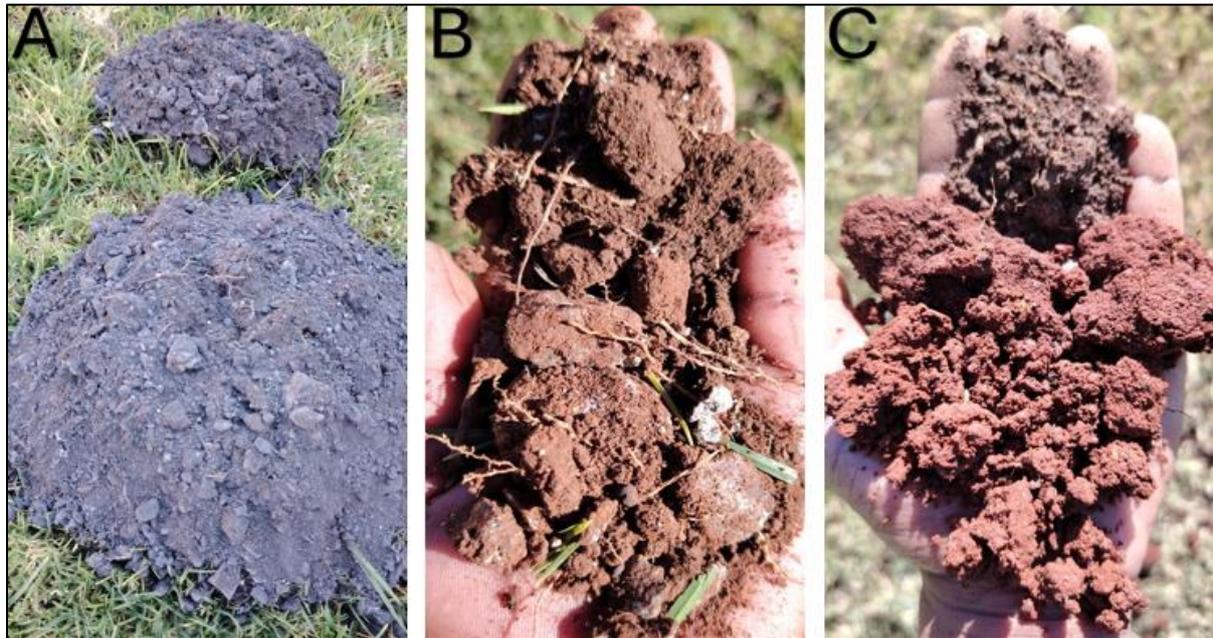


Figure 3-7 Diagnostic soil horizons identified on-site: A) Witbank Technosols; B) Glenrosa soil form; and C) Nkonkoni soil form.



Figure 3-8 Different land uses identified within the 50 m buffer area; A) & B) Kelvin Power Station Infrastructure; and C) & D) occurrence of anthropogenic material on top and within the soil.

3.3 Sensitivity Verification

3.3.1 Screening Report – Kelvin Power Station 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 that the proposed project area falls within the “High to Very High” agricultural sensitivity (Figure 3-9).

The baseline soil findings and the current land uses dispute the agricultural theme in all land capability sensitivity categories. The “Moderate High” and “High to Very High” land capability sensitivity areas coincide with low land capability soils due to the occurrence of transported anthropogenic material and shallow profile soil like Glenrosa form. These areas have been fragmented due to residential, commercial, industrial developments and the current power plant deeming them unsuitable for cropping practices.

As a result, based on the verified baseline findings and the current land uses, the land capability and land potential of the resources in the proposed project area are both classified with an overall “Low” sensitivity.

