# Appendix H  Agricultural Theme SSVR

## Environmental and Social Impact Assessment for Field Development in Block 11B/12B and associated production activities, South Africa

**Draft Scoping Report**

SLR Project No.: 700.000130.00001

14 September 2026

# Site Sensitivity Verification Report

## Agricultural Theme

## Field Development in Block 11B/12B and associated production activities

## Field Development in Block 11B/12B and associated production activities Mossel Bay Local Municipality, Garden Route District Municipality, Western Cape Province, South Africa

02 September 2026


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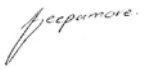
| | |
|---|---|
| **Project Title** | **Field Development in Block 11B/12B and associated production activities** |
| **Report Name** | Site Sensitivity Verification Report |
| **Specialist Theme** | Agricultural Theme |
| **Project Reference** | Onshore Gas Pipeline |
| **Date** | 2 September 2026 |
| **Report Writer** | Masilabela Seepamore (SACNASP 113907)  |
| **Reviewer** | Matthew Mamera (SACNASP 116356)  |
| **Declaration** | The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, Amended. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principals of science. |

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# 1 Introduction

Main Street 1549 (Pty) Ltd (Main Street)[1], together with its Joint Venture (JV) partners at the time[2], conducted exploration activities in Block 11B/12B, located ~75 km off the South Coast of South Africa, roughly between Mossel Bay and Cape St Francis (see Figure 1-1). These activities, undertaken under their Exploration Right (Ref. No. 12/3/067), included seismic surveys and exploration well drilling, which led to the discovery of gas and associated condensates in the Brulpadda 1AX (2019) and Luiperd 1X (2020) wells.

Following the discovery of gas-condensate within the Paddavissie Fairway, the JV partners evaluated several development scenarios, considering both current and potential future domestic gas market demand. In September 2022, the JV partners submitted an application for a Production Right (PR 12/4/013) (PR).

Under TEEPSA leadership, the JV also applied for an Environmental Authorisation (EA) and commissioned an Environmental and Social Impact Assessment (ESIA) for an early field development scenario, accompanied by a public participation process in 2022 and 2023. However, in 2024, TEEPSA resigned as operator of Block 11B/12B, and together with QatarEnergy and CNRI, withdrew from the project. Main Street, elected to continue with the Project and assumed operatorship.

As the new operator, Main Street planned to advance the Project through a downscaled, largely non-intrusive survey campaign to assess the metocean, benthic, geotechnical and geophysical conditions in the area, thereby informing potential future development scenarios. An EA application for this survey campaign was subsequently submitted, and the associated ESIA process commenced in February 2025.

As a result of the progressive evaluation and advancement of technical development work, and in accordance with the principles of integrated environmental management under National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA), Main Street has expanded the ESIA to encompass the entire field development of the Paddavissie Fairway. This approach ensures comprehensive assessment of all reasonably foreseeable environmental and socio-economic impacts. This expansion in scope has led to the submission of the current EA application and associated ESIA process.

Main Street appointed SLR Consulting (South Africa) (Pty) Ltd (SLR) to undertake the ESIA process. The Biodiversity Company has in turn been appointed been appointed to undertake the Site Sensitivity Verification (SSV) for the proposed onshore gas pipeline alternatives which forms part of the overall ESIA for “Field Development in Block 11B/12B and associated production activities”.

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”.

This report aims to present and discuss the findings from the soil and agricultural resources identified within the 100 m corridor area. The report also identifies the soil suitability and land potential of these soils; the land uses within the assessment area and the risks associated with the proposed Onshore Gas Pipeline from an agricultural and soil resources management perspective.

This report, after considering the findings and recommendations provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities

[1] Main Street is owned by Africa Energy SA Corp (Africa Energy) and Arostyle Investments (RF) Limited.
[2] Main Street’s JV partners in the Exploration right were Canadian Natural Resources International (South Africa) Limited (CNRI), QatarEnergy International E&P LLC (previously Qatar Petroleum International Upstream LLC) and TOTAL Energies EP South Africa (now TotalEnergies EP South Africa S.A.S.) (TEEPSA).

at a scoping level, enabling informed decision making, as to the soil and agricultural resources of the proposed project.

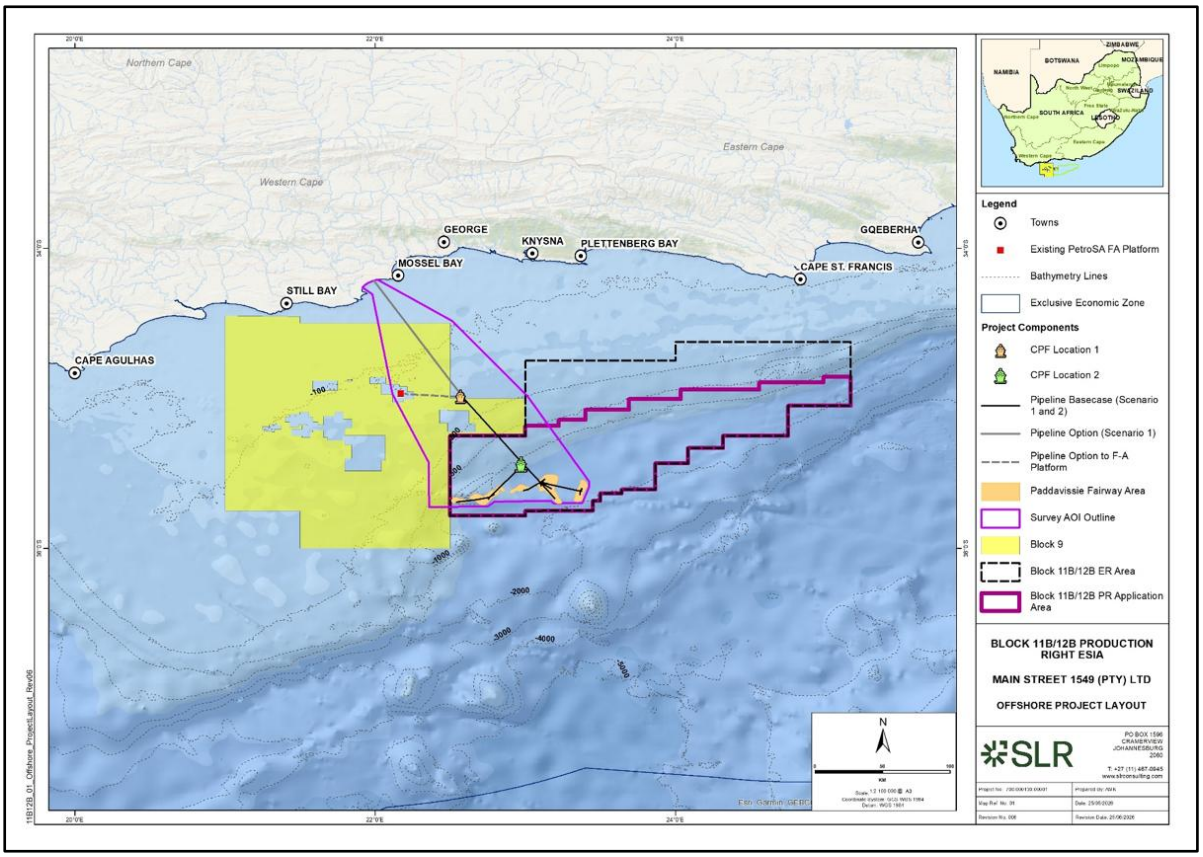



***Figure 1-1*** ***Locality map of Block 11B/12B, showing the offshore survey area, Paddavissie Fairway and Development Scenarios, off the South African South Coast*** **(SLR, 2026)**

