



Site Sensitivity Verification Report Aquatic Theme

Moedesgift Battery Energy Storage System

**Thabo Mofutsanyane District, Mantsopa
Municipality, Free State, South Africa**

Prepared by:

The Biodiversity Company

Cell: +27 81 319 1225

Fax: +27 86 527 1965

info@thebiodiversitycompany.com

www.thebiodiversitycompany.com



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|--------------------------------------|---|---|
| Project Title | Moedesgift Battery Energy Storage System | |
| Report Name | Site Sensitivity Verification Report | |
| Specialist Theme | Aquatic Theme | |
| Project Reference | SSVR - Moedesgift BESS | |
| Date | 26 July 2024 | |
| Fieldwork & Report Writer | Divan van Rooyen (SACNASP 151272) |  |
| Reviewer | Namitha Singh (SACNASP 157927) |  |
| 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 interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science.</p> | |

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1 Introduction

The Biodiversity Company was appointed by Green Gold Group (Pty) Ltd. to undertake a Site Sensitivity Verification (SSV) for the proposed Moedesgift Battery Energy Storage System (BESS; Figure 1-1). The project site is located less than 1 km South of Excelsior, in the Free State Province. The proposed project area is found within the Mantsopa Local Municipality and in Thabo Mofutsanyane District Municipality.