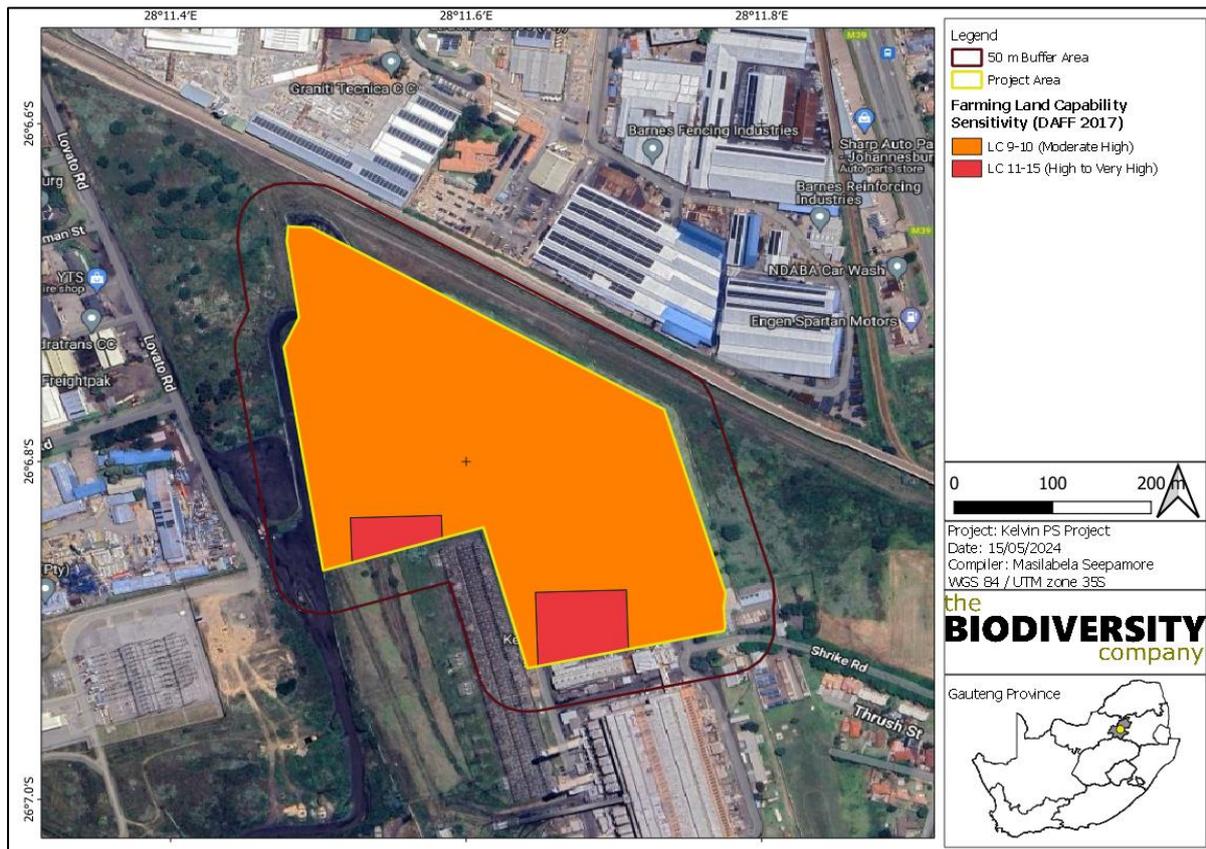


Figure 3-10 Land Capability Sensitivity (DAFF, 2017)

3.3.2 Site Ecological Importance (SEI)

The following land potential levels have been determined;

- Land potential level 6 (this land potential level is characterised by very restricted potential. Regular and/or severe limitations due to soil, slope, temperatures, or rainfall). Non-arable;
- Land potential level 7 (this land potential level is characterised by Low potential. Severe limitations due to soil, slope, temperatures, or rainfall). Non-arable; and
- Land potential level 8 (this land potential level is characterised by very low potential. Very severe limitations due to soil, slope, temperatures, or rainfall). Non-arable.

Land potential levels of the proposed area are illustrated in Figure 3-11.

