Environmental Management Programme

PREPARED IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, ACT NO. 107 OF 1998, ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS OF 2014, AS AMENDED

PROJECT:

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED CLEARANCE OF INDIGENOUS VEGETATION FOR CULTIVATION ON PORTION 38 OF THE FARM UITNOOD NO. 129, ROBERTSON REGISTRATION DIVISION, WESTERN CAPE PROVINCE.

DEA&DP Reference Number: 16/3/3/2/B1/14/1028/24

APPLICANT:

EILANDIA PLASE (Pty) Ltd.

PREPARED BY:

CORNERSTONE
ENVIRONMENTAL CONSULTANTS

September 2024

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Report Review and Quality Management:

	Draft 1	Draft 2	Final
Issue/Revision Name	Draft EMPr	Draft EMPr	-
Report prepared by:	Annemarie Hurter (Registered EAP)	Annemarie Hurter (Registered EAP)	-
Date:	22 April 2024	5 September 2024	-
Signature:			
Report reviewed by:	Pieter de Villiers (Registered EAP)	Pieter de Villiers (Registered EAP)	-
Date:	24 April 2024	5 September 2024	-
Signature:			

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ADDENDUMS

ACRONYMS AND ABBREVIATIONS

BA	Basic Assessment
BSP	Biodiversity Spatial Plan
CARA	Conservation of Agricultural Resources Act, Act No. 43 of 1983
CBA	Critical Biodiversity Area
C&RR	Comments and Responses Report
DFFE	National Department of Forestry, Fisheries and the Environment
DEA&DP	Department of Environmental Affairs and Development Planning
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
ESAs	Ecological Support Areas
FEPA	Freshwater Ecosystem Priority Area
GHG	Greenhouse Gas
ha	hectares
HWC	Heritage Western Cape
IDP	Integrated Development Plan
I&AP	Interested and/or Affected Party
MMP	Maintenance Management Plan
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended
NFEPA	National Freshwater Ecosystem Priority Area
NHRA	National Heritage Resources Act, Act No. 25 of 1999
NID	Notice of Intent to Develop
NWA	National Water Act, Act No. 36 of 1998
PSDF	Western Cape Provincial Spatial Development Framework, 2014
RD	Registration Division
SANBI	South African National Biodiversity Index
SDF	Spatial Development Framework
SDP	Site Development Plan
WCBSP	Western Cape Biodiversity Spatial Plan

DEFINITIONS

"Activity" is the relevant action(s) that will take place on the site, e.g. construction of the layer facility;

"Alien species" means—

- a species that is not an indigenous species; or
- an indigenous species translocated or intended to be translocated to a place outside its natural distribution range in nature, but not an indigenous species that has extended its natural distribution range by natural means of migration or dispersal without human intervention.

"Ecological Infrastructure" refers to naturally functioning ecosystems that deliver valuable services to people, such as water and climate regulation, soil formation and disaster risk reduction.

"Environmental aspect" is a feature or characteristic of an activity that affects or can affect the environment.

"Environmental impact" is a change to the environment. Such change can be positive or negative. Environmental impacts are caused by environmental aspects;

"Environmental "Objective" is the specific environmental goal; and

"Environmental Target" is a detailed performance requirement. Environmental targets are derived from environmental objectives and are used to achieve these objectives. Targets should be measurable where possible.

"Indigenous vegetation" refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

''Invasive species'' means any species whose establishment and spread outside of its natural distribution range—

- threaten ecosystems, habitats or other species or have demonstrable potential to threaten ecosystems, habitats or other species; and
- may result in economic or environmental harm or harm to human health.

"Listed Activity" means an activity identified in any notice published by the Minister or MEC in terms of section 24D(1)(a) of the Act as a listed activity or specified activity. Activity in this document refers to the activities as listed in Listing Notice 1, 2 and 3 of the Environmental Impact Assessment Regulations, 2014 (as amended).

"Maintenance" means actions performed to keep a structure or system functioning or in service on the same location, capacity and footprint.

1. INTRODUCTION

This Environmental Management Programme (EMPr) describes, amongst others, management and mitigation measures, and identifies the specific people/entities that will be responsible for implementation of the identified management and mitigation measures in order to ensure that impacts on the environment are minimised during the construction and operational phases of the activities associated with the removal of indigenous vegetation and agricultural expansion at Portion 38 of Farm Uitnood No. 129 (Uitnood Farm), Robertson Registration Division (RD), hence forth also referred to as "the site / the farm".

2. GUIDELINE TO USE THIS DOCUMENT

It is crucial to thoroughly examine, comprehend, execute, and implement this EMPr across all stages of the development. The holder of the **Environmental Authorisation (EA Holder) (in this case Eilandia Plase (Pty) Ltd.)** must possess a copy of the EMPr, and an extra copy must be available on-site throughout the relevant development phases (e.g. pre-construction, construction, post-construction etc.) of the project.

In the event of appointing external Contractors, the EMPr, together with the Environmental Authorisation, must form part of the contractual agreement between the relevant contractor(s) and the EA Holder.

This EMPr must be considered as a dynamic document that can be modified as necessary to address evolving situations on-site or in the surrounding environment. Changes may also be made to accommodate requests or conditions from the Competent Authority, the Department of Environmental Affairs & Development Planning (DEA&DP). Any amendments to this EMPr require prior approval from the DEA&DP before implementation.

3. AUTHOR OF THIS EMPr

This EMPr was prepared by Annemarie Hurter, the Environmental Assessment Practitioner (EAP) who undertook the Environmental Impact Assessment (EIA) process for the project. The section below provides the details of the EAP and explains the EAP's expertise to prepare this EMPr.

Annemarie (du Toit) Hurter has more than 16 years of experience as an Environmental Assessment Practitioner (EAP) and is a Senior EAP at Cornerstone Environmental Consultants (Pty) Ltd. She holds a Master's Degree in Science (M.Sc. - Zoology) (*Cum Laude*) from the University of Stellenbosch, after obtaining her Bachelor's Degree in Science (B.Sc.) majoring in Zoology and Botany. She is a Registered Member of the Environmental Assessment Practitioners' Association of South Africa (EAPASA -Registration No. 2021/4014) and member of the International Association for Impact Assessors, South African Affiliate (IAIAsa) since 2010.

See **Addendum A** for the relevant Curriculum Vitae.

4. PROJECT DESCRIPTION

The following sections provide information on the location of the proposed activities, as well as what the proposed activities entail.

4.1 LOCATION

Uitnood Farm is located approximately 4.5 km south of Robertson and 9 km north of McGregor, in the Langeberg Municipal area within the Cape Winelands District, in the Western Cape Province. Access to the property is gained via the Langverwagten Road, a gravel road that splits off Reitz Street to the north of the farm. The Breede River passes by the farm on the northern side, however, it does not border the farm. A perennial tributary of the Breede River, namely the Keisers River, transects the farm in its south-eastern section.

Refer to **Figure 1** below indicating the farms' location. Also refer to the Map attached as **Figures A** to this EMPr.

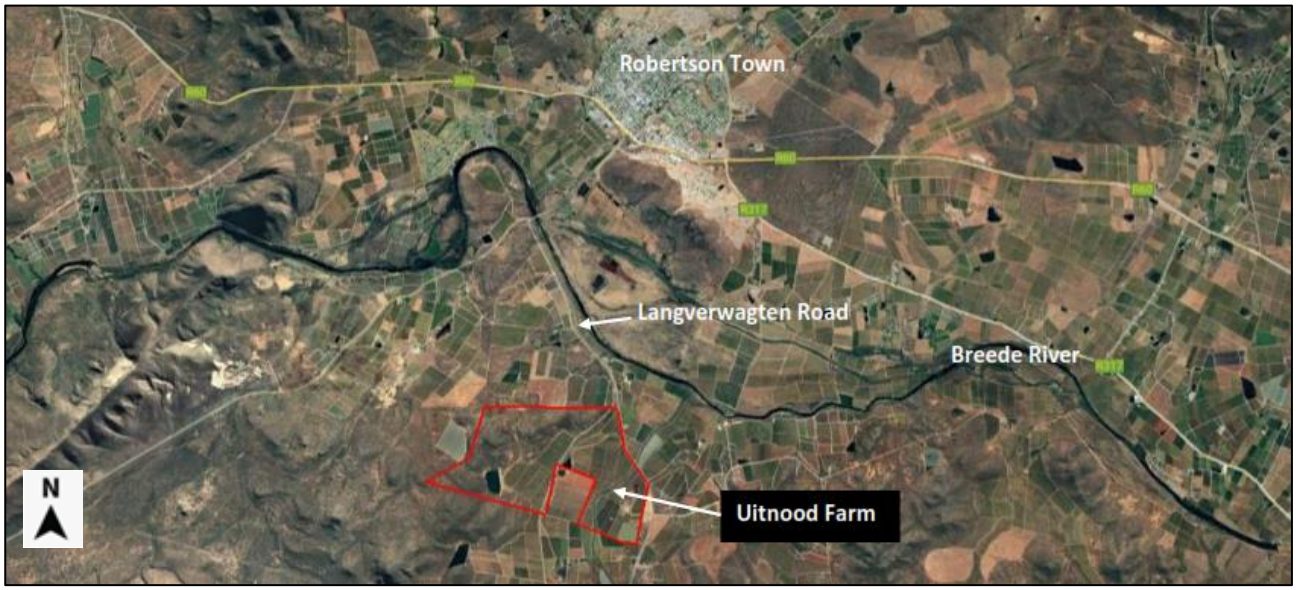


Figure 1: Map indicating the location of Uitnood Farm (Development Site).

4.2 PROPOSED ACTIVITY

The Applicant proposes to expand the existing cultivation areas on Uitnood Farm. The proposed development will entail the clearance of indigenous vegetation totalling a combined area of **± 66 ha**, for the establishment of new vineyards and dryland pastures. The total area proposed to be cleared for cultivation is subdivided into different cultivation areas, namely Cultivation Areas 1a, 1b, 1c, 2, 3, 4 and 5.

All proposed cultivation areas have been identified following a rigorous scoping process. Aspects including terrestrial biodiversity constraints, aquatic biodiversity constraints, and soil characteristics have all been considered and incorporated into this **PREFERRED LAYOUT** (refer to **Figure 1** below).

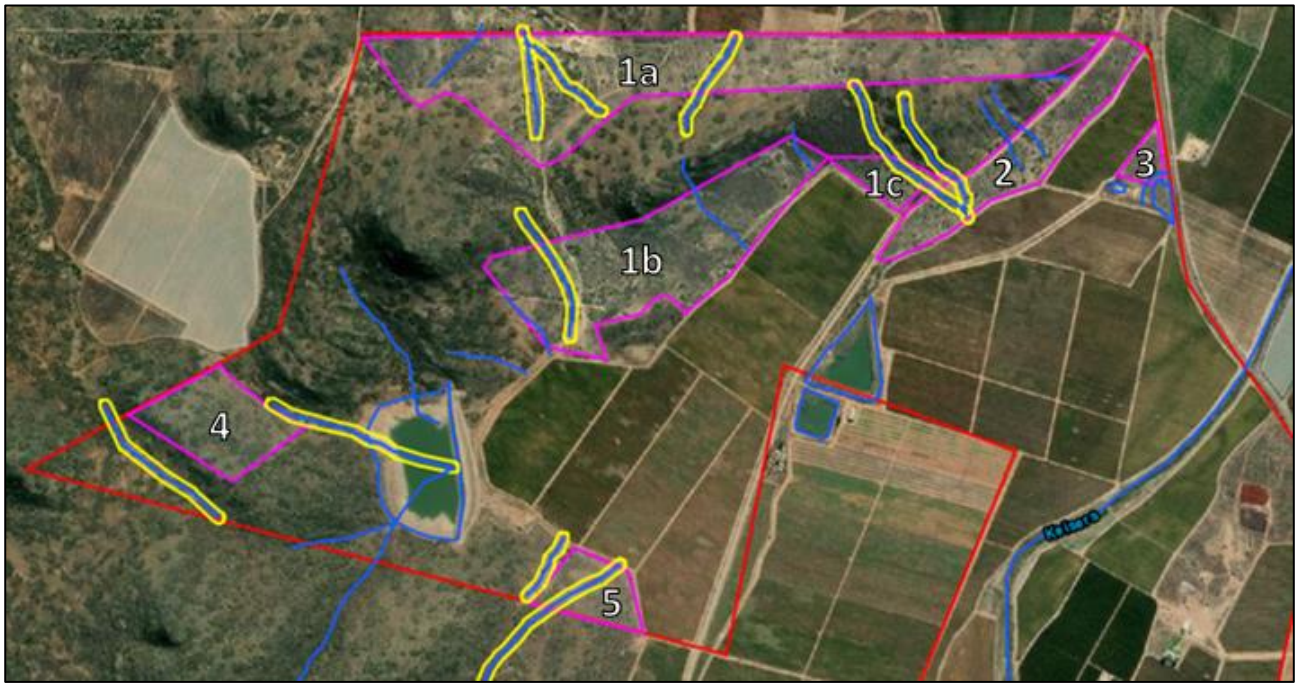
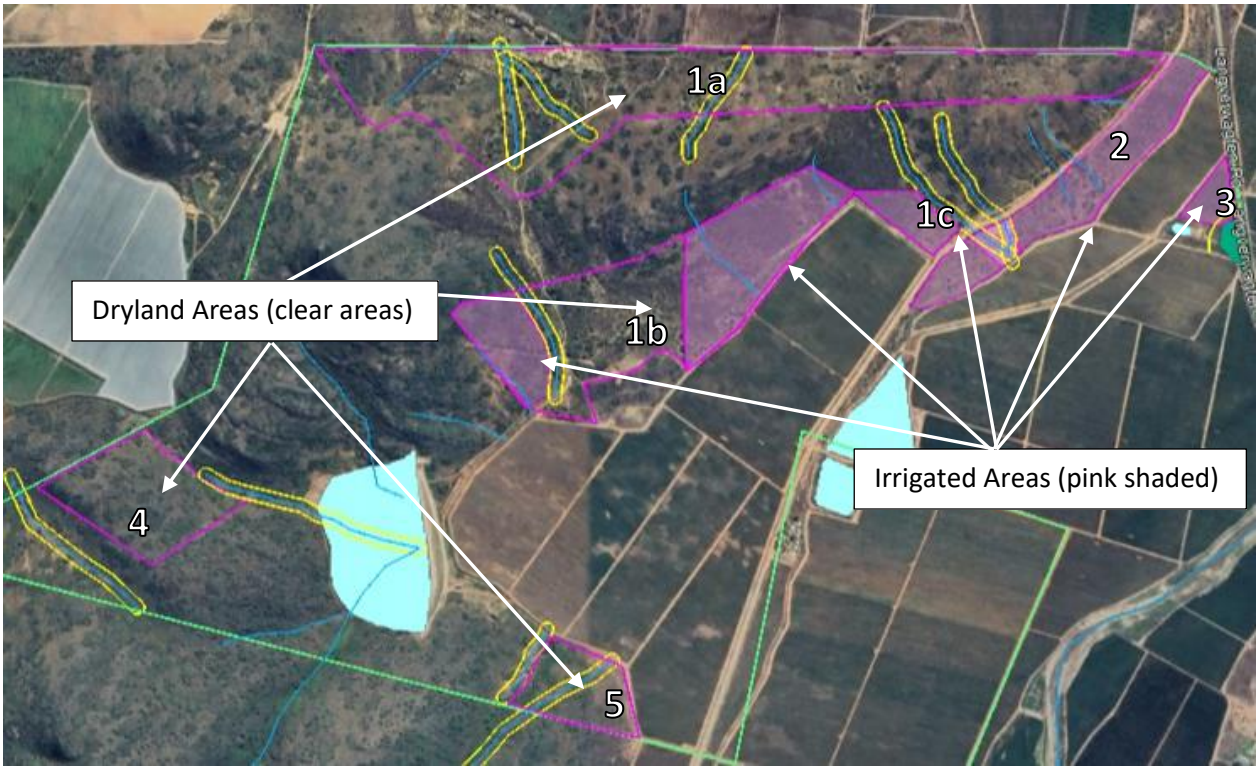