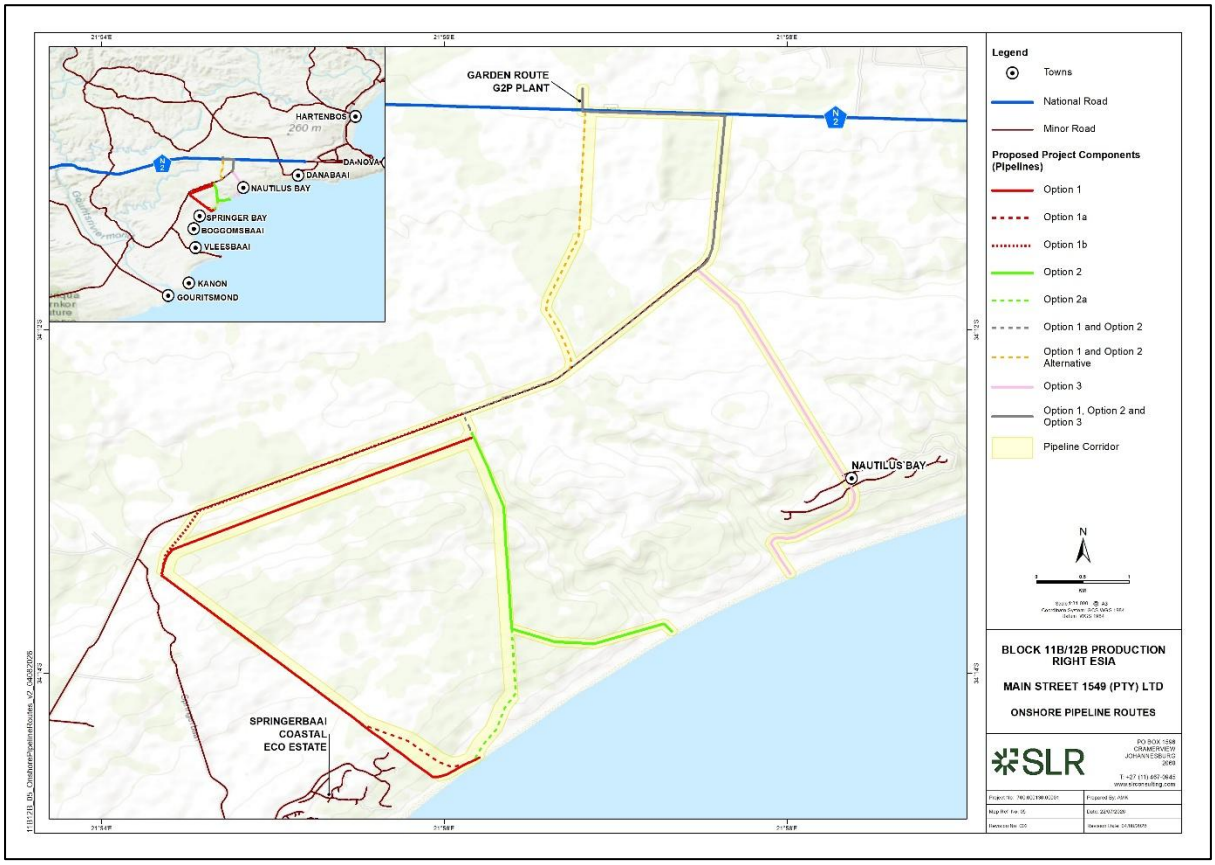



***Figure 1-2 Map illustrating the proposed pipelines as received from SLR Consulting (July 2026)***

## 1.1 Project Area

Three (3) pipeline alternatives (with sub alternatives) were provided, with an associated 100 m corridor for each alternative. These are collectively referred to as the Project Area for reporting purposes and were assessed during the site survey (Figure 1-3). The project site is located within and around the Mossel Bay city, which falls within the jurisdiction of the Mossel Bay Local Municipality and the Garden Route District Municipality in the Western Cape Province (Figure 1-2). Figure 1-2 illustrates the proposed pipelines as received from SLR Consulting (South Africa) (Pty) Ltd. The proposed pipeline alternatives and associated 100 m corridors as provided are collectively referred to as the Project Area for reporting purposes (Figure 1-3).

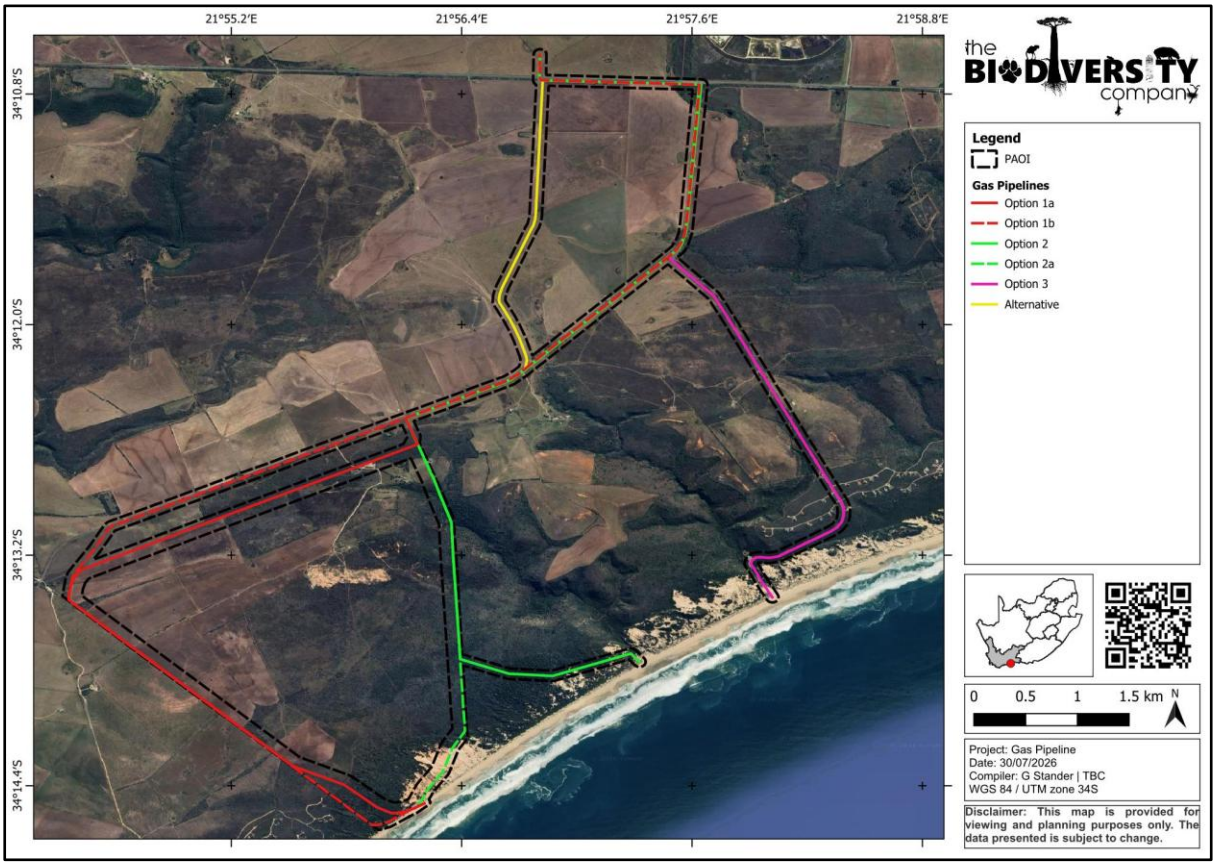



***Figure 1-3 Map illustrating the proposed components of the project***

## 1.2 Project Description

### 1.2.1 Development Scenarios

Main Street has elected to assess two optional full-field development scenarios for the Paddavissie Fairway. These scenarios represent conservative, maximum footprint cases that are reasonably foreseeable, ensuring that the environmental assessment captures the upper bound of potential impacts. The final development concept will ultimately be shaped several factors, including the evolution of the future regional gas market. By assessing the maximum reasonable development envelope, the resulting EA would accommodate a range of potential development configurations. Any development scenario with a smaller environmental footprint than that assessed would, by implication, fall within the authorised impact envelope.

The two development scenarios are outlined below and illustrated schematically in Figure 1-4 and Figure 1-5.

- **Production Scenario 1: Full field development of the Paddavissie Fairway and piping gas onshore (Figure 1-4 and Figure 1-2):**
    - Mooring a Floating Production, Storage and Offloading (FPSO) facility at one of two alternative locations: (1) in deep water near the wells or (2) in shallower water on the continental shelf. The FPSO will separate and process the produced liquid/gas from the wells.
    - Installing up to two ~80 km multiphase pipelines (including MEG pipeline and umbilical) from the wells to the FPSO, a ~100 km gas pipeline from the FPSO

to the shore[3], and an up to ~13 km onshore pipeline to the proposed gas receiving facility associated with the reference development case (currently a a proposed GtP facility, subject to separate EA application). This pipeline infrastructure will convey the produced well fluids from the wells to the FPSO for separation / processing and then transport the dry gas onshore for supply to the reference development case and/or other potential gas off-take opportunities that may be identified during the gas marketing phase (i.e. to the end user).

- Transferring separated condensate from the FPSO to Dynamically Positioned Shuttle Tankers (DPST), which will then transport the condensate to its final destination. Treated produced water will be discharged overboard from the FPSO.

- **Production Scenario 2: Full field development of the Paddavissie Fairway and liquefying gas offshore (**Figure 1-2**):**
  - Mooring a Floating Liquefied National Gas (FLNG) facility at one of two alternative locations: (1) in deep water near the wells or (2) in shallower water on the continental shelf. The FLNG will separate the produced liquid and gas streams from the well fluids, and will undertake liquefaction of the produced gas. A Floating Storage and Offloading (FSO) vessel is anticipated to be required to provide additional storage for the condensate which will be received from the FLNG facility. The FSO provides a condensate offloading point separate to the LNG offloading point which increases operational flexibility.
  - Installing a ~80 km multiphase pipeline (including MEG pipeline and umbilical) from the wells to the FLNG, which will convey the produced well fluids to the FSO.
  - Transferring separated condensate from the FSO to DPST and LNG from the FLNG to DPST (LNG carrier), which will then transport the products to their final destinations. Treated produced water will be discharged overboard from the FLNG.

Each of these two full-field options may be preceded by partial development of the field through existing PetroSA facilities, with continued partial export of products via these facilities during and after full development of the Paddavissie Fairway. In the event that the use of the PetroSA facilities precedes the full-field development, the ~80 km multiphase pipeline from the wells will be extended by ~40 km to the PetroSA offshore facility, whilst continued use of the PetroSA facilities during and post full-field development is envisaged by exporting a portion of the gas via a ~40 km dry gas pipeline from the FPSO or FLNG vessel to the PetroSA facility and/or delivering processed condensate to PetroSA's receiving terminal in Mossel Bay.

[3] The alignment of the offshore gas pipeline will only be finalised after the offshore surveys have been completed. The base case routing is ~100 km in length from the FPSO to the shore.