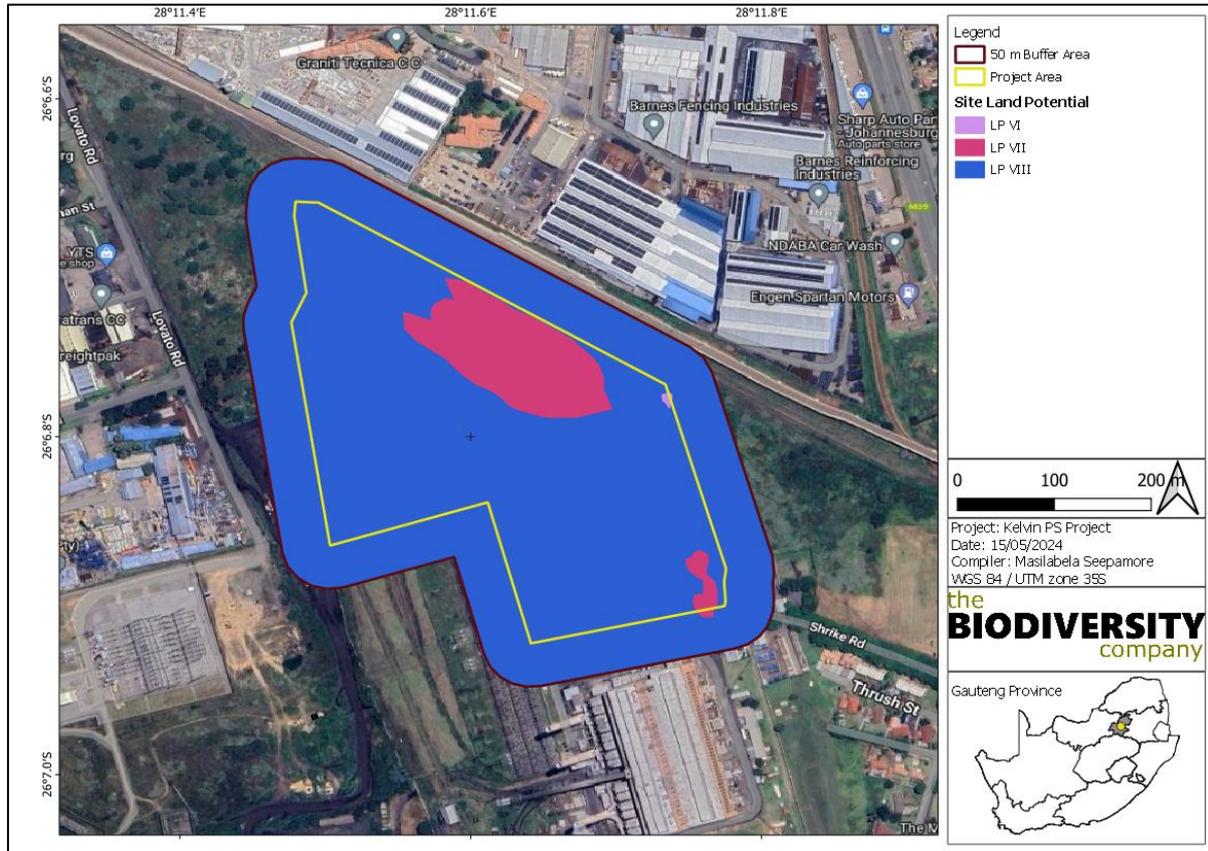


Figure 3-11 Land Potential levels within the 50 mm buffer area of the project area

The climate, soil forms and land capability were used to determine the land potential and overall sensitivity of resources relevant to this assessment. The “L5”, “L7” and “L8” land potential areas were all assigned a “Low sensitivity” (see Figure 3-12).