Figure 2: Map showing the proposed Preferred Cultivation Areas (pink polygons) after all the environmental constraints have been considered, with the aquatic buffers indicated by yellow polygons.

Only ± 20 ha of the proposed cultivation areas will be irrigated, while the remaining ± 46 ha of the proposed cultivation areas will be transformed into dryland pastures. Refer to **Table a** below that indicates which areas are to be irrigated, and which will be dryland areas.

Table 1: Names and Sizes of the Proposed Cultivation Areas at Uitnood Farm, as well as the extent of the Irrigated and Dryland expanses within the Areas – to be read in conjunction with the figure indicating the Cultivation Areas below the table.

Cultivation Areas		Agricultural Constraints Considered	Extent of Irrigated Areas	Extent of Dryland Areas
Area 1	Area 1a	27.5 ha	0 ha	27.5 ha
	Area 1b	19 ha	10.8 ha	8.2 ha
	Area 1c	1.5 ha	1.5 ha	0 ha
Area 2		7.2 ha	7.2 ha	0 ha
Area 3		0.9 ha	0.9 ha	0 ha
Area 4		6.8 ha	0 ha	6.8 ha
Area 5		3.2 ha	0 ha	3.2 ha
Totals		**66.1 ha**	**20.4 ha**	**45.7 ha**



All the required infrastructure to farm these proposed areas are already in place. Irrigation pipelines (with an estimated length of ± 900 m and width of 250 mm diameter) will be lain inside the already disturbed footprint of existing farm roads and cultivation areas. No new farm roads are required. Irrigation pipelines will have to be constructed from the pump station near the existing dam, to Cultivation Area 1b, which is one of the areas proposed for irrigation. **The irrigation infrastructure does not require Environmental Authorisation since it will not trigger NEMA Listed Activities and will therefore not be assessed as part of this EIA process.**

Irrigation water for the proposed vineyards will be sourced from the Breede River, from Brandvlei Dam. A Water Use License for this additional water is being applied for (for 20 ha of land).

Refer to **Figure B** for the Geo-referenced Site Layout Plan for the Uitnood Farm Development.

5. RECEIVING ENVIRONMENT SUMMARY

Uitnood Farm with the proposed cultivation areas is located less than 800 m south of the Breede River. The land use around the farm has for many years remained largely agricultural, modifying much of the natural vegetation that would have originally occurred, although large naturally vegetated areas do remain, especially west and south of the proposed cultivation sites. The land cover at the sites of the proposed activities is a mixture of succulent karoo shrubland and natural grassland vegetation. The closest urban areas are Robertson ± 4.5 km to the north and McGregor ± 9 km to the south. The formally protected Vrolijkheid Nature Reserve is located ± 7 km to the south-east of the site and the informal conservation area Skuilkrans Private Nature Reserve is about 10 km to the south-west.

There are no Protected Areas identified within or directly adjacent to the farm. The farm and immediate surroundings do not form part of any National Protected Areas Expansion Strategy: Focus areas for protected area expansion. The proposed cultivation sites do contain indigenous vegetation, but do not form part of a natural corridor.

The land use around the farm has for many years remained largely agricultural, modifying much of the natural vegetation that would have originally occurred, although large naturally vegetated areas do remain.

5.1 CLIMATE

The application area has a typical Mediterranean climate and receives most of its rainfall during cold winters whilst its summers are hot and dry. The month of July receives an average rainfall of 27 mm and its average temperature ranges between 19 °C in the day and 5 °C at night. In contrast, February receives an average rainfall of 5 mm and its average temperature ranges between 30 °C and 16 °C. The area receives a mean annual rainfall of 260 - 280 mm, while the average temperatures for February and July are 23 °C and 12 °C respectively. The total annual evaporation for the area is 1 392 mm, with the highest evaporation occurring during the warm summer months. Surface water flow is therefore much higher during winter months with increased flows usually occurring from April to September and the highest flows in August. (*Source:* Cape Farm Mapper, 2023)

5.2 TOPOGRAPHY AND STORMWATER MANAGEMENT

The application site is located within the Breede River Valley, on southern- and eastern facing slopes extending down to the Keisers River ± 3 km upstream of where it joins the Breede River. The proposed development areas are relatively undisturbed, however the valley floor closer to the Keisers River is completely modified by cultivated areas (vineyards). Several smaller streams drain the hillside that is in a similar state to the surrounding landscape, which is still largely natural in the upper reaches but significantly modified in the lower reaches.

The proposed cultivation areas are arranged to avoid the steepest hillslopes and hilltops. Some of these drainage lines within the proposed cultivation areas are mapped as aquatic Ecological Support Areas (ESAs), but none are mapped as CBAs, NFEPAs or wetland areas. (*Source*: Cape Farm Mapper, 2023)

5.3 SOILS, GEOLOGY AND AGRICULTURAL POTENTIAL

The geology of the area is underlain by feldspathic sandstone of the Rietvlei Formation, especially the elevated steeper areas are very rocky with little soils. Table Mountain Group is evident on the higher-lying slopes in the west and the east of the study area, while shale and sandstone of the Bokkeveld Group, overlain by loam on foot slopes and alluvium occur in the valley bottoms. Glenrosa and Mispah soil forms are common in the area. Lime is generally present in the entire landscape. The application area has a moderate erodibility factor of 0.45, an average soil depth of less than 450 mm and clay content of less than 15%. (*Source*: Cape Farm Mapper, 2023)

5.4 TERRESTRIAL ECOLOGY

According to the SA Vegetation Map (Mucina & Rutherford 2006 & 2018 update) the vegetation within proposed cultivation Areas 1, 2 and 3 comprise Robertson Karoo vegetation with a strip of Breede Sand Fynbos running through these areas. Area 3 (triangular area), according to the Vegetation Map, comprises Breede Sand Fynbos with a small portion overlapping with Muscadel Riviere vegetation (confirmed to be absent by the botanist). Proposed cultivation Areas 4 and 5 comprise only of Robertson Karoo vegetation.

- **Robertson Karoo** is Least Threatened (LT)
- **Breede Sand Fynbos** was considered Vulnerable (VU) in the National List of Threatened Ecosystems (DEA 2011), but is now listed as Critically Endangered (CR) revised National List of Threatened Ecosystems (DFFE 2022).
- **Muscadel Riviere** is listed Endangered (EN) (DFFE 2022) as it is primarily converted into vineyards.

Natural vegetation within **Breede Sand Fynbos** areas comprises an open restioid shrubland on deep sands dominated by *Willdenowia incurvata* (besembos). Other prominent elements include annual and perennial herbs, shrubs, succulents, geophytes and graminoids. Scattered karoo elements were also recorded amongst the Sand Fynbos areas. All Sand Fynbos areas are in a good condition except for the north-westernmost portion extending north of the farm boundary which is subjected to past sand mining. The strip of land situated between the road and canal (Area 2) is subjected to low to medium density alien Port Jackson (*Acacia saligna*) infestation. Area 3 shows some level of disturbance which can be related to edge effects (surrounding cultivation).

The vegetation within **Robertson Karoo** areas comprises an open karoid shrubland matrix with a high concentration of succulents and a number of thicket patches, as well as annuals, perennial herbs and geophytes. The substrate is shale derived clays with some shallow gravely areas in places. Overall, the vegetation and habitat within Robertson Karoo areas are in a good condition

Five plant species of conservation concern (SoCC) were recorded within the surveyed areas namely *Euchaetis pungens* (V), *Astroloba rubriflora* (V), *Brianhuntleya intrusa* (Near Threatened (NT)), *Euphorbia nesemanii* (NT), and *Eriospermum bowieanum* (V). All the colonies of threatened plant species have been excluded from the preferred layout of cultivation areas, except for Area 3 where a few *E. pungens* occurs. Please refer to **Figure C** below, indicating the location of these sensitive species.

5.5 FRESHWATER FEATURES

The Keisers River, located within the eastern portion of the property is a perennial river that drains this area. It is recognised as an aquatic CBA with associated floodplain NFEPA wetland areas. This area will be excluded from any development or further disturbances.

Wetland Area

A wetland area is located within the eastern-most section of proposed cultivation Area 3 of the original layout. This wetland area has been excluded from the preferred layout of Area 3. This wetland area is located at the foot of the hillslope and is likely to have been associated with the small streams upslope of it, where these streams drained into the historic wider floodplain of the Keisers River. A small dam has been constructed in the channel upstream of it and a patch of wetland habitat occurs downslope of it, on the opposite side of Langverwagten Road. The surrounding areas are however cultivated with little remaining of the lower reaches of the original watercourses draining the hillslope.

Keisers Tributaries

The tributaries within the proposed cultivation areas can be categorised as relatively small episodic foothill tributaries of the Keisers River. In their upper reaches, the tributaries comprise several smaller tributaries and drainage lines that drain the hillslope. The upper reaches of these streams are still in a largely natural

state. The stream channels within the tributary are currently vegetated primarily with natural vegetation but have a high potential for erosion because the substrate is predominantly shallow alluvium, interspersed with gravel. The lower reaches of all the streams have mostly been lost to cultivation activities. Some of these drainage lines are considered aquatic Ecological Support Areas (ESAs), including small drainage lines occurring within Area 1a (although there is no evidence of any runoff in this area due to the deep sands), just south-west of Area 4 and west of Area 5. There are no aquatic CBAs, NFEPAs or wetland areas identified within any of the proposed cultivation areas, neither do the areas fall within any groundwater or surface Strategic Water Source Areas.

5.6 HERITAGE AND CULTURAL ASPECTS

The proposed development is in keeping with the agricultural nature of the cultural landscape in this part of Breede River valley, and as such, no negative impacts to the cultural landscape are anticipated. The heritage specialist found that it is unlikely that the proposed development will negatively impact on archaeological - and palaeontological heritage. HWC also confirmed that since there is no reason to believe that the proposed clearance of vegetation at Uitnood Farm will impact heritage resources, no further action under Section 38 of the NHRA is required. A Fossil Find Protocol has been included in this EMPr (**Addendum E**).

6. LEGAL FRAMEWORK

6.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT 107 OF 1998) AS AMENDED (NEMA) & EIA REGULATIONS OF 2014, AS AMENDED

The National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA) gives effect to the Constitution of the Republic of South Africa by providing a framework for co-operative environmental governance and environmental principles that enable and facilitate decision-making on matters affecting the environment. NEMA requires that an Environmental Authorisation be issued by a Competent Authority before the commencement of an activity listed in Environmental Impact Assessment (EIA) Regulations Listing Notices G.N. 324, 325, 326 and 327 as published on 7 April 2017.