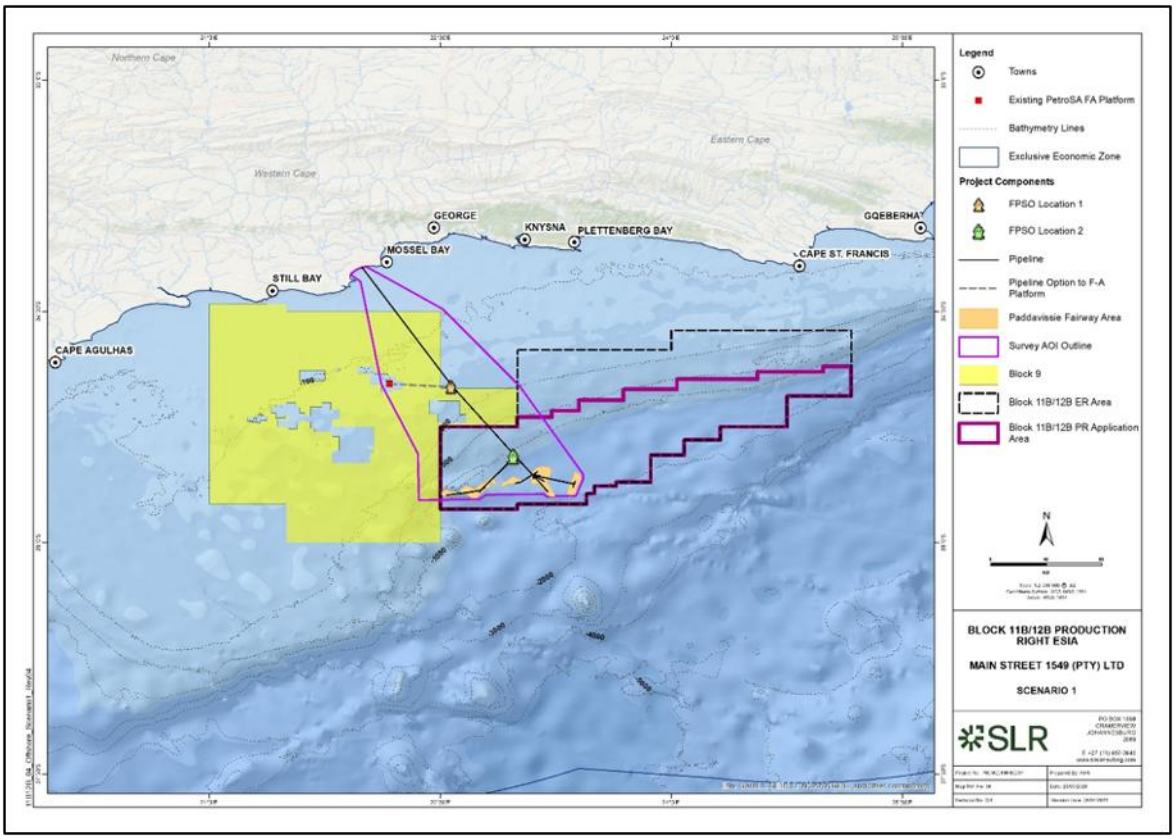



***Figure 1-4 Production Scenario 1: Full field development of the Padavissie Fairway and piping gas onshore***

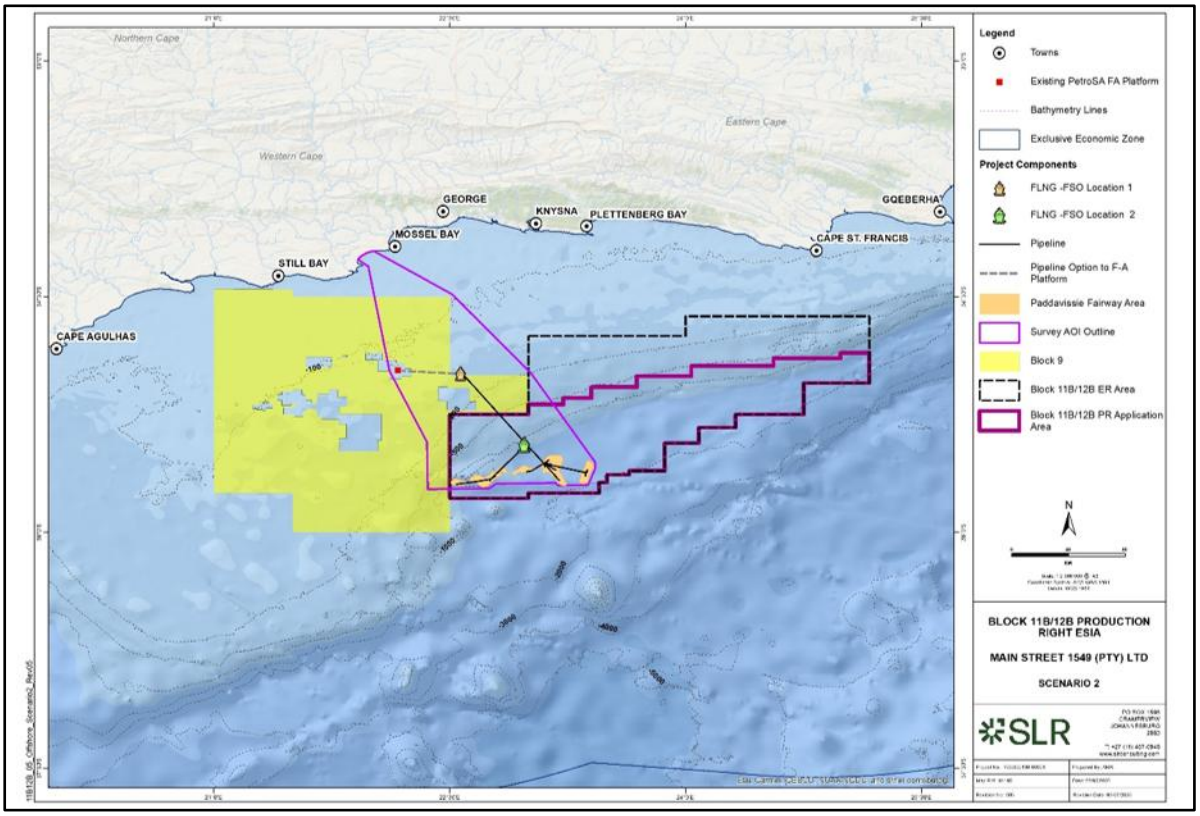



***Figure 1-5 Production Scenario 2: Full field development of the Padavissie Fairway and liquefying gas offshore***

### 1.2.2 Project Phases and Activities

Key project phases and activities with the proposed development, installation and operation are summarised below. Key onshore Project activities relevant to this assessment are highlighted in red below.

- **Route and Site Assessment Surveys (over ~16 months):**
    - Offshore: A largely non-intrusive survey campaign (including bathymetry, sonar and metocean data collection, but also seafloor sampling) will be undertaken of the production sites in Block 11B/12B and along pipeline routes from the Block onto the continental shelf and to shore, as well as into adjacent Block 9.
    - Onshore: The onshore survey along the pipeline route will also be largely non-intrusive, including topographical, ground penetrating radar, magnetometer, electromagnetic, multi-channel analysis of surface waves, and electrical resistance tomography. The survey will also include some trial pits, coring and cone penetration tests.
- **Construction (drilling and installation) activities (over ~11 years[4]):**
    - Drilling of up to 19 wells in the Paddavissie Fairway (including production, appraisal and possibly gas injection wells). Before completion, some wells may be tested to refine the knowledge of the reservoir characteristics.
    - Installation and commissioning of subsea infrastructure, which includes all infrastructure located on or below the seabed used to extract hydrocarbons from the reservoir and connect the wells to the Central Processing Facility (CPF), including wellheads, Xmas trees, flow line tie-ins and end-points, and Subsea Umbilicals, Risers and Flowlines (SURF).
    - Mobilisation, mooring and commissioning of the CPF (either a FPSO or FSO/FLNG depending on the development scenario).
    - Installation and commissioning of gas pipeline from FPSO to shore, with a buried portion from the shore crossing to proposed gas receiving facility (e.g. GtP facility) (Scenario 1), or F-A Platform (Scenario 1 & 2). The pipeline section traversing the coastal zone will be installed using horizontal directional drilling (HDD).
    - Onshore, marine and aviation support operations using available facilities.
- **Production (operation) activities (~25 years) [5]:**
    - Offshore production operations, including the activities of the shuttle tankers, which may be used to offload the processed gas and/or condensate from the CPF; and
    - Onshore, marine and aviation support operations using available facilities.
- **Decommissioning activities (~0.5 year):**
    - Plugging and abandonment of development wells following standard procedures.
    - Flushing and disconnection of pipelines and umbilicals.
    - Retrieval of selected subsea infrastructure, such as production risers and umbilicals. pipelines, structures and wellheads will be left in-situ on the seafloor.

[4] Construction activities to take place intermittently over an 11-year period, as indicated in Table 1-1

[5] Production could extend up to 20 to 30 years.

- Removal and relocation of CPF.
- Onshore, marine and aviation support operations using available facilities.