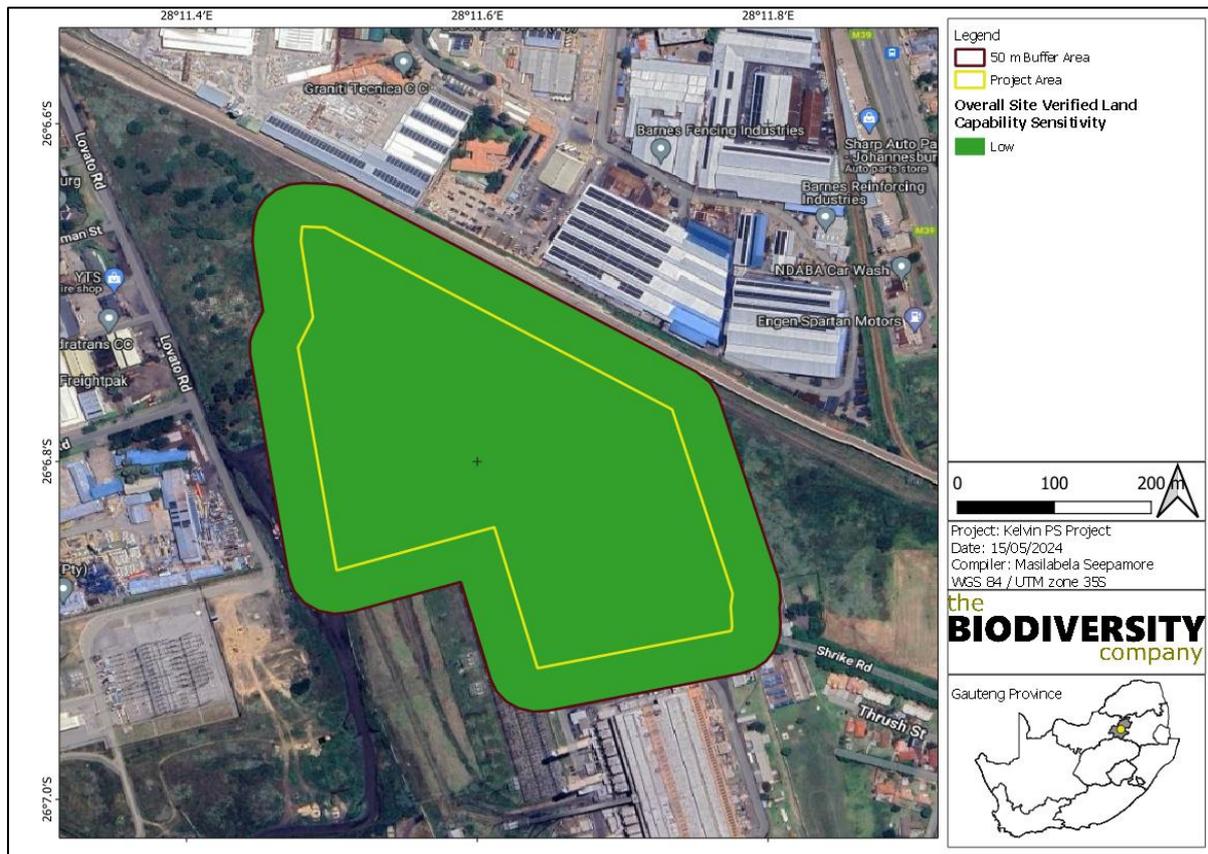


Figure 3-12 Overall site verified land capability sensitivity of the project area

Considering the soil properties, agricultural potential as well as the current land use of the proposed development area, the area has a “Low” agricultural sensitivity. Based on the confirmed sensitivities, the overall sensitivity of the proposed project area is also categorized as “Low”. The allocated sensitivities for the theme are either disputed or validated in Table 3-2 below.

Table 3-2 Summary of the screening tool vs specialist assigned sensitivities

Screening Tool Theme	Screening Tool	Specialist	Tool Validated or Disputed by Specialist - Reasoning
Agricultural Theme	Ver High	Very Low to Low	Disputed – Land Capability Very Low to Low, due to the occurrence of disturbed soil (i.e., Witbank soil forms) because of the transported anthropogenic material which may include high concentrations of various elements that can limit crop growth and development because of potential toxicity.
	High	Very Low to Low	Disputed – Land Capability Very Low to Low, due to the occurrence of disturbed soil because of the transported anthropogenic material which may include high concentrations of various elements that can impede crop growth and development because of toxicity. Shallow soils with restricted depth, root penetration, drainage like the Glenrosa

4 Conclusion

The most sensitive Nkonkoni soil form found in the proposed project area are characterised with a restrictive land potential “L6” and ultimately a “Low” sensitivity due harsh climatic condition. Other, less sensitive soil forms including the Glenrosa and Witbank forms which were also identified within the project area are also categorised with a “Low” sensitivity due their very restrictive permeability and high concentration of various potential elements which can lead to crop toxicity. The verified baseline findings dispute all the DFFE, (2024) land capability sensitivities, confirming low non-arable areas. Therefore, the proposed project area has an overall a “Low” land capability sensitivity.