Since this development proposal is an activity listed in the EIA Regulations, an EIA Process is required, and the respective reports (EIA Report and Appendices) had to be submitted to the DEA&DP in order for them to grant Environmental Authorisation to the Applicant (Eilandia Plase (Pty) Ltd.).

The Listed Activities identified, as per the NEMA EIA Regulations, 2014, as amended, that will most likely be triggered by the proposed project, are listed below.

Table 2: Listed Activities applicable to this application.

NEMA EIA Listed Activities: on or after 7 April 2017		
Listed Activity No(s): **(Listing Notice 1 of 2014, as amended) GN. R. No. 327**	Description of the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 1	Describe the portion of the development as per the project description that relates to the applicable listed activity.
Listed Activity 19	The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving; (a) will occur behind a development setback;	This listed activity will be triggered where tributaries or drainage lines will be infilled as part of vegetation clearance and land development for the establishment of cultivation areas.

NEMA EIA Listed Activities: on or after 7 April 2017		
	(b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	
Listed Activity No(s): **(Listing Notice 2 of 2014, as amended) GN. R. No. 325**	Description of the relevant Scoping/EIA Activity(ies) in writing as per Listing Notice 2	Describe the portion of the development as per the project description that relates to the applicable listed activity.
Listed Activity 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for; (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a MMP.	The sites to be cleared are collectively ± 66 ha in extent, which is more than 20 ha.
Listed Activity No(s): **(Listing Notice 3 of 2014, as amended) GN. R. No. 324**	Description of the relevant Basic Assessment Activity(ies) in writing as per Listing Notice 3	Describe the portion of the development as per the project description that relates to the applicable listed activity.
Listed Activity 12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan – Western Cape i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;	According to the revised National List of Ecosystems (DFFE 2022) that are Threatened or in Need of Protection, one of the vegetation types on site is listed as Breede Sand Fynbos, classified as a critically endangered ecosystem. Since more than 300 m^2 of the vegetation on site will be removed, this activity is now triggered. **Please be advised that during the planning phase of the project, and during the Pre-application Scoping phase of the project, Breede Sand Fynbos was classified as being Vulnerable.**

It is of utmost importance to adhere to this EMPr to **prevent the triggering of further listed activities** that may need to be authorised. If uncertain, contact an EAP or Environmental Control Officer (ECO) to ascertain whether specific activities will trigger any Listed Activities.

Appendix 4 of the EIA Regulations of 2014, as amended, provides the content requirements for an EMPr. An EMPr must also comply with Section 24N (2) of the NEMA. The table below lists the relevant requirements, indicates whether the relevant information is included in this report or not, and provides cross-references as to where the relevant information can be found in this EMPr.

Table 2: EMPr requirements in terms of Appendix 4 of the EIA Regulations of 2014, as amended

Appendix 4 of the EIA Regulations of 2014		Included (Yes, No or N/A)	EMPr Section Reference
1. An EMPr must comply with section 24N of the Act (NEMA) and include -			
(a)	details of - (i) the EAP who prepared the EMPr; and	**Yes**	**Chapter 3**
	(ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	**Yes**	**Chapter 3**
(b)	a detailed description of the aspects of the activity that are covered by the draft EMPr as identified by the project description;	**Yes**	**Chapter 4**
(c)	a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	**Yes**	**Figures A, B & C**
(d)	a description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	**Yes**	**Chapter 8 & 9**
	(i) planning and design;		
	(ii) pre-construction and activities;		
	(iii) construction activities;		
	(iv) rehabilitation of the environment after construction and where applicable post closure;		
	(v) where relevant, operation activities;		
(e)	a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	**Yes**	**Chapter 9**
(f)	a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to -	**Yes**	**Chapter 9**
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;		
	(ii) comply with any prescribed environmental management standards or practices;		
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and		
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;		
(g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	**Yes**	**Chapters 10 - 11**
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	**Yes**	**Chapter 11**
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	**Yes**	**Chapters 9 & 11**
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	**Yes**	**Chapters 9**
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	**Yes**	**Chapters 11 & 12**
(l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	**Yes**	**Chapters 11 & 12**

Appendix 4 of the EIA Regulations of 2014		Included (Yes, No or N/A)	EMPr Section Reference
(m)	an environmental awareness plan describing the manner in which-	**Yes**	**Chapter 13**
	(i) the Applicant intends to inform his or her employees of any environmental risk which may result from their work; and		
	(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and		
(n)	any specific information that may be required by the competent authority.	-	-
2. Where a government notice gazetted by the Minister provides for a generic EMPr, such generic EMPr as indicated in such notice will apply.			

6.2 OTHER APPLICABLE LEGISLATION

Eilandia Plase (Pty) Ltd. bears the responsibility of ensuring that all contractors, labourers, and any other appointed individuals or entities acting on their behalf maintain compliance with the conditions outlined in the received authorisations. Additionally, they must adhere to the provisions of all other relevant legislation, including, but not limited to:

- National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004);
- National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008);
- National Water Act, 1998 (Act No. 36 of 1998) (NWA);
- National Forest Act, 1998 (Act No. 84 of 1998);
- National Heritage Resources Act, 1999 (Act No. 25 of 1999); and
- Occupational Health and Safety Act, 1993 (Act No. 85 of 1993).

The NWA governs water usage and extractions. The aim of water resource management is to ensure the sustainable use of water through the protection of the quality of water resources for the benefit of all water users. The National Government has overall responsibility for and authority over water resource management. This includes the equitable allocation and beneficial use of water in the public interest. Therefore, a person can only be entitled to use water if the use is permissible under the Act.

Water uses applied for the proposed activity include:

- Section 21 (a) for the taking of water from the Breede River (through the Greater Brandvlei Dam Government Water Scheme).
- Section 21 (c & i) for impeding / diverting and/or changing characteristics of a watercourse.

7. PHASES OF THE PROJECT

This EMPr outlines the actions necessary to avoid, minimise, manage and monitor the potential detrimental environmental impacts of the development, during all phases of the project life cycle. The following project phases are relevant to this project:

- Planning & Design Phase
- Pre-construction Phase
- Construction Phase
- Post-construction & Rehabilitation Phase

- Operational Phase
- Decommissioning and Closure Phase

This EMPr does not address the decommissioning and closure phases, since it is not foreseen that the farm development will be decommissioned. If Decommissioning activities ever take place, the construction phase management tables may be used to guide the activities.

7.1 CODE OF CONDUCT

During all developmental phases of this project, any person involved in this project is expected to preserve the natural environment by embracing principles of sustainable use and minimising detrimental impacts. They should be conscientious about the environmental effects of their operations on and within their working environment.

The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be borne by those responsible for harming the environment (**Polluter Pays Principle**).

8. IMPACTS OF THE PROPOSED ACTIVITY

The tables below summarise the identified environmental impacts of the proposed development and provides a comparative assessment of the most significant positive and negative implications (impacts) of the proposed project, for the different project phases.

8.1 IMPACTS ASSESSED DURING THE EIA PROCESS

An “aspect” is an element of a proposed project or activity that can interact with, or change the environment, i.e. that can have a negative or positive impact on the environment. An “aspect” is therefore the cause (or source), and an impact the “effect” on the environment.

The following key aspects and impacts were identified during the Scoping Phase, and were assessed for the different project phases during the impact assessment phase:

- Impacts on terrestrial vegetation and ecological connectivity associated with the clearing of land and establishing of cultivation areas.
- Impacts on the aquatic environment, associated with the clearing of land and establishing of cultivation areas and a farm road due to – the loss of aquatic biodiversity, water quality impacts, and flow modification.
- Impacts on terrestrial vegetation and ecological connectivity associated with the clearing of land and establishing of cultivation areas.
- Impact on agricultural resources.
- Climate change related impacts.
- Socio-economic impacts.
- Impacts on heritage resources.

8.2 COMPARATIVE ASSESSMENT OF ALL IMPACTS FOR ALL PHASES

The table below summarises the identified environmental impacts and provide a comparative assessment of the most significant positive and negative implications (impacts) of the proposed project, for all the relevant project phases.

Table 3: Comparative Assessment of Potential Impacts for all Project Phases.

POTENTIAL ENVIRONMENTAL IMPACT	Preferred Alternative		No-go alternative	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
1. Potential Impacts on Terrestrial Vegetation and Biodiversity (See section 7.8.1 for more detail)				
PLANNING & DESIGN, PRE-CONSTRUCTION AND CONSTRUCTION PHASES				
Loss of pristine and semi-intact Robertson Karoo vegetation (LT) (± 26 ha) and Breede Sand Fynbos (CR) (± 40 ha).	**Medium-High (-)**	**Medium Low (-)**	**N/A**	**N/A**
POST-CONSTRUCTION AND OPERATIONAL PHASES				
Loss of habitat within the development footprint will reduce ecological connectivity.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
2. Potential Impacts on the Aquatic Environment (See section 7.8.2 for more detail)				
PLANNING & DESIGN, PRE-CONSTRUCTION AND CONSTRUCTION PHASES				
Loss of aquatic habitat within some of the ephemeral drainage lines in cultivation areas.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
POST-CONSTRUCTION AND OPERATIONAL PHASES				
Change to runoff characteristics and quality, as well as erosion and alien vegetation invasion.	**Low (-)**	**Very Low (-)**	**N/A**	**N/A**
3. Climate Change Related Impacts - Vulnerability and Adaptation – (See section 7.8.3 for more detail)				
PLANNING & DESIGN, PRE-CONSTRUCTION AND CONSTRUCTION PHASES				
Impact of **higher temperatures** on wine grape establishment.	**Low (-)**	**Very Low (-)**	**N/A**	**N/A**
Decreased winter rainfall and **frequent droughts**.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
Heavy rainfall events and **flooding.**	**Medium (-)**	**Low (-)**		
POST-CONSTRUCTION AND OPERATIONAL PHASES				
Impact of **higher temperatures** on wine grape quality and production.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
Increased prevalence and damage of **pests and diseases.**	**Low (-)**	**Very Low (-)**	**N/A**	**N/A**
Decreased winter rainfall and **frequent droughts**.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
Increased occurrence of **veld fires.**	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
Heavy rainfall events and **flooding**.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**
4. Climate Change Mitigation – (See section 7.8.4 for more detail)				
PLANNING & DESIGN, PRE-CONSTRUCTION AND CONSTRUCTION PHASES				
GHG emissions from vehicles.	**Low (-)**	**Very Low (-)**	**N/A**	**N/A**
POST-CONSTRUCTION AND OPERATIONAL PHASES				
GHG emissions from sources.	**Low (-)**	**Very Low (-)**	**N/A**	**N/A**
5. Impacts on Cultural and Heritage Resources (See section 7.8.5 for more detail)				
ALL PHASES				
It is unlikely that the proposed project will have impacts on cultural and heritage resources (which in this context entail archaeological heritage, cultural landscape, and palaeontological resources).	**Low (-)**	**Very Low (-)**	**N/A**	**N/A**
6. Socio-economic impacts (See section 7.8.6 for more detail)				
PLANNING & DESIGN, PRE-CONSTRUCTION AND CONSTRUCTION PHASES				
Limited employment created during the site clearance and construction phase of the development.	**Very Low (+)**	**Low (+)**	**Low (-)**	**Low (-)**

POTENTIAL ENVIRONMENTAL IMPACT	Preferred Alternative		No-go alternative	
	Significance without Mitigation	Significance with Mitigation	Significance without Mitigation	Significance with Mitigation
POST-CONSTRUCTION AND OPERATIONAL PHASES				
The enhanced securing of employment opportunities through the continuation of agricultural activities.	**Very Low (+)**	**Low (+)**	**Low (-)**	**Low (-)**
7. Potential Faunal Impacts (See section 7.8.7 for more detail)				
ALL PHASES				
Disturbance of animals on site.	**Medium (-)**	**Low (-)**	**N/A**	**N/A**

It is concluded that the main impacts associated with the **site clearance and construction phase** of the proposed farm development, **with implementation of the proposed mitigation measures**, are:

- **Positive impacts (benefits) for the Preferred Alternative:**
  - Limited **employment** will be created during the site clearance and construction phase of the development.
  - Impact of implementing physical and chemical management actions to increase the Soil Suitability Index (SSI) of the soil, thereby **increasing the soil's agricultural potential and unlocking it for agricultural production**; and
- **Negative impacts for the Preferred Alternative:**
  - The impact of the physical transformation of **natural vegetation and loss of terrestrial biodiversity** will be **Medium-Low negative.** The loss of pristine and semi-intact, Robertson Karoo (LT) and Breede Sand Fynbos vegetation (CR). This loss of vegetation was mitigated in the Scoping Phase of this EIA process by reducing the extent of the proposed cleared areas, and by excluding all SoCC form the layout.
  - The disturbance to and loss of the **aquatic ecology** of the unnamed ephemeral tributaries on site will have a **Low negative** impact, after mitigation.