### 1.2.3 Project Timeline

An indicative duration of key activities and timeline highlighting key milestones of the Project are summarised in Table 1-1. Where relevant, activity durations also incorporate expected operational weather or other routine interruptions, to provide a realistic schedule basis.

***Table 1-1 Indicative Durations of Key Activities***

| Activity | Duration |
|---|---|
| **Route and Site Surveys (~16 months)** | |
| • **Offshore and onshore geophysical and geotechnical surveys** | Up to 480 days in total (including mobilisation and standby time). Some surveys will take place concurrently. |
| **Well Drilling (over ~11 years)** | |
| • **Offshore well drilling (up to 19 wells): production, appraisal and potentially gas injection wells** | Up to 210 days (~7 months) per three well campaign (including mobilisation), and up to seven campaigns over a period of ~11 years. |
| **Offshore Installation & Construction (over ~11 years)** | |
| • **Xmas Tree installation (Scenario 1 & 2)** | 15 – 24 days per three well campaign thereafter |
| • **Pipeline (20" ND) from CPF location to Luiperd manifold location (Scenario 1 & 2)** | Up to 110 days total for installation and commissioning activities |
| • **Mooring lines, manifolds, Subsea Umbilical Distribution Unit (SUDUs) and Subsea Umbilical Risers and Flowlines (SURF) Installation (Scenario 1 & 2)** | Up to 180 days |
| • **Main umbilical installation (Scenario 1 & 2)** | Up to 30 days |
| • **FPSO Installation (Scenario 1)** | Up to 20 days |
| • **FLNG / FSO Installation (Scenario 2 only)** | Up to 80 days: |
| • **Offshore export pipeline (24" ND) from shore to FPSO (Scenario 1 only)** | Total duration of up to 120 days:<br>Up to 90 days for pipelay.<br>Up to 30 days for trenching. |
| • **Installation of F-A pipeline (Scenario 1 & 2)** | Up to 20 days |
| • **Pipeline (20" ND) from CPF location to subsea Inline Tee (ILT) (Scenario 1 & 2)** | Up to 90 days to install a second pipeline from CPF location to ILT, prior to tie-back of Brulpadda, Blaasop, Woudboom and Plantanna |
| • **Brulpadda, Blaasop, Woudboom, Platanna Tie-Backs (Scenario 1 & 2)** | Up to 180 days per campaign (including well drilling). |
| **Onshore Installation & Construction (Scenario 1 only)** | |
| • **Onshore pipeline (24" ND)** | Up to 200 days |
| • **Shore crossing** | Up to 180 days |
| **Production** | |
| • **Operation of gas field and infrastructure** | Up to 20 to 30 years |
| **Decommissioning** | |
| • **Decommissioning** | Up to 180 days |

## 1.3 Legal Framework

This assessment was conducted in accordance with the amendments to the EIA Regulations. 2014 (GNR 326, 7 April 2017) of the NEMA, DFFE Agricultural Screening tool (2025). The approach has taken cognisance of the published 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).

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 classified with 'Low to Very High' agricultural theme sensitivity (dated 11/08/2025).

The SSV 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 SSV 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.

### 1.4 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 EA 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 SSV.

The outcome of this SSV is to:

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

## 2 Approach

The field survey was conducted from the 27th to the 29th of July 2026. Seasonality has no bearing on the soil assessment and fieldwork is therefore deemed sufficient to adequately characterise the soil resources within the study area for the purposes of the ESIA. Curriculum Vitae's and specialist declarations are provided as Appendix A and Appendix B, respectively. This verification report has been prepared in accordance with the Specialist Assessment and Minimum Report Content Requirements for an Agricultural Impact Assessment (Government Notice 320, dated 20 March 2020).

### 2.1 Assumptions and Limitations

The following is applicable:

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

# 3 Results & Discussion

## 3.1 Description of Soil Forms and Soil Families

The site was traversed on foot. A soil auger was used to determine the soil form 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 and classified as per the “Soil Classification: A Taxonomic System for South Africa” During the site assessment various soil forms were identified (see table below). These soil forms are described in Table 3-1according 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, and field work tracks are illustrated in figures below.

Twelve (12) representatives soil forms were identified within the proposed project area including the Mispah, Carolina, Clovelly, Glenrosa, Katspruit, Fanwood, Stream Beds, Namib, Valsrivier, Iswepe, Grabouw and Johannesburg soil forms, with the Mispah being the most dominant soil form (Figure 3-1).

***Table 3-1 Summary of soils identified within the project area***

| Soil Forms | Diagnostic Horizon | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Topsoil | | | | | Subsoil B1 | | | | Subsoil B2 | | | |
| | Depth (mm) | Clay (%) | Signs of Wetness | Rock (%) | Surface crusting | Depth (mm) | Clay (%) | Signs of Wetness | Rock (%) | Depth (mm) | Clay (%) | Signs of Wetness | Rock (%) |
| **Carolina (15)** | 0-200 | 0-15 | None | 0 | None | 200-600 | 0-15 | None | 0 | +600 | - | - | 50 |
| **Ermelo (15)** | 0-300 | 0-5 | None | 0 | None | 300-1200 | 0-15 | None | 0 | - | - | - | - |
| **Mispah (15)** | 0-300 | 0-15 | None | 0 | None | +300 | - | - | 50 | - | - | - | - |
| **Glenrosa (15)** | 0-300 | 0-15 | None | 0 | None | 300-500 | 0-15 | None | 30 | - | - | - | - |
| **Katspruit (15)** | 0-300 | 0-15 | None | 0 | None | 300-500 | +35 | Mottles | 0 | - | - | - | - |
| **Namib (15)** | 0-100 | 0-15 | None | 0 | None | 300-1200 | 0-15 | None | 0 | - | - | - | - |
| **Clovelly (15)** | 0-300 | 0-15 | None | 0 | None | 200-600 | 0-15 | None | 0 | 600-1000 | 0-15 | None | 40 |
| **Kroonstad (15)** | 0-200 | 0-15 | None | 0 | None | 200-500 | 0-15 | Bleached | 0 | 500-1200 | 0-25 | Mottling | 0 |
| **Sepane (15)** | 0-300 | 0-15 | None | 0 | None | 300-400 | 25 | None | 0 | 400-800 | 0-15 | Mottling | 30 |
| **Swartland (15)** | 0-300 | 0-15 | None | 0 | None | 300-600 | 25 | None | 0 | 600-1000 | 0-15 | None | 30 |
| **Grabouw (15)** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **Johannesburg (15)** | - | - | - | - | - | - | - | - | - | - | - | - | - |

***Table 3-2 Description of soil family characteristics***

| Soil Form/Family | Topsoil Colour | Base Status | Textural Contrast |
|---|---|---|---|
| **Carolina** | Chromic Topsoil | Mesotrophic | Luvic |
| **Ermelo** | Chromic Topsoil | Mesotrophic | Luvic |
| **Mispah** | Grey Topsoil | Dystrophic | Aluvic |
| **Glenrosa** | Grey Topsoil | Dystrophic | Aluvic |
| **Katspruit** | Chromic Topsoil | Eutrophic | Luvic |
| **Namib** | Grey Topsoil | Dystrophic | Aluvic |
| **Clovelly** | Chromic Topsoil | Mesotrophic | Luvic |
| **Kroonstad** | Dark Topsoil | Dystrophic | Aluvic |
| **Sepane** | Chromic Topsoil | Mesotrophic | Luvic |
| **Swartland** | Chromic Topsoil | Mesotrophic | Luvic |
| **Grabouw** | - | - | - |
| **Johannesburg 2000** | - | - | - |