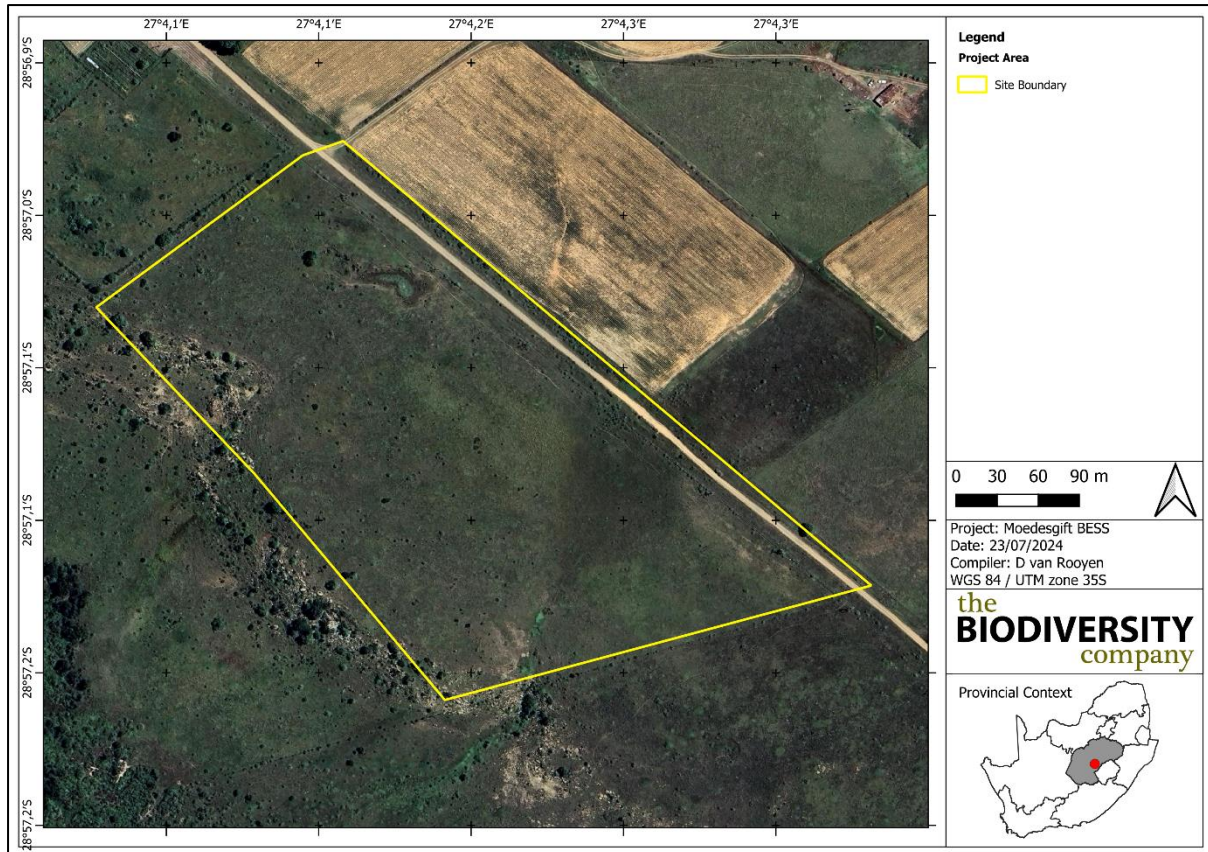


Figure 1-1 *Project components*

1.1 Legal Framework

This report is compiled in consideration of the exclusion Norm Gazetted on 27 March 2024 (no. 4557). The adoption of the Norm is for the exclusion of identified activities associated with the development and expansion of battery storage facilities in areas of low or medium environmental sensitivity from the requirement to obtain an Environmental Authorization (EA).

This Norm, entitled "Norm for the Exclusion of Identified Activities Associated with the Development and Expansion of Battery Storage Facilities in Areas of Low or Medium Environmental Sensitivity", has been prepared to provide rules under which activities associated with the development and expansion of battery storage facilities identified in terms of section 24(2)(a) and (b) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and contained in the Environmental Impact Assessment Regulations Listing Notice 1, 2 or 3 of 2014, promulgated under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), are excluded from the requirement to obtain an environmental authorisation prior to commencement, while meeting the objectives of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

The site sensitivity verification must be undertaken:

- For the footprint on which the proposed activities are proposed to take place and the corridor;
- 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 species being considered;
- Within the season which would be most relevant to identify the specific species or vegetation of interest; 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 project entails the development of a BESS facility with a 154 MW output on the Moedesgift Farm Portion 566, Winburg in the Free State Province.

1.3 Scope of Work

In accordance with the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(a) and (h) and 44 of the NEMA, 1998, when applying for environmental authorisation the current use of the land and the environmental sensitivity of the site under consideration as identified by the national web-based environmental screening tool, must be confirmed by undertaking a site sensitivity verification.

The outcome of this site sensitivity verification is to:

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

2 Approach

A field survey for the area was undertaken on the 22nd of July 2024 (winter), which is a dry-season survey, to determine the presence of surface aquatic features (wetlands) (Figure 2-1). 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 Environmental Impacts on Aquatic Biodiversity (Government Notice 320, dated 20 March 2020).

2.1 Assumptions and Limitations

- The seasonality of the survey is not considered to be a limiting factor with regard to identifying and delineating wetland features;
- The field assessment only focussed on the Project Site and does not include the larger regulated areas; and
- The GPS used for delineations is accurate to within five meters. Therefore, the delineation plotted digitally may be offset by at least five meters to either side.