It is furthermore concluded that the main impacts associated with the **operational phase** of the proposed farm development, **with implementation of the proposed mitigation measures**, are:

- **Positive impacts (benefits) for the Preferred Alternative:**
  - The **enhanced securing of employment** opportunities through the availability of irrigation water to improve product yield, will result in a positive impact.
  - The **continuation and expansion of agricultural activities** on an already functioning farm.
- **Negative impacts for the Preferred Alternative:**
  - The permanent **loss of habitat** within the development footprint will result in loss of ecological connectivity with natural areas to the north and south of the site. This impact is expected to be **low negative** after mitigation.
  - The impact on the **aquatic ecology** on and around the site during farm operation is expected to be **low negative**.

9. ENVIRONMENTAL IMPACT MANAGEMENT

Environmental impact management measures refer to strategies and actions implemented to identify, mitigate, and monitor the potential adverse effects of human activities on the environment. These measures aim to minimise or prevent negative impacts on ecosystems, natural resources, and overall environmental quality.

9.1 GENERAL ENVIRONMENTAL IMPACT MANAGEMENT: ALL PROJECT PHASES

The following general management measures are intended to protect environmental resources from pollution and degradation during **all phases** of the project life cycle, and should be implemented as and where applicable, reasonable and practicable.

9.1.1 Job Creation

Potential Impact to Avoid	Allocating construction and maintenance jobs to foreigners and non-locals and negatively impacting on local Socio-economic conditions.	
Impact Management Objective	Employ as many people from the local community as possible during construction and maintenance activities.	
Impact Management Outcome	Construction and Maintenance job opportunities for people living in and around Worcester and Robertson towns, to uplift the community.	
Mitigation Measures		For Monitoring Purposes
1. The criteria for and selection of labourers for the project should demonstrate preference for the local communities. Such requirements should be included in contract documents, if applicable.		
2. Residents from the surrounding communities should be employed where unskilled labour is required, during the construction phase as and where possible.		
Frequency / Time period	Continuously throughout the duration of the project.	
Responsible Party / Person	Contractor	

9.1.2 Fire Prevention and Emergencies

Potential Impact to Avoid	Ineffective response to unplanned fires and emergencies.	
Impact Management Objective	• To prevent damage to infrastructure and crops due to uncontrolled fires. • To prevent injuries due to uncontrolled fires. • To act accordingly during an emergency situation or incident.	
Impact Management Outcome	No uncontrolled fires on site and no emergency incidents that are ineffectively responded to.	
Mitigation Measures		For Monitoring Purposes
1. Construction personnel shall be made aware of the health risks associated with any hazardous substances used (e.g., smoking near refuelling depots) and shall be provided with appropriate protective clothing / equipment in case of spillages or accidents.		
2. The outbreak of an uncontrolled fire shall be reported to the farm manager / contractor after immediately taking the necessary steps to control and extinguish the fire.		

3. Smoking shall be prohibited in the vicinity of flammable substances and may only take place at designated smoking areas, and cigarette butts must be disposed of in lidded bins.	
4. Open fires for heating and cooking should not be permitted on site.	
5. The contractor shall ensure that fire-fighting equipment is available on site, in particular where flammable substances are being stored or used. Ensure that a working fire extinguisher is immediately at hand if any "HOT WORK" is undertaken e.g. welding, grinding, gas cutting etc.	
6. Any welding or other sources of heating of materials shall be done in a controlled environment and under appropriate supervision, in such a manner as to minimise the risk of fires and/or injury to staff.	
7. Ensure that all personnel are aware of emergency reporting procedures and their responsibilities.	
8. Any emergency incident, originating at the proposed facility, which falls within the definition of section 30 (l) (a) of the NEMA must be dealt with by the facility in accordance with section 30 of the NEMA. In the event of any incident, the facility must ensure containment of the spill or hazard, by the responsible person, and notify the Pollution Information and Chemicals Management Section of the Department at 021 483 2760 / 4099 immediately after the situation is under control.	
Frequency / Time period	All Phases
Responsible Party / Person	Farm Manager / Contractor

9.2 ENVIRONMENTAL IMPACT MANAGEMENT: PLANNING AND DESIGN PHASE

While the planning and design phase itself does not yield direct environmental impacts, suboptimal planning or inappropriate design choices during this stage may lead to environmental consequences emerging in subsequent project phases.

Thorough planning is crucial to guarantee sufficient provisions for implementing the environmental requirements outlined in this EMPr. It is also necessary to ensure compliance with any additional conditions specified in the Environmental Authorisation.

9.2.1 Site Layout Plan Compliance

Potential Impact to Avoid	Substantial deviation from the site layout plan may result in non-compliance with the Environmental Authorisation during construction, and the triggering of additional listed activities, which in turn could lead to new impacts not previously assessed.	
Impact Management Objective	The site layout plan adheres to the recommendations in the EIA Report and conditions included in the Environmental Authorisation.	
Impact Management Outcome	There are no additional environmental impacts or listed activities triggered, and the proposed layout is adhered to.	
Mitigation Measures		For Monitoring Purposes
1. The final detailed design and layout plan must adhere to the conceptual layout assessed in the EIA process, and with the conditions of the Environmental Authorisation.		
2. If the final detailed layout plan varies significantly from the one evaluated in the EIA Report, an Environmental Consultant must assess the revised layout. Subsequently, the Competent Authority should amend the Environmental Authorisation before commencement of any activities.		

Frequency / Time period	Planning and Design Phase
Responsible Party / Person	EA Holder / Farm manager

9.2.2 Climate Change Vulnerability and Adaptation

Potential Impact to Avoid	Climate change vulnerability: Higher temperatures, more frequent heavy rainfall events and floods, and more frequent droughts.	
Impact Management Objective	Limit negative impacts of climate change during construction and operational phase.	
Impact Management Outcome	Optimal agricultural activities (establishment and yield) despite potential negative impacts due to climate change.	
Mitigation Measures		For Monitoring Purposes
1. Best cultivar and forage crop selection to best resist climate challenges.		
2. Effective stormwater runoff design to manage potential flooding and prevent erosion due to excessive stormwater flow.		
3. Effective irrigation management and availability.		
4. Fire prevention control measures in place.		
Frequency / Time period	Planning and Design Phase	
Responsible Party / Person	EA Holder / Farm manager	

9.3 ENVIRONMENTAL IMPACT MANAGEMENT: PRE-CONSTRUCTION PHASE

Effective preparation during the pre-construction phase lays the groundwork for sound environmental management during the subsequent construction phase. This proactive approach helps prevent potential impacts from emerging in future.

9.3.1 Site Demarcation

Before commencement of any construction activities, the development areas must be clearly identified, and all no-go areas and buffer areas demarcated. All tributaries identified to be excluded from the development footprint, must be clearly demarcated, buffered and treated as no-go areas.

Furthermore, the relevant cultivation areas must be demarcated (using appropriate high visibility markers, such as danger tape or wooden droppers with white tips, small flags, or other marking techniques) according to the co-ordinates of the Geo-reference Map (**Figure B**).

Potential Impact to Avoid	Degradation and disturbance of the no-go and buffer areas during site-clearance or construction.	
Impact Management Objective	Identify and demarcate no-go areas and working areas.	
Impact Management Outcome	Sensitive no-go areas will be left undisturbed with no environmental degradation taking place.	
Mitigation Measures		For Monitoring Purposes
1. Cultivation areas must be clearly demarcated before vegetation clearance takes place.		
2. No-go areas and buffer areas along the relevant watercourses must be clearly demarcated prior to the commencement of any vegetation clearing and construction activities. A buffer area of 15 m must be implemented for the significant drainage lines.		

3. A 20 m buffer for the wetland area at Cultivation Area 3 must be implemented.	
4. The contractor's camp (if relevant) must be located as far away from the no-go areas as possible.	
Frequency / Time period	Pre-construction Phase – prior to clearance of vegetation and construction equipment arrives on site.
Responsible Party / Person	EA Holder / Farm manager

9.3.2 Contractor's Camp and Facilities

As this project is a farm development that entails the establishment of cultivation areas, which will mostly be conducted by farm employees, it is unlikely that external contractors will be employed for construction activities. If, however, external contractors are employed to perform some of the activities, the following mitigation measures will be of relevance:

Potential Impact to Avoid	• Pollution of surrounding soil, water resources and/or air. • Visual disturbance to surrounding residents.
Impact Management Objective	To set up and equip the contractor's camp in a manner that will promote good environmental management.
Impact Management Outcome	The contractor's camp does not negatively impact on the environment.

Mitigation Measures	For Monitoring Purposes
1. The locality of the camp must be in an area which will have the least disturbance to the surrounding environment, and outside of aquatic features.	
2. Adequate signage must be displayed to designate the site office / camp as a restricted area to non-personnel.	
3. Bins for the temporary storage of construction related waste must be provided inside the site camp.	
4. One chemical toilet for every 15 male workers and 2 chemical toilets for every 10 female workers must be provided. All construction workers will be required to use the chemical toilet(s).	
5. All temporary/portable toilets should be secured to the ground to the satisfaction of the ECO to prevent them from toppling due to wind or any other cause.	
6. The chemical toilets shall be properly maintained and cleaned on a regular basis (at least once a week). Sewage from the chemical toilets must be disposed of at a suitably licensed sewage disposal facility.	
7. Water for drinking purposes shall be obtained from a sustainable source.	
8. Burying of any materials on site shall not be allowed.	
9. The site camp and related site camp facilities must be kept neat and orderly at all times, in order to prevent potential safety risks and to reduce the visual impact of the site during construction.	
10. Any temporary storage areas for potentially contaminating materials shall be roofed with impervious material. The ingress of wind-blown rain should be avoided by sufficient roof overhang or sides of sufficient height.	
11. Stormwater shall be diverted around any temporary storage area(s).	
12. Hazard signs indicating the nature of stored materials should be displayed on the temporary storage facility or container, if such a facility is provided.	
13. Any fuel storage facilities (including any tanks) should be surrounded by a bund wall, to ensure that accidental spillage does not pollute local soil or water resources.	

Alternatively, if storage areas / containers are not provided, all potentially polluting materials are to be stored on drip trays.	
14. The Contractor should indicate the emergency procedures in the event of misuse or spillage that may negatively affect an individual or the environment in a Method Statement.	
15. An inventory of any hazardous chemicals/substances (including that within equipment), along with a description of possible ill effects and treatment of health-related afflictions resulting from accidents, should be kept in the storage area as well as by the appropriate manager. Such documents are known as Material Safety Data Sheets.	
Frequency / Time period	Pre-construction Phase – before construction activities commence.
Responsible Party / Person	Contractor / Farm Manager / EA Holder

9.3.3 Environmental Awareness Plan

Potential Impact to Avoid	Environmental degradation and pollution.
Impact Management Objective	To ensure contractors and staff are aware of the required management measures stipulated in the EMPr and to encourage environmental awareness by presenting the Environmental Awareness Plan.
Impact Management Outcome	All farm employees, contractors and/or staff are environmentally aware, enthusiastic about working in a responsible manner, and not cause any detrimental environmental impacts.
Mitigation Measures	For Monitoring Purposes
1. Present Environmental Awareness Plan and induct personnel on Environmental Matters during "toolbox" talks.	
2. This EMPr must form part of the contractual agreements with the specific contractors.	
3. Keep proof of attendance on file.	
Frequency / Time period	Pre-construction Phase – before construction activities commence or when new personnel start working on site
Responsible Party / Person	Farm Manager / Contractor and ECO

9.4 ENVIRONMENTAL IMPACT MANAGEMENT: CONSTRUCTION PHASE

Potential impacts that may arise due to the implementation of the construction phase have been identified and assessed during the EIA Process. Environmental Management objectives and outcomes that will prevent the identified potential impacts from occurring – or where avoidance is not possible, that will minimise and mitigate the impacts – are provided in this section.

9.4.1 Site Access and Traffic Management

Potential Impact to Avoid	Construction traffic may cause hinderance to near-by road users and residents.
Impact Management Objective	To manage construction traffic to not negatively influence surrounding road traffic and residents.
Impact Management Outcome	The surrounding roads and areas do not experience adverse traffic-related impacts.

Mitigation Measures	For Monitoring Purposes
1. Access to the farm sites must be limited to existing roads only, and no new access roads may be established.	
2. The Contractor (where applicable) shall strictly control the movement of all construction vehicles and plant including that of his suppliers so that they remain on designated routes and are distributed so as not to cause a traffic hinderance.	
3. Usage of public roads shall be restricted to normal working hours.	
4. Appropriate traffic warning signs shall be maintained where needed.	
5. Sand and other construction materials that are accidentally deposited on public roads must be cleared up immediately.	
6. Strictly enforce speed limits on construction vehicles and other heavy vehicles.	
Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.2 Construction Activities within/close to Aquatic Features

Potential Impact to Avoid	Disturbance to and loss of aquatic biodiversity - this impact will be limited to possible flow modification and the sporadic moments that flow occur within the streams. This will largely impact on downstream areas that would be dependent on such flow.
Impact Management Objective	Responsible construction activities that take the watercourses and buffer areas into account.
Impact Management Outcome	• Minimal disturbance to aquatic biodiversity. • Enhanced flow modification in certain areas and no negative impacts in others. • No pollution of surface water or ground water resources may occur due to any activity on the site. • Reduced erosion.