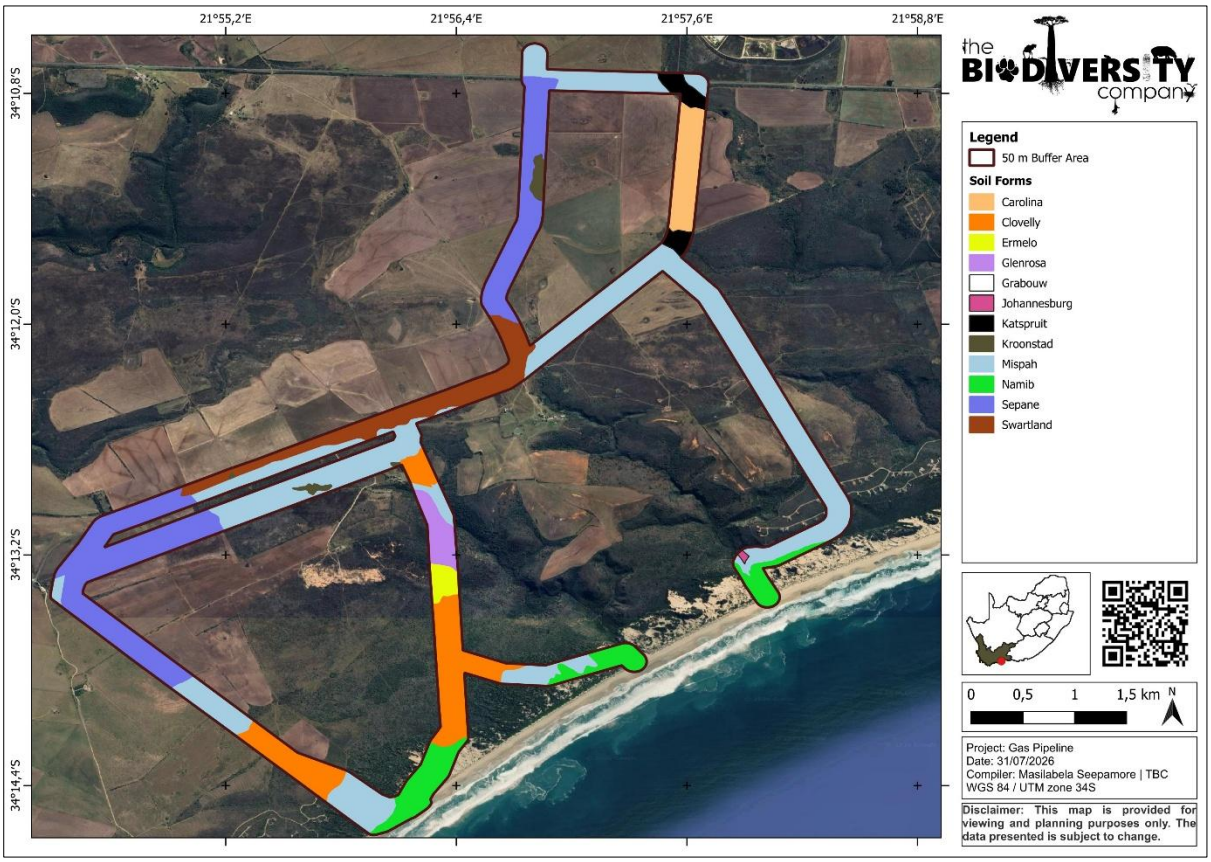



***Figure 3-1 Dominant soil forms distribution identified in the project area during the site assessment***

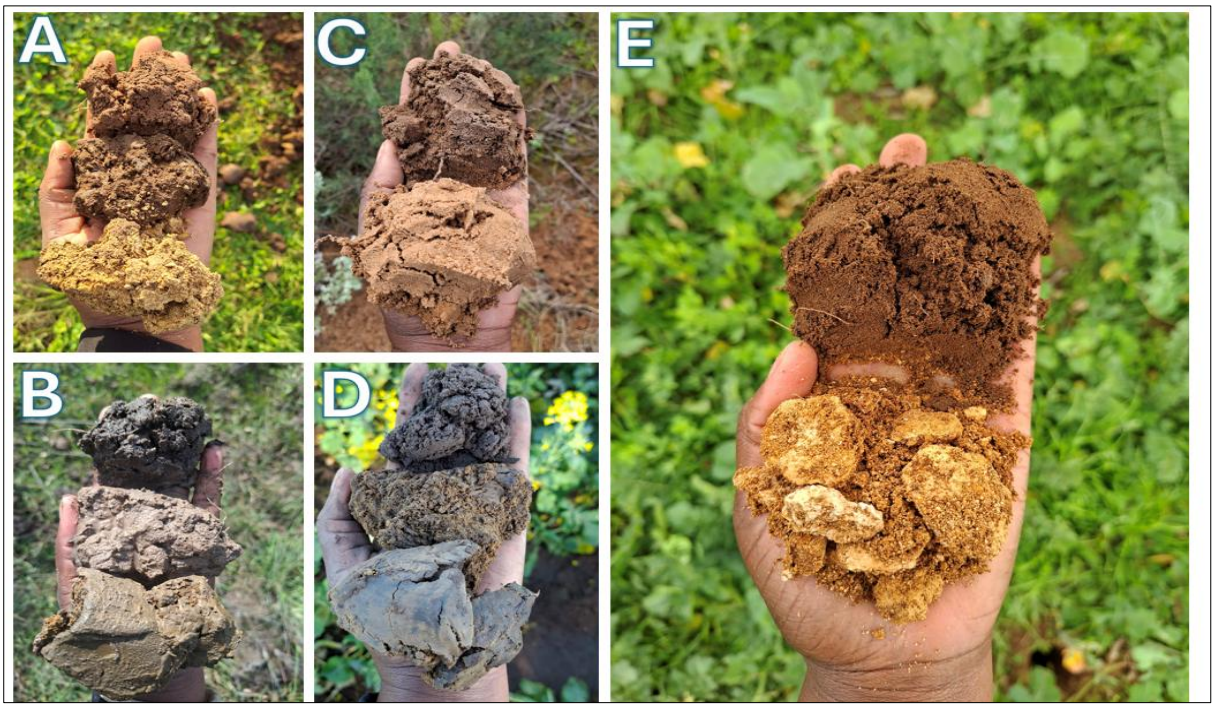



***Figure 3-2*** ***Soil forms and diagnostic horizons identified on site: A) Swartland soil form; B) Kroonstad soil form; C) Orthic/yellow brown apedal found in Ermelo, Clovelly and Carolina soil forms; D) Sepane soil form; and E) Glenrosa soil form.***

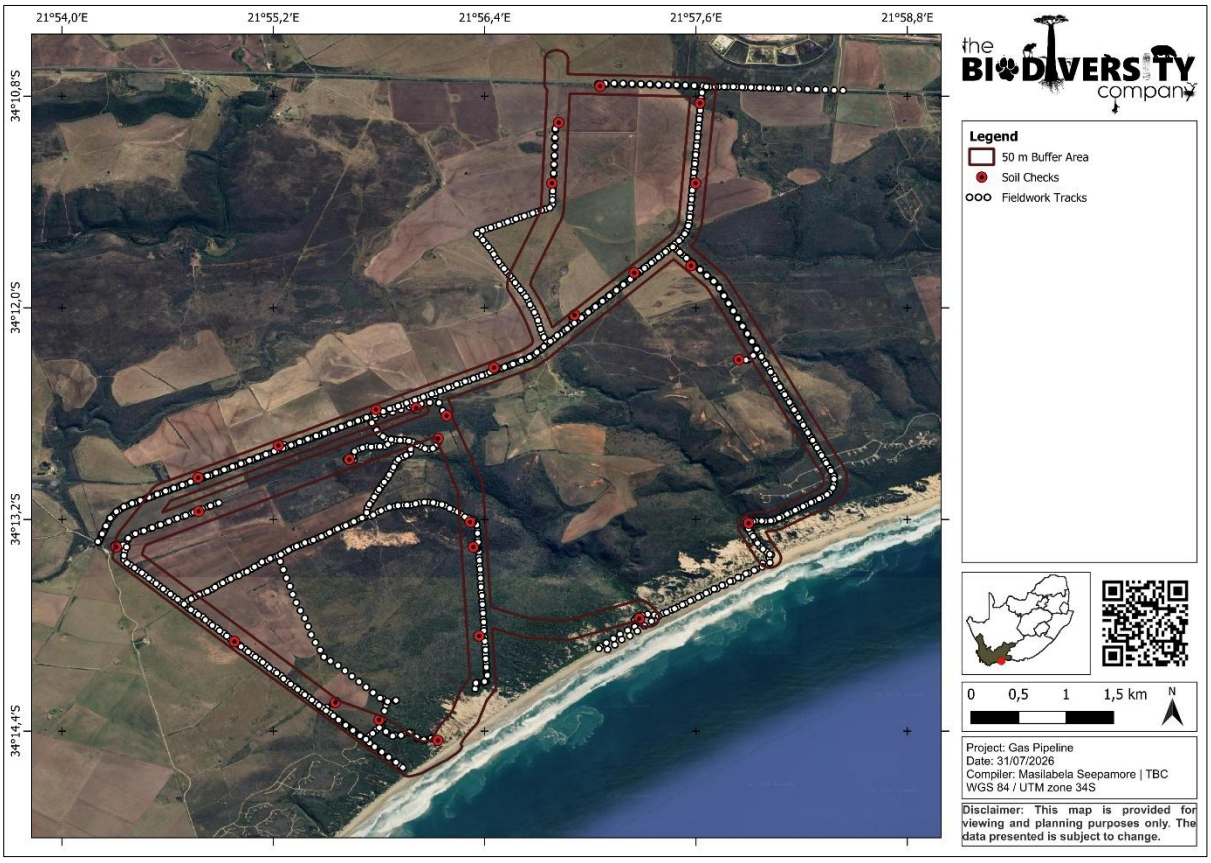



***Figure 3-3*** ***Map illustrating the field work tracks for the proposed project area***

### 3.2 Agricultural Potential

Agricultural potential is determined by a combination of soil, terrain, climate features and the current land use. 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 C1 and C6. Given the fact that the climatic capability has been determined to be “C8” for the project area, no further steps will be taken to refine the climate capability. The climatic capability of C8 is based on the vegetation types (Albertinia Sand Fynbos, Cape Seashore Vegetation, Mossel Bay Shale Renosterveld, Swellendam Silcrete Fynbos, North Langeberg Sandstone and Hartenbos Dune Thicket), MAP of 432, 581, 597 and 425 mm, with MAPE of 1798, 1802, 1818 and 1895 mm, with a pan Class of 0.24, 0.33 and 0.22, respectively.

## 3.4 Land Capability

The land capability was determined by using the guidelines described in "The farming handbook" (Smith, 2006). Accordingly, the identified soil forms associated with the project area are restricted to land capability "I", "II" "III", "V", "VI" and "VIII" classes. Land capability class "I" was assigned crop fields under rainfed rain-fed crop fields.