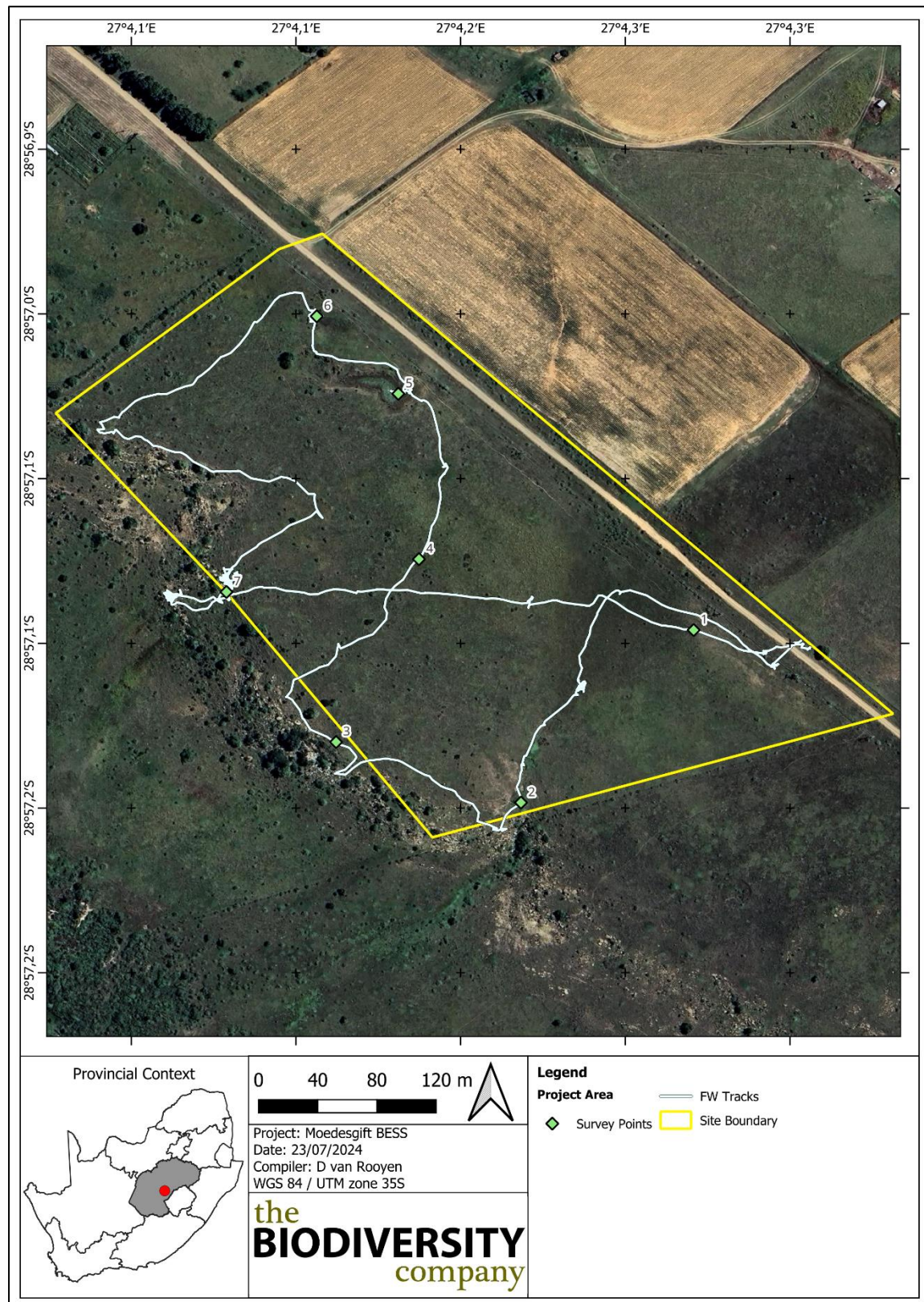


Figure 2-1 Field survey coverage and sample sites



3 Results & Discussion




3.1 Survey Sites




The following sections discuss the results from the field survey that was conducted for the proposed project. Each sample point is described in Table 3-1


One (1) Hydrogeomorphic (HGM) unit was identified within the Moedesgift BESS Footprint. This includes one depression wetland. In addition, one (1) artificial quarry was identified within the Moedesgift Footprint.

Table 3-1 ***Sensitivity summary of the survey points and watercourses delineated within the development footprint***

| Survey Point | Description | Photographs |
|---|------------------|--|
| Site GPS Reference: 1 Date: 22/07/2024 GPS Coordinates: 28°57'6.91"S 27° 4'17.09"E | Terrestrial |  |
| Site GPS Reference: 2 Date: 22/07/2024 GPS Coordinates: 28°57'10.68"S 27° 4'13.32"E | Drainage Feature |  |

| Survey Point | Description | Photographs |
|--|-------------|--|
| | |  |
| Site GPS Reference: 3 Date: 22/07/2024 GPS Coordinates: 28°57'9.36"S 27° 4'9.27"E | Terrestrial |  |
| Site GPS Reference: 4 Date: 22/07/2024 GPS Coordinates: 28°57'5.36"S 27° 4'11.09"E | Terrestrial |  |

| Survey Point | Description | Photographs |
|--|-------------------------------|--|
| Site GPS Reference: 5 Date: 22/07/2024 GPS Coordinates: 28°57'1.74"S 27° 4'10.63"E | Artificial Quarry |   |
| Site GPS Reference: 6 Date: 22/07/2024 GPS Coordinates: 28°57'0.05"S 27° 4'8.85"E | HGM 1 – Depression wetland |  |

| Survey Point | Description | Photographs |
|---|-------------|--|
| Site GPS Reference: 7 Date: 22/07/2024 GPS Coordinates: 28°57'6.08"S 27° 4'6.88"E | Terrestrial |  |

3.2 Survey Results

The proposed development footprint does traverse one identified HGM unit (Figure 3-1). This HGM unit has been identified as a depression wetland. Moreover, it was noted that this HGM unit has received some alterations from overgrazing from livestock. In addition, an artificial quarry was identified within the proposed Moedesgift BESS Footprint.