It is the specialist’s opinion that the proposed development will have an overall low residual impact on the agricultural production ability of the land. That being the case, the proposed development and associated infrastructure may be favourably considered with implementation.

4.1 Management Measures

An impact assessment is not required to be included in the Agricultural compliance statement, but where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr must be provided. The following measures are provided:

- Vegetation clearance must be restricted to areas authorised for development;
- Land clearing and preparation may only be undertaken immediately prior to construction activities and within authorised areas;
- A stormwater management plan must be developed and implemented for the project; and
- If soil erosion is detected, the area must be stabilised using geo-textiles and facilitated re-vegetation.

4.2 Specialist Statement

The proposed Kelvin CCGT development area will have an overall low residual impact on the agricultural production capability of the area. The proposed development can be favourably, the implementation of mitigation measures. The following serves to substantiate this statement:

- The land capability of the area ranges from very low to low;
- The agricultural potential of the area is found to be low;
- There are no active delineated crop fields within the footprint; and
- The overall agricultural sensitivity for the development area is low.

4.3 Statement Conditions

The conclusion of this assessment on the acceptability of the proposed project and the recommendation for its approval is not subject to any conditions.

5 References

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. 2006. The Vegetation of South Africa, Lesotho, and Swaziland. Strelitzia 19. Pretoria: National Biodiversity Institute.

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.

6 Appendix Items

6.1 Appendix A: Methodology

6.1.1 Desktop Assessment

As part of the desktop assessment, baseline soil information was obtained using published South African Land Type Data. Land type data for the site was obtained from the Institute for Soil Climate and Water (ISCW) of the Agricultural Research Council (ARC) (Land Type Survey Staff, 1972 - 2006). The land type data is presented at a scale of 1:250 000 and comprises of the division of land into land types. In addition, a Digital Elevation Model (DEM) as well as the slope percentage of the area was calculated by means of the NASA Shuttle Radar Topography Mission Global 1 arc second digital elevation data by means of QGIS and SAGA software.

6.1.2 Field Survey

The site was traversed on foot. A soil auger was used to determine the soil form/family and depth. The soil was hand augured to the first restricting layer or 1.2 m. Soil survey positions were recorded as waypoints using a handheld GPS. Soils were identified to the soil family level as per the “Soil Classification: A Taxonomic System for South Africa” (Soil Classification Working Group, 2018). Landscape features such as existing open trenches were also helpful in determining soil types and depth.

6.1.3 Land Capability

Land capability and agricultural potential will be determined by a combination of soil, terrain and climate features. Land capability is defined by the most intensive long-term sustainable use of land under rain-fed conditions. At the same time an indication is given about the permanent limitations associated with the different land use classes.

Land capability is divided into eight classes, and these may be divided into three capability groups. Table 6-1 shows how the land classes and groups are arranged in order of decreasing capability and ranges of use. The risk of use increases from class I to class VIII (Smith, 2006).

Table 6-1 Land capability class and intensity of use (Smith, 2006)

Land Capability Class	Increased Intensity of Use									Land Capability Groups
I	W	F	LG	MG	IG	LC	MC	IC	VIC	Arable Land
II	W	F	LG	MG	IG	LC	MC	IC		
III	W	F	LG	MG	IG	LC	MC			
IV	W	F	LG	MG	IG	LC				
V	W	F	LG	MG						Grazing Land
VI	W	F	LG	MG						
VII	W	F	LG							Wildlife
VIII	W									
W - Wildlife		MG - Moderate Grazing			MC - Moderate Cultivation					
F - Forestry		IG - Intensive Grazing			IC - Intensive Cultivation					
LG - Light Grazing		LC - Light Cultivation			VIC - Very Intensive Cultivation					

The land potential classes are determined by combining the land capability results and the climate capability of a region as shown in the table below.