***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 |
|---|---|---|---|---|---|
| I | No or few limitations. Very high arable potential. Very low erosion hazard. | Good agronomic practice. | Annual cropping. | Arable | High |
| III | Slight limitations. High arable potential. Low erosion hazard/ | Adequate run-off control | Annual cropping with special tillage or ley (25%) | Arable | High |
| III | Moderate limitations with some erosion hazard. | Special conservation practice and tillage methods | Rotation of crops and ley (50%) | Arable | Medium |
| V | Water course and land with wetness limitations. | Protection and control of water table. | Improved pastures, suitable for wildlife. | Arable | Medium |
| VI | Limitations preclude cultivation and suitable for perennial vegetation. | Protection measures for establishment, e.g. sod-seeding | Veld, Pasture and afforestation | Non-Able | 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 six land capability classes, the land potential levels have been determined by means of the Guy and Smith (1998) methodology. Land capability class "I" has been reduced to land potential 4, Land Potential class "II" has been reduced to land potential level 5, Land capability class "III" has been reduced to land potential level 6, Land capability "V" has been reduced to Vlei, Land capability class "VI" has been reduced to land capability level L7, and Land Capability class "VIII" has been reduced to land capability 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 |
|---|---|---|
| **4** | **Moderate potential.** Moderately regular and/ or severe to moderate limitations due to soil, slope, temperature or rainfall. Arable. | High |
| **5** | **Restricted potential.** Regular/and or moderate to severe limitations due to soil, slope, temperatures or rainfall. Arable | Medium |
| **6** | **Very restricted potential**. Regular and/or severe limitations due to soil, slope and temperature or rainfall. Non-arable | Medium/Low |
| **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 and temperature or rainfall. Non-arable. | Low |
| **Disturbed** | Physically disturbed areas confirmed. Construction site. | Low |

The following land potential level have been determined;

- Land potential level 4 (this land potential is characterised by moderate potential. Moderately regular and/ or severe to moderate limitations due to soil, slope, temperatures or rainfall). Arable;
- 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 is characterised by low potential. Severe limitations due to soil, slope, temperatures or rainfall). Non-arable;
- Land potential level 8 (land potential level is characterized by a very low potential with a severe limitation due to soil, slope, temperatures, or rainfall). Non-arable; and
- Vlei.

Land potential of the project area is illustrated in

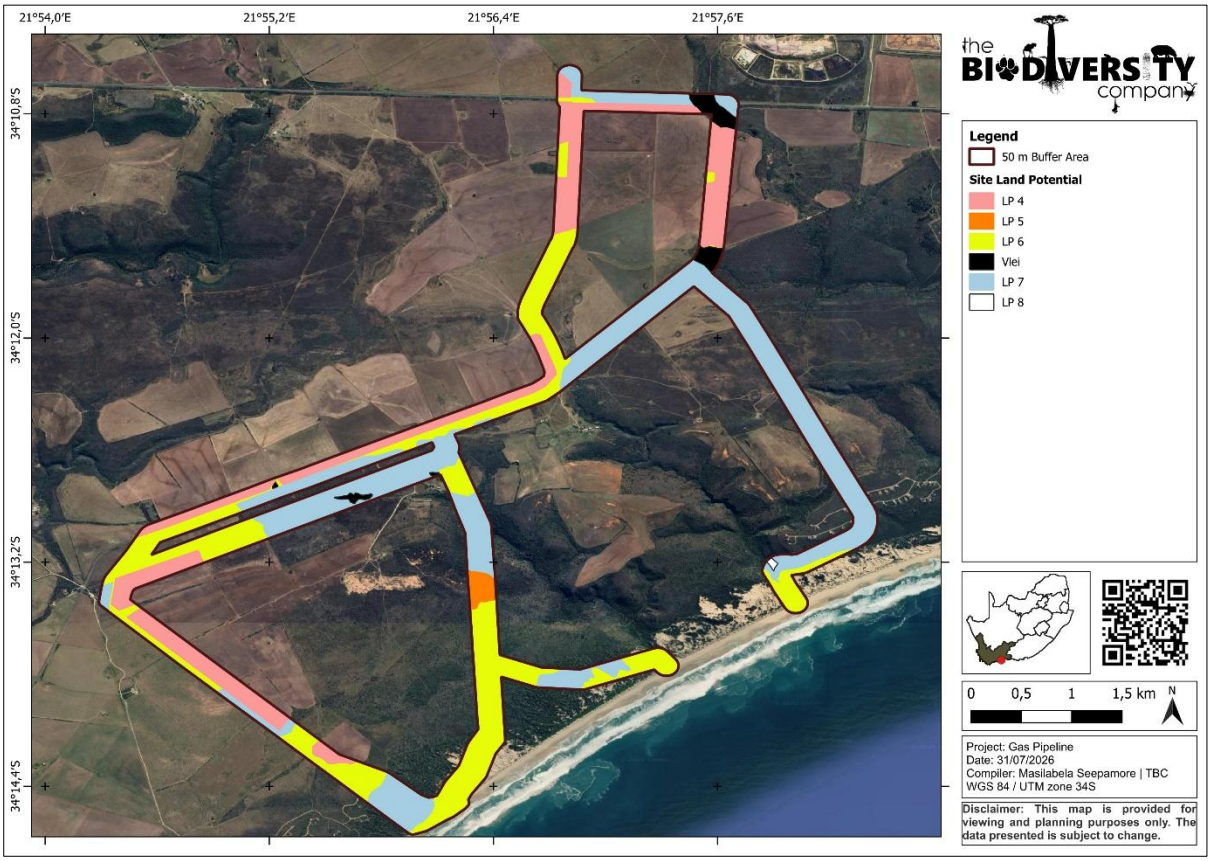



Figure ***3-4***.