Historic imagery reveals some degree of excavations near the northwestern boundary of the Moedesgift BESS Footprint. The quarry has created favourable conditions for wetlands, creating a depression in the topography where water can accumulate and that has further promoted the growth of wetland vegetation. Furthermore, due to the topography and the accumulation of water, the soil also indicates wetland conditions in the form of mottling.

North of the artificial quarry, a slight change in topography shows a small area where water accumulates and has resulted in wetland conditions. Furthermore, historic imagery indicates the flow of water from outside of the site boundary towards this depression wetland (HGM 1) and also shows some connectivity to the artificial quarry.

A drainage feature was identified within the BESS Footprint and directs water from surface water from higher elevation towards lower areas such as the Lengana River. This feature is characterized by a distinct, sometimes sinuous path, which varies in size. Furthermore, these features are considered natural as they play a crucial role in maintain the hydrological balance of an ecosystem, preventing erosion, and reduce the risk of flooding.

The buffer requirements for the wetlands were calculated using the Site-Based Tool: Determination of buffer zone requirements for wetland ecosystems (Macfarlane *et al.*, 2014). The recommended buffer zones are presented in Figure 3-1. A 15 m buffer width was assigned to HGM 1 (depression wetland) and the drainage feature.

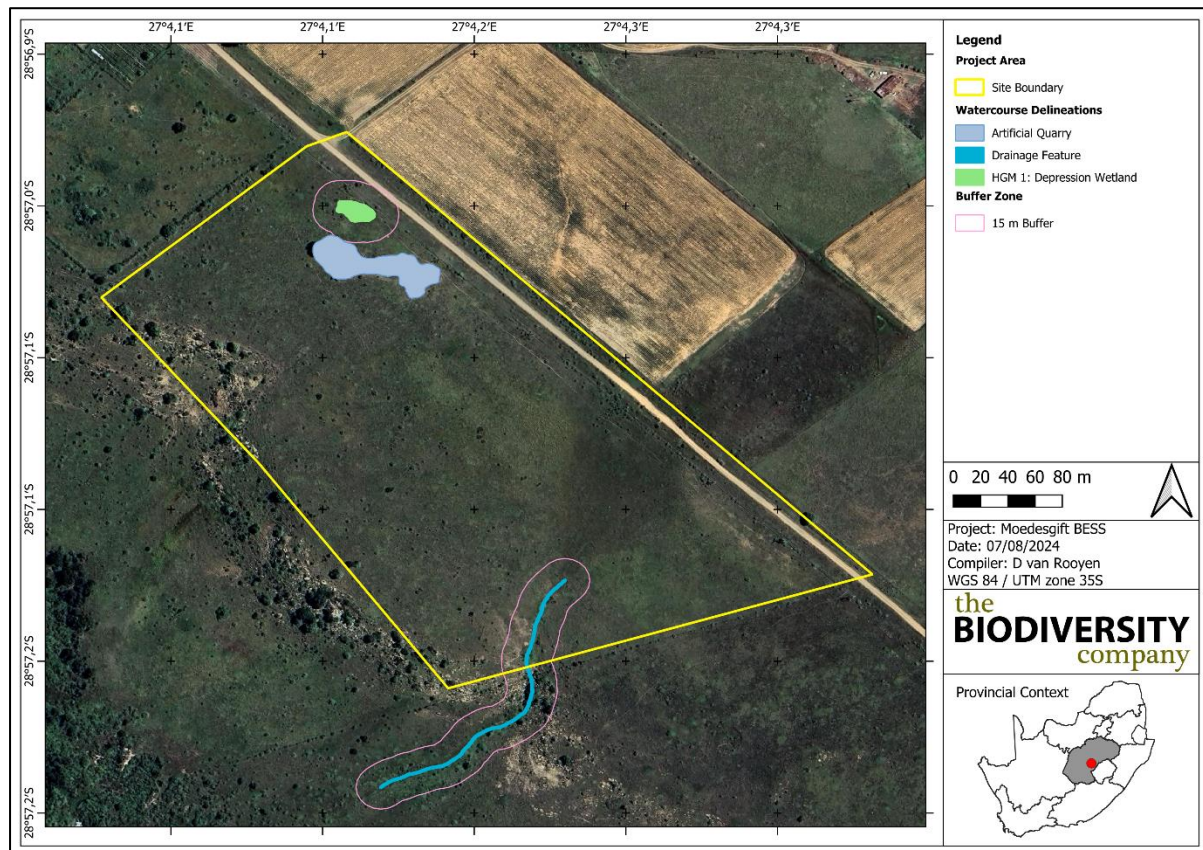


Figure 3-1 Identified wetlands in relation to the proposed development

3.2.1 Desktop Ecological Sensitivity

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):