Table 6-2 The combination table for land potential classification

Land capability class	Climate capability class							
	C1	C2	C3	C4	C5	C6	C7	C8
I	L1	L1	L2	L2	L3	L3	L4	L4
II	L1	L2	L2	L3	L3	L4	L4	L5
III	L2	L2	L3	L3	L4	L4	L5	L6
IV	L2	L3	L3	L4	L4	L5	L5	L6
V	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei	Vlei
VI	L4	L4	L5	L5	L5	L6	L6	L7
VII	L5	L5	L6	L6	L7	L7	L7	L8
VIII	L6	L6	L7	L7	L8	L8	L8	L8

Table 6-3 The Land Potential Classes

Land potential	Description of land potential class
L1	Very high potential: No limitations. Appropriate contour protection must be implemented and inspected.
L2	High potential: Very infrequent and/or minor limitations due to soil, slope, temperatures, or rainfall. Appropriate contour protection must be implemented and inspected.
L3	Good potential: Infrequent and/or moderate limitations due to soil, slope, temperatures, or rainfall. Appropriate contour protection must be implemented and inspected.
L4	Moderate potential: Moderately regular and/or severe to moderate limitations due to soil, slope, temperatures, or rainfall. Appropriate permission is required before ploughing virgin land.
L5	Restricted potential: Regular and/or severe to moderate limitations due to soil, slope, temperatures, or rainfall.
L6	Very restricted potential: Regular and/or severe limitations due to soil, slope, temperatures, or rainfall. Non-arable
L7	Low potential: Severe limitations due to soil, slope, temperatures, or rainfall. Non-arable
L8	Very low potential: Very severe limitations due to soil, slope, temperatures, or rainfall. Non-arable

The land capability of the proposed footprint will be compared to the National Land Capability which was refined in 2014- 2016. The National Land Capability methodology is based on a spatial evaluation modelling approach and a raster spatial data layer consisting of fifteen (15) land capability evaluation values (Table 6-4 National Land Capability Values (DAFF,2017)

), usable on a scale of 1:50 000 – 1:100 000 (DAFF, 2017). The previous system is based on a classification approach, with 8 classes (Table 6-1). Land capability and land potential will also be determined in consideration of the screening tool to ultimately establish the accuracy of the land capability sensitivity from (DAFF, 2017).

Table 6-4 National Land Capability Values (DAFF,2017)

Land Capability Evaluation Value	Land Capability Description
1	Very low
2	
3	Very Low to Low
4	
5	Low
6	Low to Moderate
7	
8	Moderate
9	Moderate to High
10	

11	High
12	High to Very High
13	
14	Very High
15	

6.2 Appendix B: Impact Assessment

Impact	Phase	Pre-Mitigation						Pre-mitigation ER	Post Mitigation						Post-mitigation ER	Confidence	Priority Factor Criteria		Priority Factor	Final score
		N a t u r e	E x t e n t	D u r a t i o n	M a g n i t u d e	R e v e r s i b i l i t y	P r o b a b i l i t y		N a t u r e	E x t e n t	D u r a t i o n	M a g n i t u d e	R e v e r s i b i l i t y	P r o b a b i l i t y			C u m u l a t i v e I m p a c t	I r r e p l a c e a b l e l o s s		
Loss of land capability, Soil compaction Soil erosion, Land degradation	Planning	-1	1	1	1	2	1	-1,25	-1	1	1	1	1	1	-1	Low	1	1	1,00	-1
	Construction	-1	3	3	3	3	3	-9	-1	2	2	2	3	3	-6,75	Medium	2	3	1,38	-9,28125
	Operation	-1	2	3	2	3	2	-5	-1	2	2	2	2	2	-4	Low	2	3	1,38	-5,5
	Decommissioning	-1	2	2	2	3	3	-6,75	-1	2	2	1	3	2	-4	Low	2	2	1,25	-5
	Rehab and closure	-1	2	2	2	2	2	-4	-1	2	2	1	2	1	-1,75	Low	1	2	1,13	-1,96875

6.3 Appendix C Specialist declarations

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

May 2024

DECLARATION

I, Maletsatsi Mohapi, 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.