Mitigation Measures	For Monitoring Purposes
1. Establish the no-go aquatic buffer zone as explained under paragraph 9.3.1 of this EMPr.	
2. Construction workers and vehicles must be prevented from entering the watercourses.	
3. Construction activities should take place during the dryer months, if possible.	
4. No waste or foreign material may be dumped into any water features.	
5. Tools, clothing or other materials may not be cleaned in the streams.	
6. Rocks and vegetation debris should not be dumped onto natural vegetation or within any watercourses. (Not to be confused with the erosion ditches that need to be rehabilitated.)	
7. No stockpiles are to be located within 50 metres of a watercourse and erosion control measures may be required around stockpiles.	
8. Effective sediment traps should be installed where necessary to prevent runoff from the construction or development areas into the watercourse, where necessary.	
9. Mixing of mortar and concrete (if relevant) should take place on an impermeable substratum such as shutter ply, not plastic sheeting that can tear.	
10. Cement effluent will not be allowed to flow into the natural environment. Alternatively, a large plastic container should be used to contain cement residues and the contents, when dry, can be disposed of at a landfill site.	

Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.3 Construction Activities close to Areas containing Indigenous Vegetation

Potential Impact to Avoid	Disturbance to and loss of terrestrial biodiversity – Faunal and floral impacts.	
Impact Management Objective	Responsible construction activities that take the adjacent natural indigenous vegetation into account.	
Impact Management Outcome	No disturbance to terrestrial biodiversity outside of the designated development areas.	
Mitigation Measures		For Monitoring Purposes
1. Natural connectivity should be maintained between the steep hills, vegetation patches containing significant colonies of plant SoCC, as well as pristine natural Breede Sand Fynbos areas on the farm.		
2. Rocks and vegetation debris should not be dumped onto natural vegetation outside of the proposed development footprint areas or within any watercourses.		
3. Areas compacted by vehicles during construction shall be scarified or ripped, if necessary, to allow penetration of plant roots and the re-growth of vegetation if outside the boundaries of the site footprint.		
4. All personnel and vehicles used for transportation and/or construction purposes should remain within the demarcated routes and areas, i.e., vehicles should not be allowed to drive randomly across the property but should remain within the approved routes.		
Frequency / Time period	Construction Phase	
Responsible Party / Person	Farm Manager / Contractor	

9.4.4 Hydrocarbon Management

Potential Impact to Avoid	Environmental pollution due to flawed hydrocarbon management.	
Impact Management Objective	To ensure that hydrocarbons and other hazardous materials are managed during the construction phase as to not be the cause of environmental pollution.	
Impact Management Outcome	No pollutants come in contact with any natural resources.	
Mitigation Measures		For Monitoring Purposes
1. All vehicles, equipment, fuel and petroleum services must be maintained in a good condition to prevent leakages and potential contamination of soil.		
2. Runoff from fuel depots/bousers, workshops and truck washing areas shall be routed through an oil trap equipped with oil recovery equipment. The remaining water will be discharged, through a sediment trap.		
3. All hydrocarbon spills are to be addressed immediately to prevent seeping into the ground.		
4. Any emergency servicing of construction machinery is to be done over drip trays. In addition, fuel-driven generators are to be placed on drip trays.		
5. Drip trays shall be inspected and emptied daily. In particular drip trays shall be closely monitored during rain events to ensure that they do not overflow. Drip trays shall be leak-free.		

6. The Farm Manager / Contractor shall maintain a used oil storage container into which used oils must be poured, with a funnel, and disposed of at a used oil company.	
Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.5 Waste Management

Potential Impact to Avoid	Pollution of the surrounding environment due to improper waste management practices.
Impact Management Objective	Prevent pollution due to improper waste materials handling and use.
Impact Management Outcome	No pollutants to degrade the environment.
Mitigation Measures	For Monitoring Purposes
1. It is advisable to implement an on-site integrated waste management system, grounded in the principles of waste minimisation. This system should encompass practices of reduction, recycling, re-use, and appropriate disposal as necessary. Therefore, separate waste bins/skips that are weather and animal proof must be provided for recyclable waste, general waste and hazardous waste.	
2. Any temporary storage areas for potentially contaminating materials shall be roofed with impervious material. The ingress of wind-blown rain should be avoided by sufficient roof overhang or sides of sufficient height.	
3. No littering shall be allowed.	
4. Burying or burning of any materials on site shall not be allowed.	
5. Used oil, lubricants and cleaning materials from the maintenance of vehicles and machinery shall be collected in a holding tank and returned to the supplier. Alternatively, oils collected in this manner shall be retained in a safe holding tank and removed from site by a specialist oil recycling company for disposal at an approved hazardous waste disposal site, e.g. Oilkol or The R.O.S.E Foundation.	
6. Other hazardous waste shall be disposed of at a licensed hazardous landfill, or through a registered hazardous waste management company.	
7. Green waste may be stockpiled on the ground, or in separate skips until removal, or until it is burnt on site. If the bins/skips are to be emptied, the waste must be taken to a registered recycling / waste facility.	
8. Non-recyclable and non-reusable waste (e.g. builder's rubble, etc.) generated on site must be disposed of at a landfill site licensed in terms of the applicable legislation.	
Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.6 Stormwater Management and Erosion Control

Potential Impact to Avoid	• Soil erosion and increased sedimentation load in the watercourses due to ineffective stormwater management. • Damage and infilling of the Le Chasseur & Goree Irrigation Canal that crosses Uitnood Farm due to erosion and soil runoff.
Impact Management Objective	To prevent soil loss on site that will lead to sediment load in the watercourse and the irrigation canal.
Impact Management Outcome	Soil erosion on the farm is minimal and watercourses and the irrigation canal are not impacted on as a result of sedimentation and erosion.

Mitigation Measures	For Monitoring Purposes
1. Effective measures should be implemented to prevent/manage soil erosion at watercourse crossings and along steep hills.	
2. The Stormwater Management Plan (**Addendum F**) must be implemented.	
3. The Le Chasseur & Goree Irrigation Canal that crosses Uitnood Farm must be protected from soil runoff and erosion damage. Stormwater runoff overpass chutes must be constructed at intervals of ± 200 m along the southern edge of Cultivation Area 2. Contours furrows must be constructed to direct runoff to these furrow points. These should be sufficient to accommodate a major storm event.	
4. Stockpiles of topsoil and spoil material must be protected from wind and water erosion (e.g. it must be covered, or erosion channels around them, or compacted, etc.).	
Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.7 Climate Change Mitigation

Potential Impact to Avoid	Contributing to Greenhouse Gas (GHG) emissions during the construction phase of the project.
Impact Management Objective	Ensure optimal energy efficiency and limit emissions from construction vehicles.
Impact Management Outcome	Limit construction phase GHG emissions.

Mitigation Measures	For Monitoring Purposes
1. Optimise the loading and routing of trucks and other vehicles and adjust truck engines to ensure optimal energy/diesel efficiency.	
2. Prioritise technology alternatives that optimise energy saving where possible for the construction phase of the development.	
Frequency / Time period	Construction Phase
Responsible Party / Person	Contractor

9.4.8 Climate Change Adaptation

Potential Impact to Avoid	Negative impacts due to climate change.
Impact Management Objective	Limit negative impacts of climate change during vineyard and crop establishment.
Impact Management Outcome	• Limit negative impacts due to climate change. • Optimal cultivation area establishment despite negative impacts of climate change.

Mitigation Measures	For Monitoring Purposes
1. Any temporary plant material stockpiled on site should be placed as far as possible away from the surrounding natural areas and should be limited in size as and where possible, to reduce the potential fire risk.	
2. During site preparation, the Applicant should remove and mulch the large shrubs and plough it into the soil together with the smaller shrubs and grass. This will assist in protecting the soil from wind and water erosion, reduces moisture loss, and adds organic matter to the soil.	

3. Effective and precision water management during vineyard establishment must be implemented to contribute towards its survival during warm and dry periods. Farming practices should focus on conserving soil moisture, for example, maintaining a continuous organic soil cover.	
4. Monitor soil moisture accurately and adjust irrigation regime to prevent over irrigation.	
5. Improvements in monitoring and flood early- warning systems are required as well as access to support for disaster relief following a flooding event.	
6. Erosion and stormwater runoff management and control measures must be implemented where necessary, especially on steeper areas. The Stormwater Management Plan (**Addendum F**) must be implemented.	
7. Effective fire prevention and management measures must be followed (refer to **paragraph 9.1.2** above).	
Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.9 Dust Management

Potential Impact to Avoid	Dust generation that disrupts or inconveniences surrounding farms and/or residents.	
Impact Management Objective	To reduce the generation of dust during construction activities that may cause a hinderance to surrounding residents and road users, and also settle on crops.	
Impact Management Outcome	Dust generation is sufficiently limited, and does not cause hindrance to surrounding farmers or crops.	
Mitigation Measures		For Monitoring Purposes
1. If any areas are cleared or disturbed, these areas should be kept wet with water or soil-binders if necessary to reduce dust. The use of straw worked into the sandy areas may also help and the ECO must advise when this is necessary.		
2. Avoid engaging in clearance, handling activities, or transporting erodible materials during the hottest, driest, and windiest months of the year.		
3. The removal of covering vegetation shall be avoided until such time as soil stripping is required and similarly exposed surfaces should be stabilised as soon as is practically possible.		
4. Cleared areas should be provided with a suitable cover as soon as possible, and not left exposed for extended periods of time.		
5. The location of stockpiles must take into account the prevailing wind direction and should be situated so as to have the least possible dust impact to surrounding residents, road-users and other land-users.		
6. Speed limits must be enforced in all areas, including public roads and private property to limit the levels of dust pollution. The speed limit should be set at 20-40 km/h.		
Frequency / Time period	Construction Phase	
Responsible Party / Person	Farm Manager / Contractor	

9.4.10 Faunal Management

Potential Impact to Avoid	Disturbance of sensitive terrestrial faunal species.
Impact Management Objective	Responsible construction activities to reduce harm and disturbance to any faunal species on site.
Impact Management Outcome	No harm or minimal disturbance to faunal species on site.

Mitigation Measures	For Monitoring Purposes
1. Any animals encountered during the construction activities should be left unharmed and if necessary, relocated or just allowed to move to adjacent natural areas (e.g., tortoises, snakes, mice, lizards, etc.).	
2. Competent snake handlers must be contacted to move snakes, when necessary.	
3. All construction vehicles should adhere to a low-speed limit (40 km/h for cars and 30 km/h for trucks) to avoid collisions with susceptible species such as snakes and tortoises and rabbits or hares.	
4. All personnel must undergo environmental induction with regards to fauna and in particular awareness about not harming or collecting species such as snakes, tortoises and owls, which are often persecuted out of superstition.	
5. Site screening for nests must be conducted before construction commences. Special attention must be given to two specific bird species, namely *Circus maurus (*black harriers) and *Neotis denhami* (Denham's bustard).	
6. All open trenches on site must be covered or enclosed to prevent trapping animals.	

Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.4.11 Heritage Resources

Potential Impact to Avoid	Disturbance to heritage resources.
Impact Management Objective	To notify Heritage Western Cape (HWC) of any heritage finds and stop construction work near these finds.
Impact Management Outcome	No disturbance to or loss of heritage resources.

Mitigation Measures	For Monitoring Purposes
1. Should any archaeological deposits or remains be uncovered during activities on site, work must stop immediately, and Heritage Western Cape (HWC) be informed.	
2. The HWC Fossil Chance Find Protocol (**Addendum E**) must be implemented for any excavation activities taking place on the application area.	
3. If any unmarked graves, buried archaeological material or fossil material are uncovered or exposed during bulk earthworks, these must immediately be reported to HWC (Tel: 021 483 9685).	

Frequency / Time period	Construction Phase
Responsible Party / Person	Farm Manager / Contractor

9.5 ENVIRONMENTAL IMPACT MANAGEMENT: POST-CONSTRUCTION & OPERATIONAL PHASE

Once construction activities end, it is essential to remove all construction-related equipment, materials, facilities, and waste from the sites. Furthermore, all surfaces that have been disturbed, including the areas around structures and those used for site facilities, must undergo clean-up and rehabilitation. Temporary

access roads that were constructed should be rehabilitated, and access must be restricted to these areas undergoing rehabilitation.

9.5.1 Rehabilitation of Disturbed Areas

Potential Impact to Avoid	Deterioration of the site after construction activities are completed.	
Impact Management Objective	To rehabilitate all areas disturbed by construction activities in an environmentally responsible manner.	
Impact Management Outcome	No construction-related disturbance to the site is visible, and all exposed surfaces are suitably stabilised.	
Mitigation Measures		For Monitoring Purposes
1. Once construction, closure or rehabilitation has been completed, all redundant infrastructure, waste and construction materials shall be removed from site and disposed of in an appropriate manner, i.e. at a registered waste site.		
2. Areas compacted by vehicles during construction shall be scarified or ripped, if necessary, to allow penetration of plant roots and the re-growth of vegetation.		
Frequency / Time period	On completion of the Construction Phase	
Responsible Party / Person	Farm Manager / Contractor	

9.5.2 Operational Activities close to Aquatic Features

Potential Impact to Avoid	Disturbance to and loss of aquatic biodiversity during operational farm activities.	
Impact Management Objective	Responsible farm operation activities that take the watercourses and buffer areas into account.	
Impact Management Outcome	• Minimal disturbance to aquatic biodiversity. • Enhanced flow modification. • No pollution of surface water or ground water resources may occur due to any activity on the site. • Reduced erosion.	
Mitigation Measures		For Monitoring Purposes
1. All future developments must fall outside the buffer zones around the aquatic features (15 m from the indicated tributaries and 20 m from the wetland in Cultivation Area 3).		
2. It is proposed that good floor management practices are followed, such as seasonal cover crops in between orchard/vineyard rows, or by mulching the ground, in order to minimise erosion and sedimentation.		
3. Drainage channels and roads must be properly maintained to prevent erosion.		
4. No pollution of surface or ground water may occur due to any activity on the property.		
5. Divert excess water from the vineyards away from the canal.		
6. Maintain the stormwater overpass chutes that crosses over the canal along the southern edge of Cultivation Area 2.		
7. Slow run-off out of the vineyards by not planting the rows downslope on steep areas. Plant along terraces in necessary		
8. Provide ground covers that break the force of raindrops before they reach the soil.		