- Aquatic Biodiversity Theme Sensitivity classified as “Low” for the entire Project Footprint (Figure 3-2). With areas outside of the Project Footprint being classified as “Very High” sensitivity due to the presence of the Lengana River.

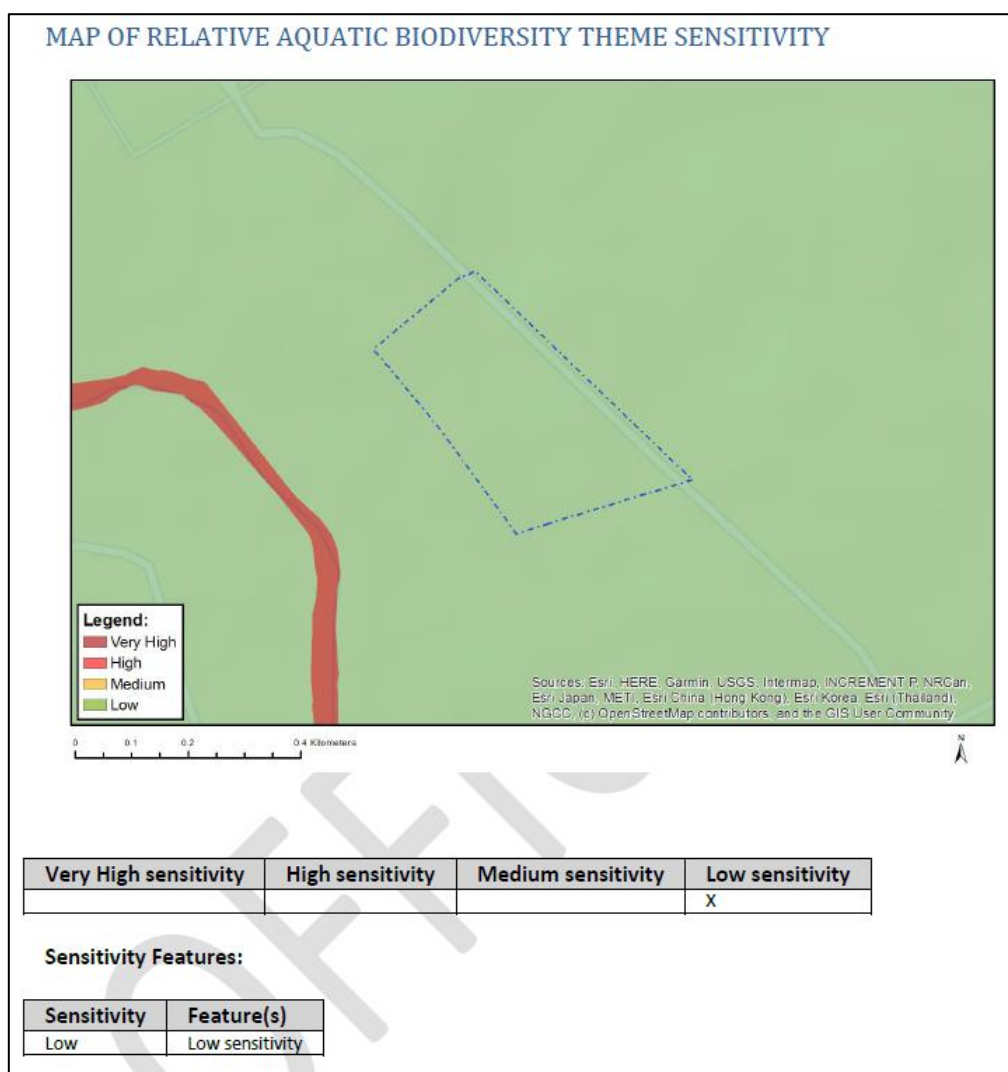


Figure 3-2 Aquatic Biodiversity Theme Sensitivity

3.2.2 Screening Tool Comparison

The allocated sensitivities for each of the relevant themes are either disputed or validated for the assessed areas in Table 3-2 below. A summative explanation for each result is provided as relevant. The specialist-assigned sensitivity ratings are based largely on the level of modification of the identified features and their expected resilience to impact. A sensitivity map is shown in Figure 3-3.