Masilabela Seepamore

Agricultural Scientist

The Biodiversity Company

May 2024

6.4 Appendix D Curriculum vitae

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 hydrogeology, pedology, land contamination, agricultural potential, land rehabilitation, rehabilitation management and wetlands resources.

Experience hydrogeological 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 Hydrogeology assessments
- Agriculture potential assessments
- Land contamination assessments

Country Experience

South Africa: All Provinces
Zambia - Kitwe and Mufulira
Angola- Zenza – Cacusó;
Luena - Saurimo

Nationality

South African Permanent Residence

Languages

English – Proficient

Ndebele, Xhosa, Shona – Proficient

Qualifications

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

Masilabela Klaas Seepamore

MSc Soil Science (*Cand Nat Sci*)

Cell: +27 788151878

Email: masilabela@thebiodiversitycompany.com

Identity Number: 8806085781088

Date of birth: 08 June 1988



Profile Summary

Working experience in South Africa

Specialist experience with soil science, agronomy and agrometeorology.

Specialist expertise include production agronomy, pedology, fertilizer recommendation, trial management, data analysis and crop modelling.

Areas of Interest

Farming, resource use efficiency production agronomy, soil classification, soil and crop research, climate change adaptation and mitigation strategies,

Key Experience

- Land suitability studies and report writing
- Soil taxonomic classification SA forms
- Fertilizer recommendation
- Crop research
- Data analysis
- Farm visit
- Technology transfer

Country Experience

South Africa

Nationality

South African

Languages

English – Proficient

Setswana, Sesotho – Proficient

Qualifications

- BASOS-FACTS Course (FERTASA)
- MSc Agriculture *Cum laude* (University of the Free State) – Soil Science (soil science, agronomy, and production agronomy)
- BSc Agriculture Honours (University of the Free State) – Soil Science (soil science, agronomy, crop nutrition)
- BSc Agricultural Agronomy and Soil Science
- Cand Nat Sci 113907



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: +27 86 625 1042

SPECIALIST DECLARATION FORM – AUGUST 2023

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

REPORT TITLE

Soil and Agricultural Compliance Statement for the proposed Kelvin Power Station Combined Cycle Gas Turbine Power Plant Project

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.dffe.gov.za/documents/forms>.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply 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 act, when applying for environmental authorisation - GN 320/2020', where applicable.

1. SPECIALIST INFORMATION

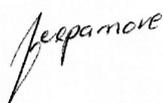
Title of Specialist Assessment	Soil & Agricultural Compliance Statement
Specialist Company Name	The Biodiversity Company
Specialist Name	Masilabela Seepamore
Specialist Identity Number	8806085781088
Specialist Qualifications:	MSc Soil Science
Professional affiliation/registration:	SACNASP 113907
Physical address:	777 Peridot Street, Jukskei Park
Postal address:	777 Peridot Street, Jukskei Park
Postal address	2188
Telephone	N/A
Cell phone	078 815 1878
E-mail	masilabela@thebiodiversitycompany.com

SPECIALIST DECLARATION FORM – AUGUST 2023

2. DECLARATION BY THE SPECIALIST

I, Masilabela Seepamore declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- 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 NEMA Act.



Signature of the Specialist

The Biodiversity Company

Name of Company:

12 Jun 2024

Date

SPECIALIST DECLARATION FORM – AUGUST 2023

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Masilabela Seepamore, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.