This could be achieved through having grassed or mulched row middles and by creating vegetated buffer strips around the vineyards.	
9. Implement the Stormwater Management Plan (**Appendix F**).	
Frequency / Time period	Operational Phase
Responsible Party / Person	Farm Manager

9.5.3 Operational Activities close to / within Natural Areas

Potential Impact to Avoid	Disturbance to and loss of terrestrial biodiversity during operational farm activities.
Impact Management Objective	Responsible farm operation activities that take natural environment into account.
Impact Management Outcome	• Minimal disturbance to terrestrial biodiversity. • No pollution of surrounding natural areas. • Reduced erosion.

Mitigation Measures	For Monitoring Purposes
1. The indigenous vegetation buffer areas must be maintained, and may not be used for stockpiling or dumping of any material, informal paths or turning areas.	
2. Effective measures must be implemented to prevent the establishment of alien plant species within remaining natural areas on the property. Refer to **Appendix G** for the Best Practice for Alien Vegetation Control.	
3. Herbicides and pesticides should only be sprayed within the cultivation areas, and not in the surrounding natural areas	
4. Pastures (if applicable) must be fenced to prevent cattle drifting into the natural areas.	
5. Pesticide spraying of the cultivated areas should only be undertaken on low wind or windless days, to minimise spray drift into any adjacent natural areas.	
6. Any animals encountered during management and maintenance activities should be left unharmed and allowed to safely move to adjacent natural areas.	
7. The collection, hunting or harvesting of any plants or animals on the farms must be strictly forbidden.	

Frequency / Time period	Operational Phase
Responsible Party / Person	Farm Manager

9.5.4 Climate Change Mitigation

Potential Impact to Avoid	Contributing to Greenhouse Gas (GHG) emissions during farm operations.
Impact Management Objective	Ensure optimal energy efficiency and limit emissions from maintenance and farm vehicles.
Impact Management Outcome	Limit operation phase GHG emissions.

Mitigation Measures	For Monitoring Purposes
1. Optimise the loading and routing of trucks and other vehicles and adjust truck engines to ensure optimal energy/diesel efficiency.	
2. Prioritise technology alternatives that optimise energy saving where possible for the construction phase of the development.	
3. The use of more efficient and reduced use of nitrogen-based fertilisers.	

4. The reduction of electricity consumption through improved efficiencies and switching to renewable (non-fossil) energy sources such as wind or solar where possible.	
Frequency / Time period	Operational Phase
Responsible Party / Person	Farm Manager

9.5.5 Climate Change Adaptation

Potential Impact to Avoid	Negative impacts due to climate change.	
Impact Management Objective	Limit negative impacts of climate change during cultivation area management and operation.	
Impact Management Outcome	• Limit negative impacts due to climate change. • Optimal cultivation area operational activities despite negative impacts of climate change.	
Mitigation Measures		For Monitoring Purposes
1. Any temporary plant material stockpiled on site should be placed as far as possible away from the surrounding natural areas and should be limited in size as and where possible, to reduce the potential fire risk.		
2. Regularly check for leaks within water reticulation system to minimise water losses through pipe breakages and leaks.		
3. Effective and precision water management during cultivation operation must be practices ensuring optimal water usage, especially during warm and dry periods. Farming practices should focus on conserving soil moisture, for example, maintaining a continuous organic soil cover.		
4. Monitor soil moisture accurately and adjust irrigation regime to prevent over / under irrigation.		
5. Erosion and stormwater runoff management and control measures must be implemented continuously, especially on steeper areas.		
6. Effective fire prevention and management measures must be followed (refer to **paragraph 9.1.2** above).		
7. If controlled burns are undertaken, these burns should be managed by professional fire managers, and should be undertaken, with the necessary permits, during autumn (15 March - 15 May). The perimeter of the area to be burnt can be brush-cut before the burn, to a height of 10 – 15 cm, using brush-cutters, to create a firebreak. Please note that the firebreaks may not be scraped, as this damages the soil surface and removes vegetation.		
Frequency / Time period	Operational Phase	
Responsible Party / Person	Farm Manager / Contractor	

10. METHOD STATEMENTS

A method statement is a written submission by the Construction Contractor / Farm Manager (if applicable to the project) that contains information on how work in sensitive environments will take place. It describes the scope of the intended work, step-by-step, to understand the Construction Contractor's / Farm Manager's intentions with its activities, and to be able to assess whether or not the work proposal is in accordance with the Scope of Work and/or will produce results in accordance with the EMPr.

The Construction Contractor / Farm Manager or the EA Holder may be asked by the Competent Authority and/or the ECO to provide Method Statements for specific construction-related activities or any site

management aspect. This request may occur before the commencement of the activity or while it is in progress, particularly if the activity is leading to or has the potential for significant environmental harm or poses health and safety risks.

It is advisable for the Construction Contractor to submit the method statements **seven (7) working days before any particular construction activity is due to start.** Work may not commence until the method statement has been approved by the EA Holder and accepted by the ECO.

Approved Method Statements should be available on site and should be communicated to all relevant personnel. The EA Holder or his/her Construction Contractor / Farm Manager shall carry out the construction activities in accordance with the approved Method Statement. Approval of the Method Statement shall not absolve the Construction Contractor from any of his obligations or responsibilities in terms of the contract or the requirements of the approved EMPr.

Method Statements shall consider all environmental hazards and risks identified in the EMPr and should clearly indicate the following:

- **WHAT WORK IS TO BE UNDERTAKEN** – give a brief description of the works to be undertaken;
- **WHERE THE WORKS ARE TO BE UNDERTAKEN –** provide a description of the extension of the works and an annotated plan of the locality of work;
- **HOW THE WORKS ARE TO BE UNDERTAKEN -** a detailed description of the process of work, methods and materials to be used in the works; and
- **WHEN WILL THE WORKS TAKE PLACE** - the sequencing of actions with due commencement dates and completion date estimates.

Refer to **Addendum C** for an example template for the method statements.

The following Method Statements must be provided:

- Demarcation of No-go areas.
- Emergency spills procedures.
- Emergency fires.
- Construction of chutes over the Le Chasseur & Goree Irrigation Canal south of Cultivation Area 2.

11. RESPONSIBLE PARTIES AND CONTINUOUS MONITORING

Upon approval by the Competent Authority (DEA&DP), this EMPr must be regarded as binding to the EA Holder, and anyone acting on behalf of the EA Holder. This includes, but is not limited to agents, employees, associates, contractors, farm managers and service providers.

Section 28 of the NEMA provides for the **Duty of Care** principle which,

"…obliges every person who causes, has caused or may cause significant environmental degradation to take reasonable measures to prevent such degradation from occurring, continuing or recurring".

This principle forms the foundation of this EMPr. An effective EMPr is concerned with both the immediate outcome as well as the long-term impacts of the project. Any avoidable non-compliance with the measures contained in the EMPr could be considered by the relevant authority as sufficient grounds for the implementation of a penalty. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner in which the environment is managed and hence set penalties should be enforced.

It is therefore the responsibility of the following individuals or groups to implement the EMPr and its management conditions.

The impact and mitigation in the previous sections includes a "Responsible Party / Person" column that indicates which team member(s) are responsible for implementation of the identified mitigation measures.

11.1 RESPONSIBILITIES OF THE EA HOLDER / APPLICANT

Responsibility for the implementation of the conditions of this EMPr, as well as those contained in the EA, lies with the EA Holder (i.e., Eilandia Plase Pty (Ltd.)). This responsibility shall be delegated to contractors or farm managers for practical purposes, but the EA Holder shall remain legally responsible for the implementation of the EMPr.

Responsibilities include:

- Appointment and management of relevant third parties and/or management of internal employees conducting work related to site clearance and construction phase, management, and maintenance at the facility; and
- Overseeing the implementation of the EMPr during all construction and operational activities.
- After completion of the construction activities, ensure that a final environmental audit is undertaken by the ECO, before commencement of the operational activities, in order to determine compliance with the EMPr and the EA. The audit report should be submitted to the DEA&DP and to the Applicant, for their records.

11.2 RESPONSIBILITIES OF THE CONSTRACTOR(S)

The responsibilities of all contractor(s) involved in the construction phase, such as contractors responsible for soil preparation, include:

- If required by the ECO, provide "Method Statements" that will indicate the procedures that will be applied in order to meet the requirements of any aspect of the EMPr (see **Addendum C** for a template of a Method Statement);
- To have the EMPr and the EA available on site at all times;
- To implement all EMPr and EA mitigation measures as may be delegated to them; and
- To ensure that all problems identified during environmental inspections are addressed and rectified as soon as reasonably possible.
- The complaints register, site instruction book, method statements, and all other records related to the implementation of this EMPr must be kept together in a file at the site office or at least on the property for the duration of the construction contract period.
- To appoint a Site Agent to assist in the monitoring of the site, to assist the ECO, especially in times when the ECO cannot be on site. The Site Agent will ensure compliance with the conditions of the EA and mitigation measures in the EMPr if the ECO is not available to do so.

11.3 RESPONSIBILITIES OF THE ECO

The EA Holder must appoint a suitably qualified Environmental Control Officer (ECO) to oversee and monitor the implementation of the EMPr. The ECO must visit the construction site regularly. The mitigation measures as described in this EMPr, as well as the conditions of authorisation as described in the EA, must be monitored by the ECO.

11.3.1 Competency of the ECO

The ECO must be independent of the EA Holder / Contractor(s) and should have at least 5 years' experience as an ECO, or be supported by a qualified ECO. The ECO must have knowledge on the background of the project and work in close co-operation with the Contractor / Farm Manager.

11.3.2 ECO's Duties

The ECO's duties must include, amongst others:

- Present a pre-construction environmental site induction session to all personnel before work on site commences.
- Oversee the correct demarcation of areas and/or no-go/sensitive areas for construction activities and/or avoidance before commencement of vegetation clearing or construction activities.
- Identify non-compliances and problem areas timeously to avoid costly stoppages and / or further environmental damage.
- Ensure that open communication lines exist for the reporting of any significant environmental incidents to the DEA&DP and to attend to any problems or complaints from the public rapidly.
- Propose changes (for approval) to the EMPr as/if necessary, and advise that the EMPr be updated if required.
- Monitor the implementation of the EMPr and ensure adherence to all mitigation measures contained in the EMPr.
- In an event where there is a transgression or non-compliance with any condition contained in the EMPr which may result in a significant threat to, or impact on the environment, the ECO has the authority to stop works. Reasons should be provided for the work stoppage. The ECO has the authority to request the relevant Competent Authority to issue a fine or penalty.

If the Applicant, contractor or employee(s) do not show adequate consideration for the environmental aspects of the site preparation and construction phase activities, they may be suspended from continuing with the activity by the ECO until the matter is resolved.

The ECO will not be held liable in any manner for any contravention, by the Applicant or contractors, of any conditions of the EMPr.

11.3.3 ECO Checklists / Compliance-Monitoring Reports

- The ECO must keep records of all site activities that may pertain to the environment and compile compliance-monitoring reports / checklists (ECO Reports). These ECO Reports will inform on the compliance of the pre-construction - and construction phase activities to the mitigation measures contained in the EMPr, as well as the conditions of approval included in the EA.
- The ECO Reports must be submitted to the EA Holder, Contractors or Farm Manager within five (5) working days of the ECO site inspection and should also be made available to the relevant Competent Authority where required. (It is proposed that the report be submitted to DEA&DP on a **monthly** basis.)
- The ECO must submit a **final post-construction inspection report**, within 6 months of completion of the construction phase. This report must detail the rehabilitation measures undertaken, describe all major incidents or issues of non-compliance and any issues or aspects that require attention or follow-up. This final report must be submitted to the Competent Authority (DEA&DP) within 7 days of finishing the report.

- Copies of the ECO Reports must be kept on site. Any non-compliances noted by the ECO should be rectified and "closed-out" by the relevant responsible party, as stipulated in the ECO Reports.

11.3.4 Frequency of ECO Site Visits

The ECO must undertake **monthly site visits when construction activities are taking place**, in addition to the initial pre-construction and closure inspections.

11.3.5 Photographic Record

It is recommended that the Applicant and ECO take photographs of the site prior to, during and immediately after the construction phase as a visual record. It is also recommended that the ECO take photographs to supplement the Monthly ECO Inspection Checklists.