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

| Project Component | Feature | Screening Tool Theme | Screening Tool | Specialist Finding | Tool Validated or Disputed by Specialist - Reasoning |
|-----------------------|--------------------------|----------------------|----------------|--------------------|--|
| BESS Footprint | Remaining BESS Footprint | Aquatic Theme | Low | Low | Validated – No natural watercourse was identified within majority of the buildable footprint. |
| | Wetland (HGM 1) | Aquatic Theme | Low | Low | Validated – The depression wetland (HGM 1) was identified to overlap with the footprint. However, this wetland has been largely modified and provides no ecological function. Therefore, the significance rating for the wetland has been identified as Low sensitivity. |
| | Artificial Quarry | Aquatic Theme | Low | Low | Validated – Due to being artificially created, this area is regarded as degraded due to removal of vegetation and excavations. Furthermore, the artificial quarry provides no ecological function. |

| Project Component | Feature | Screening Tool Theme | Screening Tool | Specialist Finding | Tool Validated or Disputed by Specialist - Reasoning |
|-------------------|------------------|----------------------|----------------|--------------------|---|
| | Drainage Feature | Aquatic Theme | Low | Moderate | Disputed – The natural drainage feature was identified to overlap with the footprint. This feature plays a crucial role in maintaining the hydrological balance of the ecosystem, prevents erosion, and reduces the risk of flooding. Therefore, the significance rating for the wetland has been identified as Moderate sensitivity. |