Seepamore

Signature of the Specialist

The Biodiversity Company

Name of Company

12/06/2024

Date

Signature of the Commissioner of Oaths

12 Jun 2024

Date

Certified as a true copy of original

Farai Shadreck Mbirimi BD52805

Minister of Religion / Commissioner of Oaths

391 11th Road, Erand, Midrand 1685

Date

12/06/2024



forestry, fisheries & the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

Private Bag X447, Pretoria, 0001, Environment House, 473 Steve Biko Road, Pretoria, 0002 Tel: +27 12 399 9000, Fax: +27 86 625 1042

SPECIALIST DECLARATION FORM – AUGUST 2023

Specialist Declaration form for assessments undertaken for application for authorisation in terms of the National Environmental Management Act, Act No. 107 of 1998, as amended and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended (the Regulations)

REPORT TITLE

Specialist Assessments for the proposed Kelvin Power Station Combined Cycle Gas Turbine Power Plant Project

Kindly note the following:

1. This form must always be used for assessment that are in support of applications that must be subjected to Basic Assessment or Scoping & Environmental Impact Reporting, where this Department is the Competent Authority.
2. This form is current as of August 2023. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the form have been published or produced by the Competent Authority. The latest available Departmental templates are available at <https://www.dffe.gov.za/documents/forms>.
3. An electronic copy of the signed declaration form must be appended to all Draft and Final Reports submitted to the department for consideration.
4. The specialist must be aware of and comply 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 act, when applying for environmental authorisation - GN 320/2020', where applicable.

1. SPECIALIST INFORMATION

Title of Specialist Assessment	Reviewer
Specialist Company Name	The Biodiversity Company
Specialist Name	Andrew Husted
Specialist Identity Number	7904195054081
Specialist Qualifications:	MSc Aquatic Health
Professional affiliation/registration:	SACNASP Pr Sci Nat 400213/11
Physical address:	777 Peridot Str, Jukskei Park
Postal address:	777 Peridot Str, Jukskei Park
Postal address	2188
Telephone	N/A
Cell phone	081 319 1225
E-mail	andrew@thebiodiversitycompany.com

SPECIALIST DECLARATION FORM – AUGUST 2023

2. DECLARATION BY THE SPECIALIST

I, Andrew Husted declare that –

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- 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 NEMA Act.



Signature of the Specialist

The Biodiversity Company

Name of Company:

11 Jun 2024

Date

SPECIALIST DECLARATION FORM – AUGUST 2023

3. UNDERTAKING UNDER OATH/ AFFIRMATION

I, Andrew Husted, swear under oath / affirm that all the information submitted or to be submitted for the purposes of this application is true and correct.



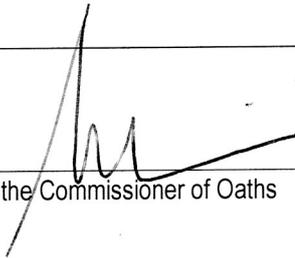
Signature of the Specialist

The Biodiversity Company

Name of Company

11/06/2024

Date

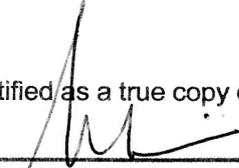


Signature of the Commissioner of Oaths

11 Jun 2024

Date

Certified as a true copy of original



Farai Shadreck Mbirimi BD52805
Minister of Religion / Commissioner of Oaths
391 11th Road, Erand, Midrand 1685

Date 11 / 06 / 2024



herewith certifies that
Masilabela Klaas Seepamore
Registration Number: 113907
is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)
Agricultural Science (Candidate Natural Scientist)

Effective 27 January 2016

Expires 31 March 2025



A handwritten signature in black ink, appearing to read 'S. Neph', is written over a horizontal line.

Chairperson

A handwritten signature in black ink, appearing to read 'N. Seamus', is written over a horizontal line.

Chief Executive Officer



herewith certifies that

Andine Erasmus

Registration Number: 164894

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)

in the following field(s) of practice (Schedule 1 of the Act)

Ecological Science (Candidate Natural Scientist)

Effective **18 January 2024**

Expires **31 March 2025**



Chairperson

Chief Executive Officer



herewith certifies that

Andrew Husted

Registration Number: 400213/11

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following field(s) of practice (Schedule 1 of the Act)

Aquatic Science (Professional Natural Scientist)
Ecological Science (Professional Natural Scientist)
Environmental Science (Professional Natural Scientist)

Effective **13 July 2011**

Expires **31 March 2025**



Chairperson

Chief Executive Officer