12. ENVIRONMENTAL AUDITING

In terms of regulation 34 of the EIA Regulations, 2014 the holder must conduct **environmental audits** to determine compliance with the conditions of the EA and the EMPr and submit the Environmental Audit Report to the Competent Authority upon receiving such request in writing from the Competent Authority or within 6 weeks after completion of the construction activities (when the cultivation areas have been established). The **Audit Report** must be prepared by an **independent person** and must consider all the information required in Appendix 7 of the EIA Regulations, 2014.

The objectives of the environmental audit report, as per Regulation 34 and Appendix 7 of the EIA Regulations, 2014, is to:

a) report on-
  (i) the level of compliance with the conditions of the environmental authorisation and the EMPr, and where applicable, the closure plan; and
  (ii) the extent to which the avoidance, management and mitigation measures provided for in the EMPr, and where applicable, the closure plan achieves the objectives and outcomes of the EMPr, and closure plan.
b) identify and assess any new impacts and risks as a result of undertaking the activity;
c) evaluate the effectiveness of the EMPr, and where applicable, the closure plan;
d) identify shortcomings in the EMPr, and where applicable, the closure plan; and
e) identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr, and where applicable, the closure plan.

13. ENVIRONMMENTAL AWARENESS AND RISK INDUCTION

The ECO must convey the importance and implications of the EA and this EMPr to all construction workers and staff to work on site, and to familiarise them with the environmental aspects of the contract. Staff must fill in an attendance register after attending an environmental induction session.

As part of the induction programme, all staff shall be educated as to the need to refrain from destruction of animals and plants, as well as from indiscriminate defecation, waste disposal and/or pollution of local soil and water resources. Immediate and decisive action should be taken should this occur.

Where possible, the presentation needs to be conducted in the language of the employees / contractors. The environmental induction training should, as a minimum, include the following:

- Sensitive and no-go areas on site;
- The importance of conformance with the EMPr;

- The significant environmental impacts, actual or potential, of their work activities;
- The environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the EMPr, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures;
- The mitigation measures required to be implemented when carrying out their work activities.

14. CONCLUSION

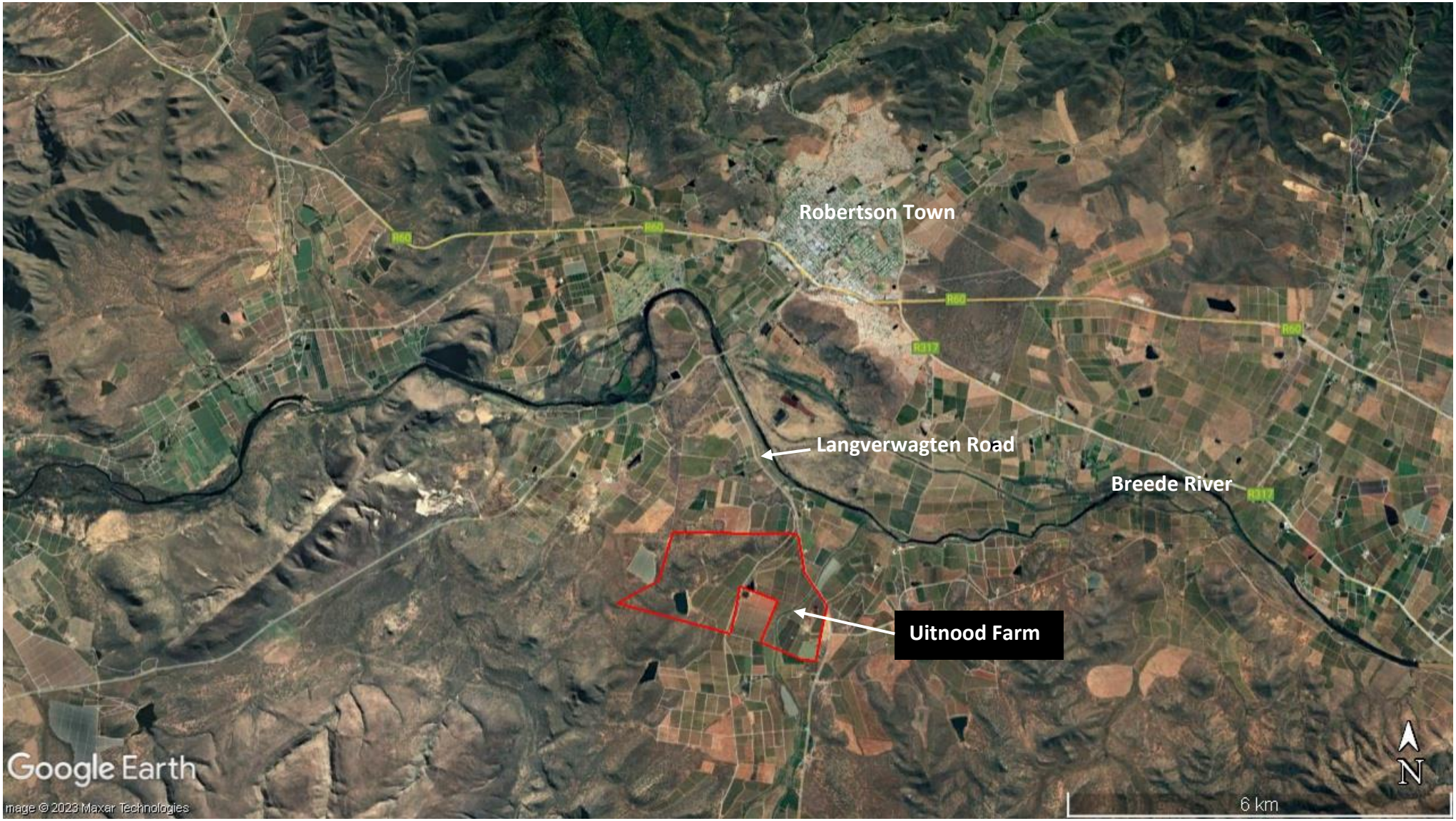
It is anticipated that if the recommendations of this EMPr are implemented as described and the participating parties adhere to the various mitigatory measures, the project be completed without causing adverse environmental impacts.

Contractors and other individuals engaged in this project can contribute to achieving "environmental best-practice" and ensuring a sustainable outcome by being familiar with the contents of this EMPr.

NON-COMPLIANCE WITH A CONDITION OF THE ENVIRONMENTAL AUTHORISATION OR WITH THIS EMPr MAY RESULT IN SUSPENSION OF THE ENVIRONMENTAL AUTHORISATION OR THIS EMPr AND MAY RENDER THE HOLDER LIABLE FOR CRIMINAL PROSECUTION.

FIGURE A

LOCALITY MAP OF UITNOOD FARM



LOCALITY MAP

Portion 38 Farm Uitnood No. 129, Robertson, Western Cape Province

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FIGURE B

GEO-REFERENCE MAP INDICATING THE SITE LAYOUT PLAN FOR ALL PROPOSED ACTIVITIES AND CONSTRAINTS AT UITNOOD FARM

Cultivation Area 1a		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
1	33°51'2.88"S	19°51'22.28"E
2	33°51'8.52"S	19°51'27.96"E
3	33°51'7.66"S	19°51'31.32"E
4	33°51'13.49"S	19°51'40.61"E
5	33°51'7.85"S	19°51'49.64"E
6	33°51'2.70"S	19°52'36.94"E
Cultivation Area 1b		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
7	33°51'11.25"S	19°52'5.94"E
8	33°51'21.59"S	19°51'34.98"E
9	33°51'19.96"S	19°51'42.33"E
10	33°51'20.55"S	19°51'39.63"E
11	33°51'22.06"S	19°51'34.38"E
12	33°51'28.78"S	19°51'40.73"E
13	33°51'29.94"S	19°51'47.05"E
14	33°51'27.13"S	19°51'46.02"E
15	33°51'26.04"S	19°51'55.03"E
16	33°51'12.82"S	19°52'9.88"E

Cultivation Area 1c		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
16	33°51'12.82"S	19°52'9.88"E
17	33°51'17.38"S	19°52'16.98"E
18	33°51'15.59"S	19°52'19.29"E
19	33°51'12.81"S	19°52'15.47"E
Cultivation Area 2		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
20	33°51'21.30"S	19°52'15.08"E
21	33°51'3.55"S	19°52'41.86"E
22	33°51'2.66"S	19°52'39.03"E
Cultivation Area 3		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
23	33°51'14.44"S	19°52'39.27"E
24	33°51'14.50"S	19°52'43.18"E
25	33°51'10.04"S	19°52'43.39"E

Cultivation Area 4		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
26	33°51'30.89"S	19°51'7.35"E
27	33°51'34.76"S	19°50'58.16"E
28	33°51'40.46"S	19°51'8.68"E
29	33°51'36.11"S	19°51'15.70"E
Cultivation Area 5		
Reference No.	Co-ordinate (S)	Co-ordinate (E)
30	33°51'53.19"S	19°51'50.87"E
31	33°51'48.03"S	19°51'49.34"E
32	33°51'46.21"S	19°51'43.37"E
33	33°51'50.87"S	19°51'39.53"E

Geo-reference Map indicating the Proposed Layout for the development at Uitnood Farm, Robertson RD.

Scale: As per Google Earth Image

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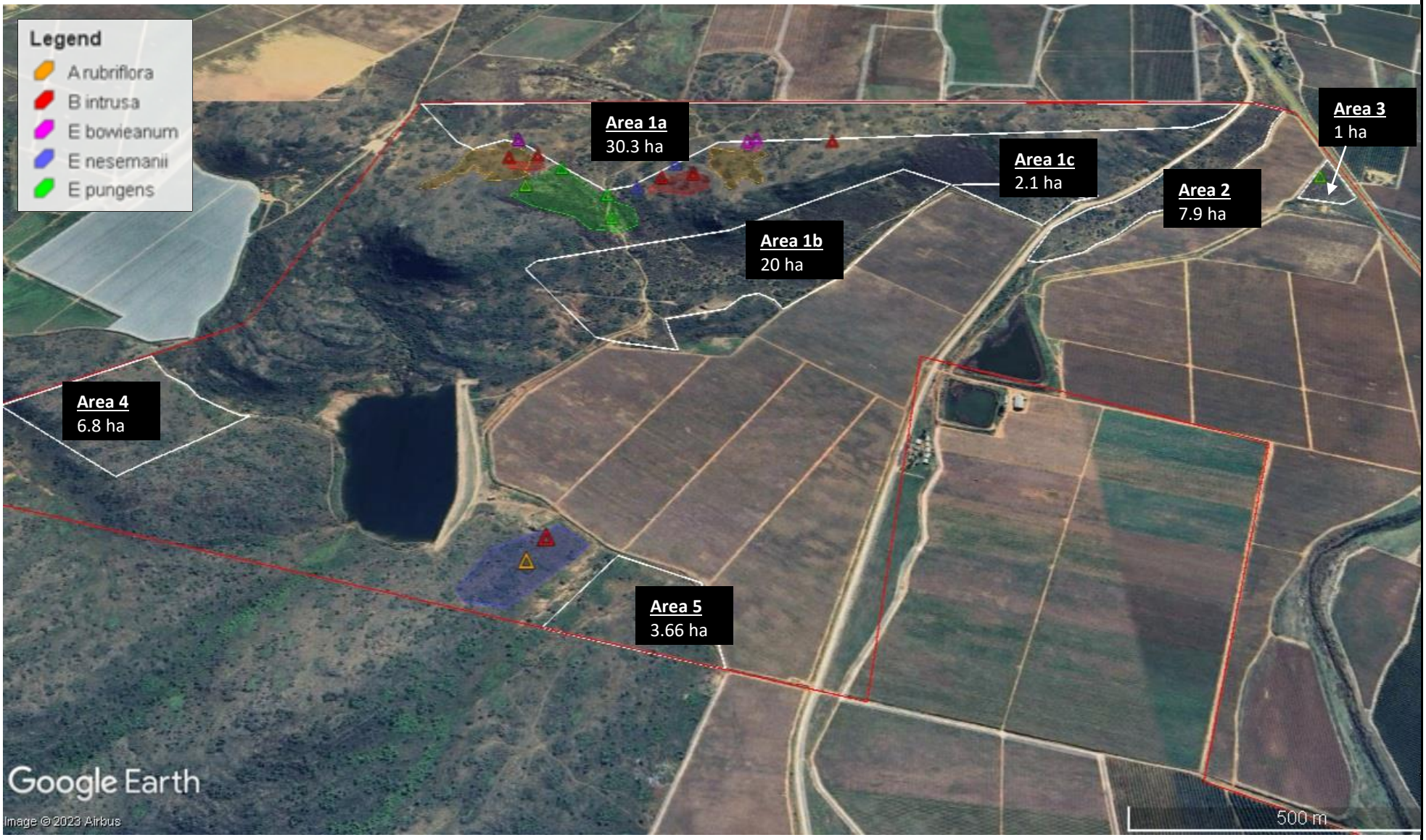
FIGURE C

SITE DEVELOPMENT PLAN INDICATING VULNERABLE AND NEAR THREATENED PLANT SPECIES LOCATIONS



SDP - Preferred Layout of Cultivation Areas on Portion 38 Farm Uitnood No. 129, Robertson, indicating the location of the Red Data Plant species.