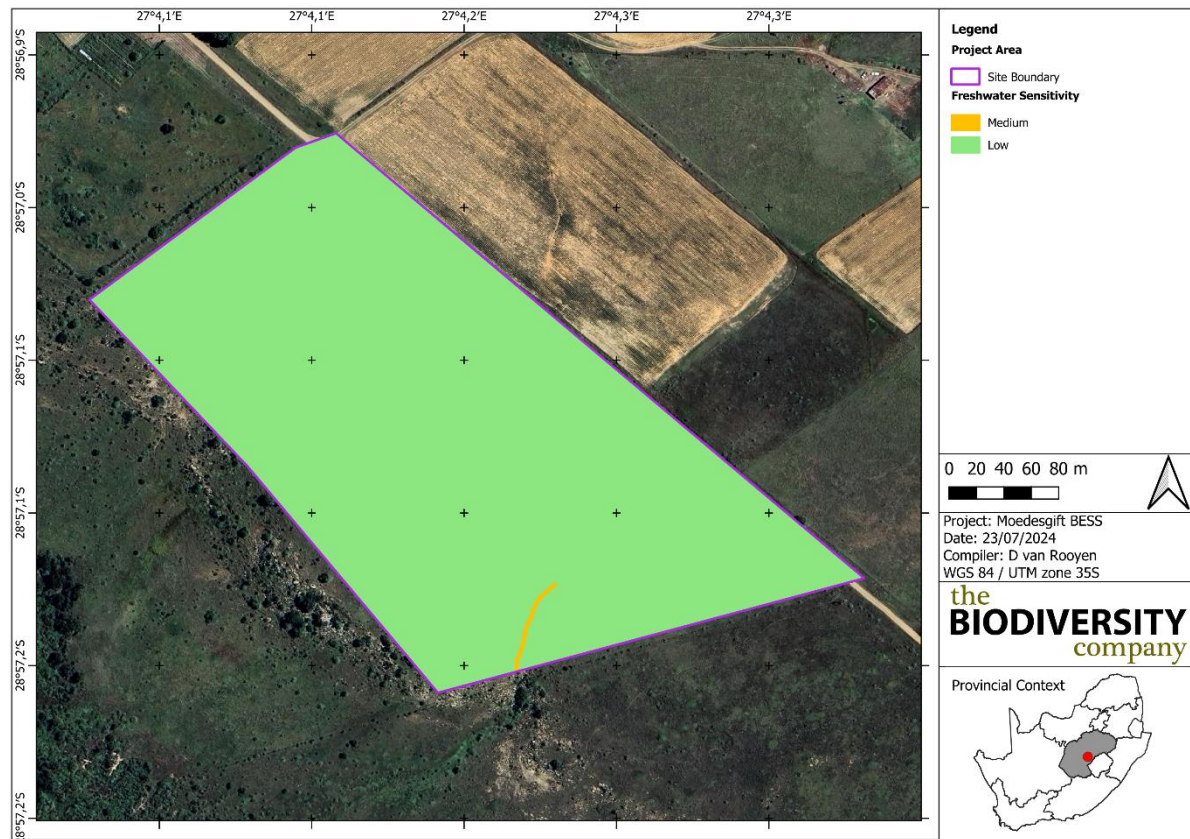


Figure 3-3 Sensitivity Map for the project area of interest

4 Conclusion

The DFFE Screening Tool indicates a “Low” sensitivity for the project site. However, the presence of a natural drainage feature led to classifying a small section within the DFFE-classified “Low” sensitivity area as having a “Moderate” sensitivity due to the ecological function of the drainage system and its connectivity to the downstream Lengana River. Additionally, although a wetland was identified within the footprint, the sensitivity of the wetland remains “Low” due to its lack of ecological function. Moreover, although having wetland characteristics, the artificial quarry is of “Low” sensitivity also due to its degraded status and lack of ecological function. Furthermore, a buffer width of 15 m was assigned to HGM 1 (wetland) and the drainage feature.

In this case, the layout of the development should be informed by the freshwater delineations, where areas of low sensitivity are favourable for the proposed development.

5 References

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

6 Appendix Items

6.1 Appendix A – Specialist Declaration of Independence

I, Divan van Rooyen, declare that:

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



Divan van Rooyen

Freshwater Ecologist

The Biodiversity Company

July 2024

I, Namitha Singh, declare that:

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



Namitha Singh

Ecologist

The Biodiversity Company

July 2024

6.2 Appendix B – Specialist CV

Divan van Rooyen

Ph.D. Environmental Science

Can Sci Nat (151272)

Cell: +27 83 265 8776

Email: divan@thebiodiversitycompany.com

Identity Number: 9312205072085

Date of birth: 20 December 1993



Profile Summary

Working experience throughout Southern Africa

Specialist experience with mining, WWTW's and construction.

Specialist expertise include wetlands resources, aquatic ecology and ecotoxicology.

Areas of Interest

Mining, Seismic Surveys, Renewable Energy, Bulk Services Infrastructure Development & WWTW's.

Key Experience

- Environmental Impact Assessments (EIA)
- Environmental Management Programmes (EMP)
- Wetland delineations and ecological assessments
- Rehabilitation Plans and Monitoring
- Aquatic biomonitoring

Country Experience

South Africa

Nationality

South African

Languages

English – Proficient

Afrikaans – Proficient

Qualifications

- PhD (North-West University of Potchefstroom) – Environmental Science with Aquatic Ecosystem Health
- MSc (North-West University of Potchefstroom) – Environmental Science (Ecological Remediation and Sustainable Management)
- BSc Honours (North-West University of Potchefstroom) – Environmental Science with Ecological Remediation and Sustainable Management
- BSc Environmental sciences
- Can Sci Nat (151272)

Namitha Singh

BSc. (Hons) Environmental Science
(Cum Laude) (Pr Sci Nat)

Cell: +27 63 684 1752

Email: namitha@thebiodiversitycompany.com

Identity Number: 9509260335089

Date of birth: 26 September 1995



Profile Summary

Working experience in 7 provinces of South Africa.

Specialist experience within construction and development (residential/commercial/mixed-use/solar), wastewater infrastructure and agriculture.

Specialist expertise includes wetland resource management and rehabilitation, estuary and coastal management and, hydropedology.

Areas of Interest

Water Resource Management, Mining, Renewable Energy, Infrastructure Development, Agriculture, Land contamination, Sustainability and Conservation.

Key Experience

- Wetland Delineation and Functional Assessments
- Hydropedology Assessments
- Wetland Rehabilitation
- Coastal and Estuarine Assessments

Country Experience

South Africa

Nationality

South African

Languages

English – Proficient

Afrikaans – Basic

Qualifications

- BSc. Honours – Environmental Science (Cum Laude)
- BSc. Environmental Science and Life Science