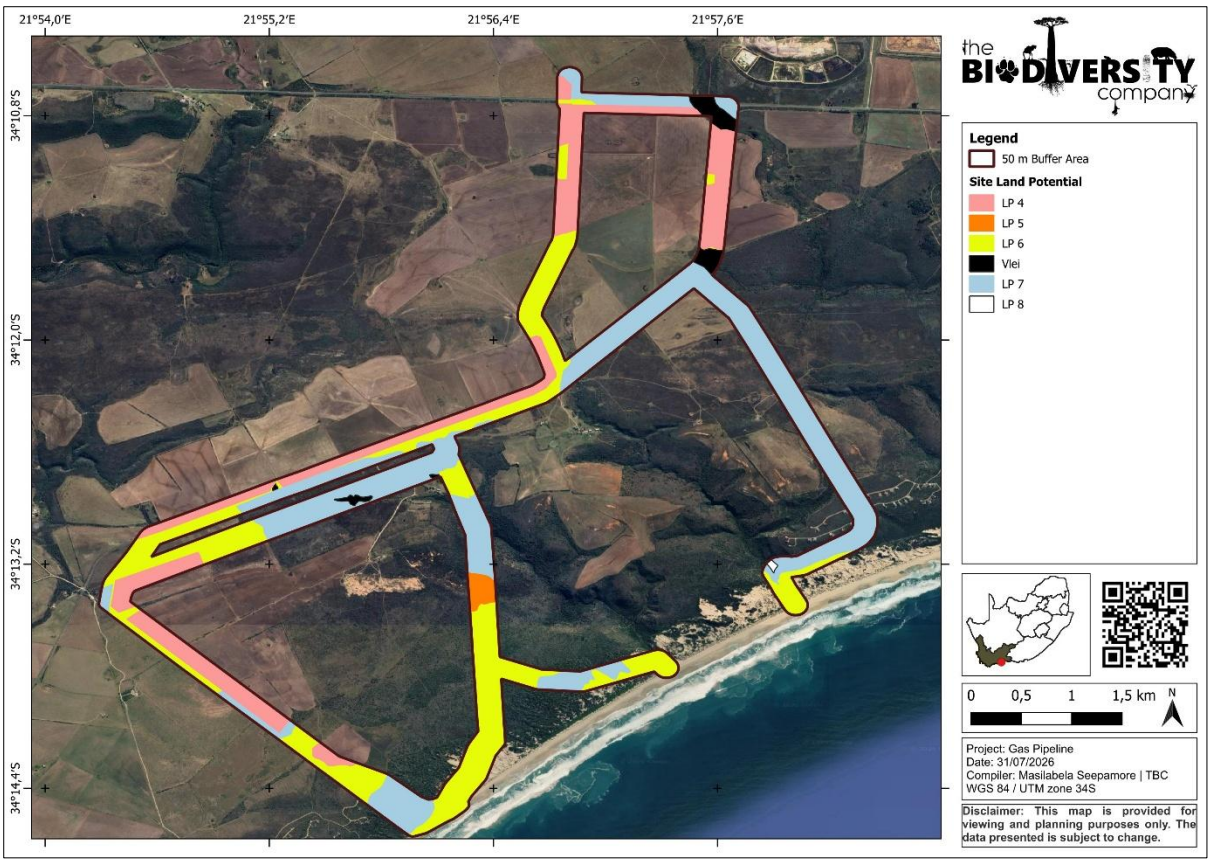


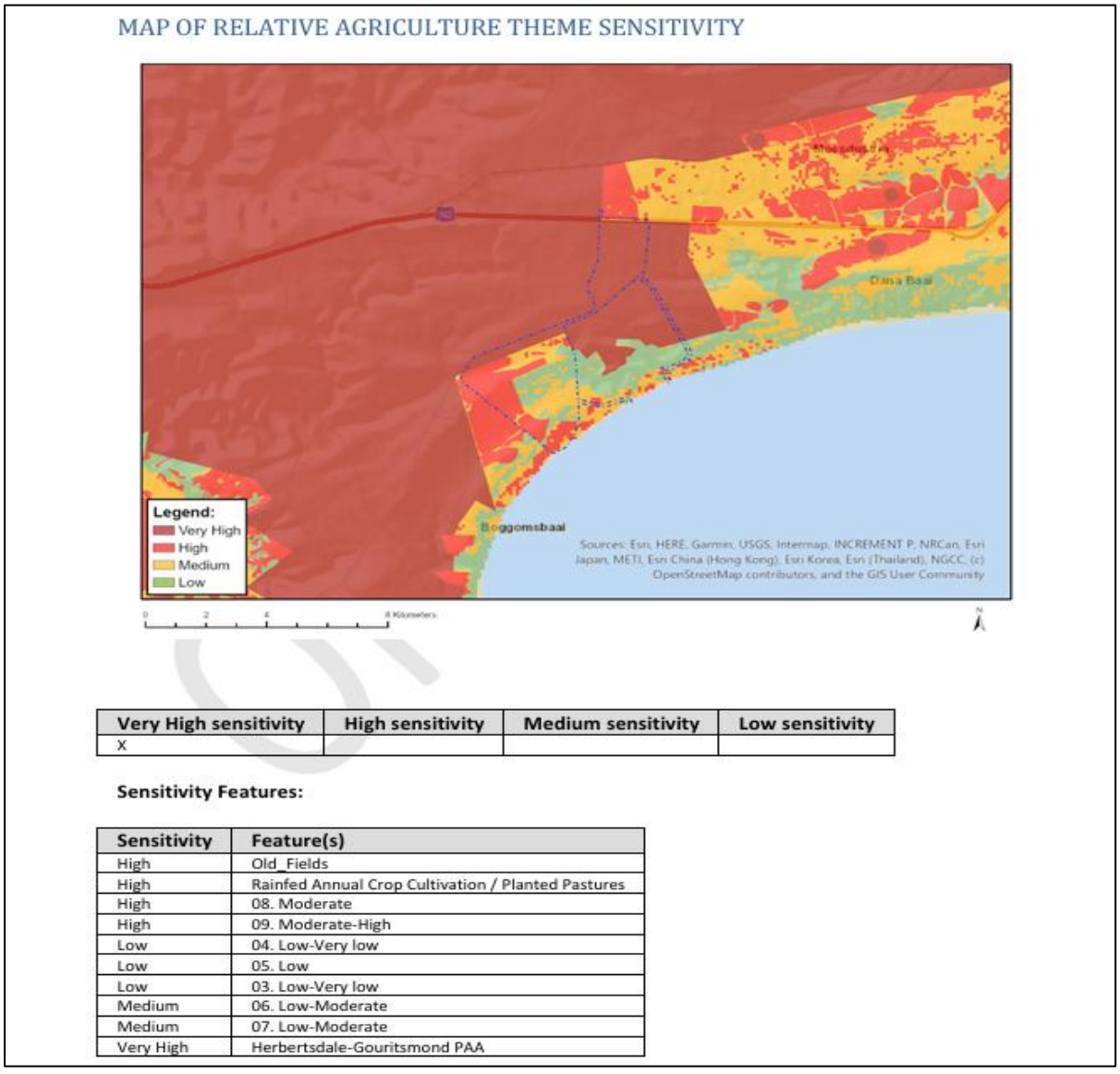
*Figure 3-4 Land Potential within the 100 m Buffer area of the Project Area*

# 4 Screening Tool

## 4.1 Screening Report

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

- Agriculture Theme Sensitivity indicates that the 100 m corridor areas of the project area fall within the “Low” to "Very High” agricultural sensitivity (Figure 4-1).




| Very High sensitivity | High sensitivity | Medium sensitivity | Low sensitivity |
|---|---|---|---|
| X | | | |

**Sensitivity Features:**

| Sensitivity | Feature(s) |
|---|---|
| High | Old_Fields |
| High | Rainfed Annual Crop Cultivation / Planted Pastures |
| High | 08. Moderate |
| High | 09. Moderate-High |
| Low | 04. Low-Very low |
| Low | 05. Low |
| Low | 03. Low-Very low |
| Medium | 06. Low-Moderate |
| Medium | 07. Low-Moderate |
| Very High | Herbertsdale-Gouritsmond PAA |

*Figure 4-1 Map of Relative Agricultural Theme Sensitivity for the Onshore Gas Pipeline Project generated by the Environmental Screening Tool*

Fifteen (15) land capabilities have been digitised by (DAFF, 2017) across South Africa, of which seven (7) potential land capability classes are located within the proposed footprint area’s assessment area, including;

- Land Capability 3 - 5 (Very Low to Low Sensitivity);

- Land Capability 6 - 7 (Low-Moderate Sensitivity); and
- Land Capability 8 - 9 (Moderate to Moderate-High Sensitivity).

The land capability dataset (DAFF, 2017) indicates land capabilities expected throughout the project area falls on land capability sensitivities ranging from “Very Low to Low”, “Low-Moderate” to “Moderate to Moderate High” sensitivities (Figure 4-1). “Highly” sensitive field crop boundaries were also identified within the 100 m corridor areas of proposed project area with the help of the agricultural theme tool (DFFE, 2026; Figure 4-1). Furthermore, the project area was also confirmed to fall within the Herbertsdale – Gouritsmond PAA, which is classified as “Very High” sensitivity.

The baseline soil findings, current land uses and the calculated land potential concur with the agricultural theme tool in areas associated with “Low-moderate” and “Very Low to Low” land capability sensitivities and with highly sensitive field crop boundaries. The baseline findings further dispute the agricultural theme tool in areas demarcated with “Moderate to Moderate-high” land capability sensitivity.

### 4.1.1 Screening Tool Comparison

The verified soil properties, land potential as well as the current land use of the development area, classified the overall sensitivity of the proposed project area as evenly “Low” and “High” along the natural veld and active crop fields, respectively, with “Moderate” sensitivities along the natural field and water courses, respectively (Figure 4-2). The allocated sensitivities for the theme are either disputed or validated in Table 4-1 below.

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

| Screening Tool Theme | Feature | Screening Tool | Specialist | Tool Validated or Disputed by Specialist - Reasoning |
|---|---|---|---|---|
| Agricultural Theme | Herbertsdale-Gouritsmound PAA | Very High | High | Disputed – Land Capability Moderate to Moderate-High. The presence of high value grain production under rainfed conditions. No presence of irrigation infrastructure. |
| | Herbertsdale-Gouritsmound PAA | Very High | Medium | Disputed – Land Capability Low-Moderate. The absence of any active cropping either under rainfed or irrigation infrastructure. Moreover, the presence of medium potential soils such as Ermelo, Clovelly and Carolina soil forms |
| | Herbertsdale-Gouritsmound PAA | Very High | Low | Disputed – Land Capability Very Low to Low. The absence of any active cropping either under rainfed or irrigation infrastructure. Moreover, the presence of low potential soils such as Swartland, Sepane, Glenrosa, Namib, Mispah and Johannesburg soil forms |
| | Old Fields | High | Medium | Disputed – Land Capability Low-Moderate. The presence of medium potential soils such as Ermelo, Clovelly and Carolina soil forms. |
| | Old Filed | High | Low | Disputed – Land Capability Very Low to Low. The presence of low potential soils such as Swartland, Sepane, Glenrosa, Namib, Mispah and Johannesburg soil forms |
| | Rainfed Annual Cropping/ Planted Pastures | High | High | Validated – Land Capability Moderate to Moderate-High. The presence of high value grain production under rainfed conditions. No presence of irrigation infrastructure. |
| | Moderate to Moderate-High (LC 8-9) | High | Medium | Disputed – Land Capability Low-Moderate. The presence of medium potential soil such as Ermelo, Clovelly and Carolina soil forms. Moreover, the presence of hydromorphic soils with signs of wetness such as Katspruit and Kroonstad soil forms |
| | Moderate to Moderate-High (LC 8-9) | High | Low | Validated – Land Capability Low-Moderate. The presence of medium potential soil such as Clovelly and Carolina soil forms. Moreover, the presence of hydromorphic soils with signs of wetness such as Katspruit, Fernwood, Iswepe and Stream beds. |
| | Low-Moderate (LC 7-6) | Medium | Low | Disputed - Land Capability Very Low to Low. The presence of low potential soils such as Swartland, Sepane, Glenrosa, Namib, Mispah and Johannesburg soil forms. |
| | Very Low to Low (LC 3-5) | Low | Medium | Disputed – Land Capability Low-Moderate. The presence of medium potential soil such as Ermelo, Clovelly and Carolina soil |

| | | | | |
|---|---|---|---|---|
| | | | | forms. Moreover, the presence of hydromorphic soils with signs of wetness such as Katspruit and Kroonstad soil forms. |
| | **Very Low to Low (LC 3-5)** | **Low** | **Low** | Validated - Land Capability Very Low to Low. The presence of low potential soils such as Swartland, Sepane, Glenrosa, Namib, Mispah and Johannesburg soil forms. |

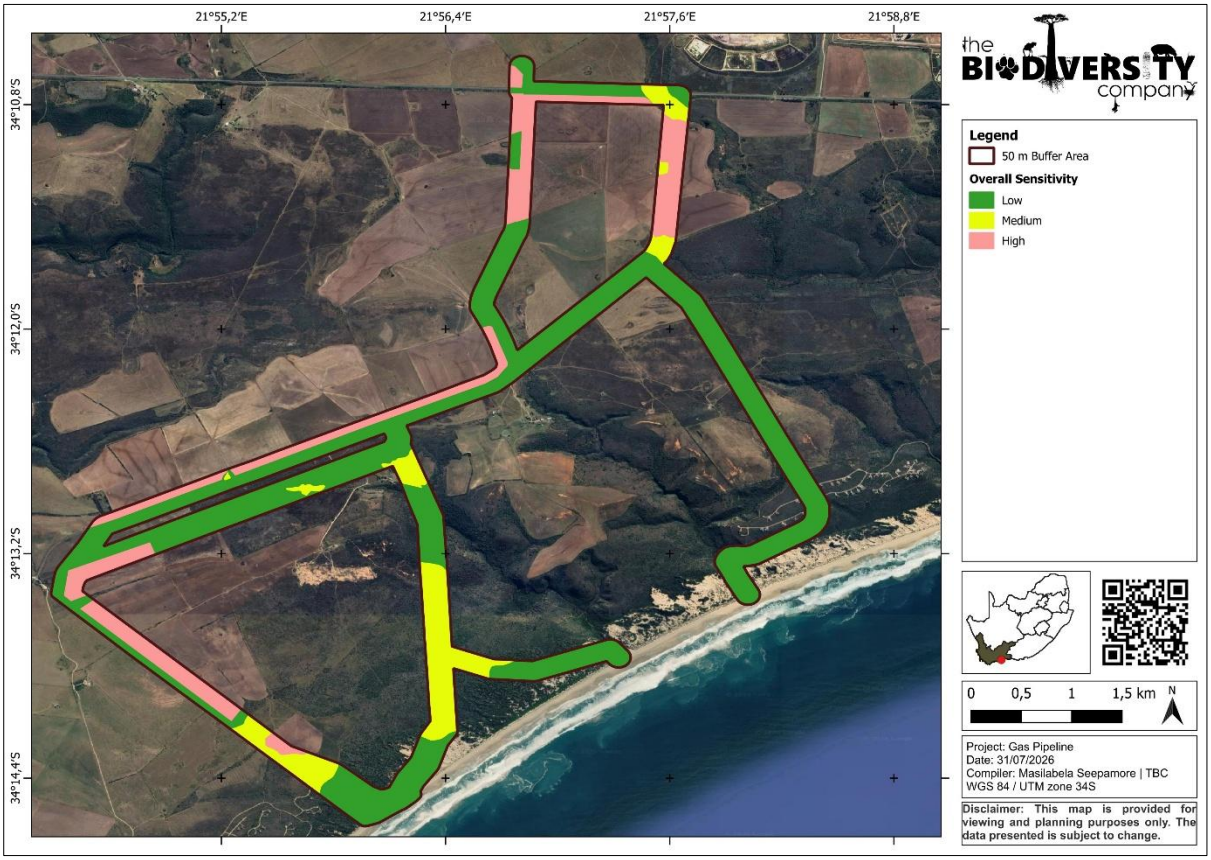



***Figure 4-2 Overall sensitivity of the project area***

# 5 Conclusion

Twelve (12) representative soil forms identified within the proposed project area include the Ermelo, Clovelly, Carolina, Katspruit, Kroonstad, Sepane, Swartland, Namib, Glenrosa, Mispah, Johannesburg and Grabouw soil forms. The proposed activities fall predominately on low and high agricultural potential areas. The high agricultural potential areas comprised of confirmed presence of active crop fields under rainfed conditions. The medium agricultural potential areas comprised of Ermelo, Carolina, Clovelly, Katspruit and Kroonstad soil forms. Lastly, the low potential areas comprised of Sepane, Swartland. Namib, Mispah, Glenrosa, Grabouw, and Johannesburg soil forms.

The land capability dataset (DAFF, 2017) indicates land capabilities expected throughout the project area falls predominately on “Very High” land capability sensitivity with some areas with “Very Low to Low”, “Low-Moderate” and “Moderate High” sensitivities. Furthermore, “Very High” and “High” sensitive field crop boundaries were also identified within the 100 m corridor areas of the project area with the help of the agricultural theme tool, and they are illustrated as rainfed annual crop cultivation, planted pasture, and the presence of irrigation infrastructure such as pivot.

It is the specialist’s opinion that the proposed Onshore Gas Pipeline project will have an overall low residual impact pre-mitigation and very low post-mitigation on the agricultural production ability of the land. It is important to note that seasonality has no bearing on the soil assessment and fieldwork is therefore it’s not limiting factor and that no further site visits are necessary for the proposed development.

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# 7 Appendix Items

## 7.1 Appendix A – Photo Log

| Survey Point | Description | Photographs |
|---|---|---|
| Site GPS Reference:<br>Photo 1<br>Date: 28/08/2026<br>GPS Coordinates:<br>34°11'48.11"S<br>21°57'14.98"E | Orthic 30 cm, hard rock +30cm. Active cropping. |  |
| Site GPS Reference:<br>Photo 3<br>Date: 29/08/2026<br>GPS Coordinates:<br>34°12'20.37"S<br>21°56'27.20"E | Orthic 30 cm, Pedocutanic 50 cm, lithic 80 cm. Duplex soil |  |

| | | |
|---|---|---|
| Site GPS Reference:<br>Photo 17<br>Date: 29/08/2026<br>GPS Coordinates:<br>34°12'51.62"S<br>21°55'37.90"E | Orthic 30 cm, Albic, 60 cm, gleyic, 80 cm. Wetland |  |
| Site GPS Reference:<br>Photo 18<br>Date: 28/08/2026<br>GPS Coordinates:<br>34°13'21.41"S<br>21°56'20.16"E | Orthic 30 cm, Yellow-Brown, 120 cm. Apedal soil under open veld. |  |
| Site GPS Reference:<br>Photo 20<br>Date: 28/08/2026<br>GPS Coordinates:<br>34°13'45.70"S<br>21°57'16.71"E | Orthic, 5cm, Regic sand, 120cm. |  |

| | | |
|---|---|---|
| Site GPS Reference:<br>Photo 7<br>Date: 27/08/2026<br>GPS Coordinates:<br>34°11'17.65"S<br>21°57'35.89"E | Orthic 20 cm, Gley 60 cm, hard rock +60cm. Active Cropping |  |

## 7.2 Appendix B – Specialist Declaration of Independence

I, Masilabela Seepamore, declare that:

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

**Masilabela Seepamore**

**Soil & Agricultural Scientist**

The Biodiversity Company

August 2026

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

**Matthew Mamera**

**Soil Scientist**

The Biodiversity Company

August 2026

## 7.3 Specialist CV

# Masilabela Seepamore

Pr Sci Nat 113907 +27 78 815 1878 masilabela@thebiodiversitycompany.com

### PROFILE SUMMARY

Soil and Agricultural specialist with ~ 3 years' consulting experience. Specialist experience in project exploration, mining, engineering, hydropower, renewable energy, and private sector developments. Project management of national I 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.

### PERSONAL INFO

Nationality: South African
Date of birth: 08 June 1988

### EXPERIENCE

Environmental Impact Assessment (EIA)
Environmental Management Programmes (EMP)
Rehabilitation Plans
Agricultural potential assessments
Soil taxonomy classification (SA form)

### SKILLS

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

### LANGUAGES

English – Proficient
Afrikaans & IsiZulu – Conversational
Tswana, Sesotho, Sepedi - Proficient

Signed: Masilabela Seepamore

### ACADEMIC QUALIFICATIONS

**FERTALIZER ASSOCIATION OF SOUTHERN AFRICA (FERTASA) (2021) –** Fertilizer Advisory Certificate & Training Scheme (FACTS)

**University of the Free State (2019):** MAGISTER SCIENTIAE (MSc) *Cum Laude* – Soil Science:
**Title:** *Impact of long-term production management practices on wheat grain yield under a semi-arid climate.*

**University of the Free State (2015):** BACCALAUREUS SCIENTIAE AGRICULTURAE Honores (Hons) – Soil Science.
**University of the Free State (2013):** BACCALAUREUS SCIENTIAE AGRICULTURAE. Majors: Agronomy & Soil Science.

### PROFESSIONAL EXPERIENCE

| | |
|---|---|
| Sep 2023 – Present | **The Biodiversity Company** Soil Ecologist |
| Nov 2022 – Aug 2023 | **ARC-NRE** Intern |
| Mar 2021 – Sep 2021 | **Central University of Technology** Lecturer (Part-Time) |
| July 2016 – Dec 2018 | **University of the Free State** Research Assistant |

### INTERNATIONAL EXPERIENCE

South Africa

# 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**<br>Soils Unit Manager / Soil & Soil Hydropedology |
| Feb 2018 – Dec 2020 | **University of the Free State**<br>Junior Researcher, lecturer / Soil Science |
| Jan 2015 – Dec 2017 | **University of Fort Hare**<br>Junior Research, Tutor / Soil Science |

## INTERNATIONAL EXPERIENCE

Angola, Botswana, Namibia, Zambia, South Africa