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APPENDICES

Appendix A: **A1** - Annemarie Hurter's Curriculum Vitae

A2 - Pieter de Villiers' Curriculum Vitae

Appendix B: Environmental Awareness/Induction Training Material

Appendix C: Method Statement - Example Template

Appendix D: Incident Register - Example Template

Appendix E: Fossil Chance Find Protocol

Appendix F: Stormwater Management Plan

Appendix A:

A1 - Annemarie Hurter's Curriculum Vitae

CURRICULUM VITAE – **ANNEMARIE (DU TOIT) HURTER**
(Abbreviated Version)

PERSONAL INFORMATION

Full names:	Annemarie Hurter
Maiden name:	Du Toit
Nationality:	South African
Languages:	English and Afrikaans
Profession:	Environmental Assessment Practitioner (EAP)
Accreditation:	Registered EAP (Reg. No. 2021/4014)
Specialisation:	Environmental Services
Office Address:	Die Boord, Stellenbosch
Contact number:	Cell: 082 324 8885
	Tel: 021 887 9099
Email address:	annemarie@cornerstoneenviro.co.za

EDUCATION

2001: Master's in Science (M.Sc.) (with combined Honours) degree in Zoology (*cum laude*) at the University of Stellenbosch, specialising in Ecological Herpetology.

1998: Obtained B.Sc. degree, majoring in Zoology and Botany, at the University of Stellenbosch.

1995: Completed first year of National Diploma in Travel and Tourism at the Cape Technikon.

1994: Matriculated at Stellenberg High School (with distinction).

PROFILE SUMMARY

Annemarie Hurter is a senior Environmental Consultant, employed by Cornerstone Environmental Consultants (Pty) Ltd.

Annemarie has more than 13 years' experience in the environmental management field and is a registered Environmental Assessment Practitioner (EAP) with the Environmental Assessment Practitioners' Association of South Africa (EAPASA), member of the International Association for Impact Assessors, South African Affiliate (IAIAsa), and Alumni of Stellenbosch University

She provides professional environmental consulting and management services, implementing the National Environmental Management Act (NEMA) Regulations, specializing in facilitating Environmental Basic Impact Assessments, Full Impact Assessments, Section 24G Applications, Environmental Audits, Environmental Management Programmes, Maintenance Management Plans and Stakeholder Engagement/Public Participation processes. Annemarie has been involved with and independently submitted numerous applications for Environmental Authorisation.

During the course of her career, Annemarie has been exposed to environmental assignments ranging from scientific research projects and working for water ventures to environmental education and GIS mapping. She has worked with many professionals (consulting and industry) and has gained broad experience in the environmental field.

WORK EXPERIENCE

- Currently employed by Cornerstone Environmental Consultants as an EAP (Part time since February 2019 and Full time since February 2020).
- Mathematics Tutor at Abakus Math and Science Enrichment Centre, Stellenbosch. (2018 - 2020)

- Owner and Director of Kana Environmental Consultants, operating as an Environmental Assessment Practitioner. (2010 - 2018)
- Independent Environmental Consultant for Ecosense, EcoStructure and Mark Berry Environmental Consultants. (2008-2010, 2017-2018)
- Teacher at dual language Point High School, Mossel Bay, teaching Biology and Mathematics to pupils from grade 8 to grade 12. (2005 – 2007)
- GIS/GPS work, mapping alien invasive vegetation at various places in the Western Cape for the Department of Water Affairs and Forestry. (2003)
- Project Manager for clearing alien invasive vegetation at the Blaauwberg Conservation Area and Rietvlei for the Department of Water Affairs and Forestry. (2002 / 2003)
- Technical Officer at the Department of Zoology, University of Stellenbosch. (2002)
- Research assistant for Prof. P. le F. N. Mouton at the Department of Zoology, University of Stellenbosch. (1999 / 2000)
- Research assistant for Dr. K. Esler at the Department of Botany, University of Stellenbosch. (1998)
- Laboratory demonstrator for first year Botany and Medical students, University of Stellenbosch. (1997 / 1998)

PUBLICATIONS

DU TOIT, A., MOUTON, P.LE F.N., GEERTSEMA, H. & FLEMMING, A.F. 2002. Foraging mode of serpentiform, grass-living lizards: a case study of *Cordylus anguinus*. *African Zoology* 37: 141-149.

DU TOIT, A., MOUTON, P.LE F.N., & FLEMMING, A.F. 2003. Aseasonal reproduction and high fecundity in the Cape Grass Lizard, *Cordylus anguinus*, in a fire-prone habitat. *Amphibia-Reptilia* 24: 471-482.

- *A full CV and Certificates available on request.*

A2 - Pieter de Villiers' Curriculum Vitae

Curriculum Vitae

(Abbreviated Version)

Pieter de Villiers

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Personal Information

Full names:	Petrus Johannes de Villiers (Pieter)
Nationality:	South African
Languages:	Afrikaans and English
Profession:	Environmental Assessment Practitioner (EAP)
Accreditation	Registered EAP (Reg. No. 2019/1372); and Professional Natural Scientist (Pr.Sci.Nat 400210/15)
Position:	Director
Specialisation:	Environmental Services
Office Address:	Die Boord, Stellenbosch
Cell number:	083 243 0994
Office Tel:	021 887 9099
Email address:	pieter@cornerstoneenviro.co.za
Website:	www.cornerstoneenviro.co.za

Profile Summary

Pieter de Villiers is the founder of Cornerstone Environmental Consultants (Pty) Ltd.

Pieter has more than 17 years' experience in the environmental management field and is a registered Environmental Assessment Practitioner (EAP) with the Environmental Assessment Practitioners Association of South Africa (EAPASA) and is a registered Professional Natural Scientist with the South African Council for Natural Scientific Professions (SACNASP). He holds a Baccalaureus Technologiae (B. Tech) Degree in Environmental Sciences from the Tshwane University of Technology, and has successfully completed the Management Development Programme at the University of Stellenbosch Business School. He has also successfully completed Aspects International's ISO 14001:1996 Lead Auditors Training course (IEMA's[1] Approved Auditors' Course), amongst others.

He gained experience as part of the environmental team at Golder Associates Africa (hereafter "Golder Associates"), an international consultancy firm, where he was mostly involved with projects in the heavy industrial and mining sectors as part of multi-disciplinary teams. Whilst at Golder Associates, he gained invaluable auditing experience in the mining sector, mostly conducting Environmental Management Systems and Compliance Audits in African countries outside the borders of South Africa.

Pieter also worked for a small, yet dynamic consultancy company, Withers Environmental Consultants in Stellenbosch, where his focus shifted to managing Environmental Impact Assessment processes in the residential, land development, telecommunication, renewable energy and Municipal bulk services sectors. He prepared Environmental Scoping Reports, Environmental Impact Reports, Environmental Management

[1] Institute of Environmental Management and Assessment

Programmes, Environmental Due Diligence Reports, Project Cost Estimates and Quotations, amongst others. He also acted as an Environmental Control Officer on construction projects ranging from housing developments to optic fibre duct installation projects. Pieter furthermore also managed and assisted junior staff in the office.

Pieter then joined Enviroworks, an environmental consultancy based in Bloemfontein, Free State Province, with a branch in Strand, Western Cape Province, as their General Manager. He provided leadership to all staff members in overseeing the company's projects and services, and acted as project reviewer. He furthermore functioned as a Senior Environmental Consultant and maintained projects of his own. Project related experience and responsibilities were to conduct and coordinate Environmental Impact Assessments and its associated public participation processes in several disciplines e.g. renewable energy projects, housing developments, industrial development, optic fibre duct installations and Section 24G rectification applications. His review work included review of Environmental Scoping Reports, Environmental Impact Reports, Environmental Management Programmes, Environmental Due Diligence Reports, Project Cost Estimates and Quotations, etc. He also acted as an Environmental Control Officer on construction projects.

Tertiary Education

Year:	**2005**
Qualification:	B. Tech Environmental Sciences
Institution:	Tshwane University of Technology (previously Technikon Pretoria)
Subjects:	Project: Environmental Technology IV, Environmental Resources IV, Environmental Rehabilitation IV, Environmental Social Science III, Water Quality Management IV, and Integrated Catchment Management IV.
Year:	**2002 - 2004**
Qualification:	N. Dip. Environmental Sciences
Institution:	Tshwane University of Technology
Subjects:	Environmental Management I, II & III, Environmental Resources I, II & III, Environmental Law, Communication skills, Chemistry IA, Geology I, Mathematics I, Entrepreneurial skills, Computer Skills, Applied Geology I & II, Environmental Geology II, Environmental Geohydrology III, Microbiology I, Geotechnology I, II & III, Environmental Chemistry II, Environmental Economy, Environmental Biotechnology II, Environmental Management Systems, Industrial Processes III, and Industrial Environmental Practice III.

Courses Attended

2017	Water Use Training: "Understanding Watercourses and Managing Impacts to their Characteristics" One day workshop
2014	Sharpening the tool: New techniques and methods in environmental impact assessment. Presented by SE Solutions
2010	Management Development Programme at the University of Stellenbosch Business School
2009	Golder Associates Africa Technical Writing Course
2007	Aspects International, ISO 14001:1996 Lead Auditors Training course, IEMA Approved Auditors Course
2006	St John Ambulance, First Aid Training Course Level 1
2006	International Association for Public Participation, IAP2 Certificate in Public Participation
2006	Golder Associates Africa, Project Sustainability Management
2006	National Occupational Safety and Health Consultancy: Health and Safety Representative Training Course
2006	Golder Associates Africa, Project Management Course

Work Experience

May 2014 to current **Cornerstone Environmental Consultants** **Stellenbosch, South Africa**

Independent Environmental Assessment Practitioner

Functions and experience: Director, Principle Environmental Assessment and Public Participation Practitioner and Environmental Auditor. Day-to-day running of the business and responsible for all decision-making and marketing of the services the company provide. Advise clients on a variety of aspects in the environmental management sphere and act as EAP and reviewer on all projects the company pursue. Pieter is also an Environmental Control Officer on construction projects and

has undertaken several Water Use Licence external audits.

September 2013 to May 2014

Enviroworks Environmental Consultants Bloemfontein and Strand, South Africa

General Manager and Senior Environmental Consultant

Functions and experience: Pieter was appointed as Enviroworks' General Manager for Enviroworks' two branches, the head office in Bloemfontein, Free State and the Western Cape office situated in Strand. Pieter provided leadership to staff in overseeing all company projects and services and acted as project reviewer. He also functioned as a Senior Environmental Consultant and maintained projects of his own. Project related experience and responsibilities were to conduct and coordinate Environmental Impact Assessments and its associated public participation processes in several disciplines e.g. renewable energy projects, housing developments, industrial development, optic fibre duct installations and Section 24G rectification applications. His review work included review of Environmental Scoping Reports, Environmental Impact Reports, Environmental Management Programmes, Environmental Due Diligence Reports, Project Cost Estimates and Quotations, etc. He also acted as an Environmental Control Officer on construction projects.

October 2009 to August 2013

Withers Environmental Consultants Stellenbosch, South Africa

Senior Environmental Consultant and Environmental Control Officer

Functions and experience: Responsible for conducting and coordinating Environmental Impact Assessments and its associated public participation process in several disciplines e.g. housing developments, industrial development, optic fibre duct installations and alternative energy projects. Compilation of Environmental Scoping Reports, Environmental Impact Reports, Environmental Management Programmes, Environmental Due Diligence Reports, Project Cost Estimates and Quotations, etc. Managing of junior staff in the office. Act as Environmental Control Officer on construction projects ranging from housing developments to optic fibre duct installation projects.

August 2004 to September 2009

Golder Associates Africa Johannesburg, South Africa

Environmental Scientist and Auditor (April 2006 to September 2009)

Functions and experience: Responsible for conducting and coordinating Environmental Impact Assessments in the industrial and mining sectors. Compilation of Environmental Scoping Reports, Environmental Impact Assessment Reports, Environmental Management Plans, Project Cost Estimates and Quotations, etc.

Audit-related experience in Environmental Management Systems, Compliance Audits, Due Diligence, Environmental Control Officer work and Phase 1 Environmental Site Assessments. Divisional Health and Safety representative.

Surveillance Technician (August 2004 to March 2006)

Functions and experience: Tailings storage facility surveillance, Resource Management and Information Systems (REMIS) implementation and updating of the database, compiling quarterly environmental baseline monitoring reports and co-ordinating key performance indicators within the Surveillance Division. Divisional Health and Safety representative.

A full CV and Company Profile will be forwarded upon request. Also view www.cornerstoneenviro.co.za.

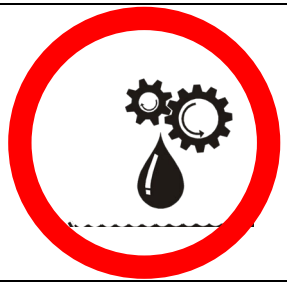
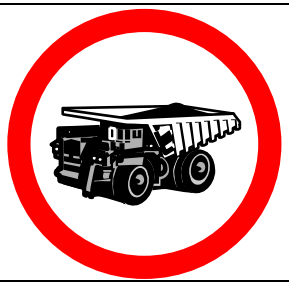
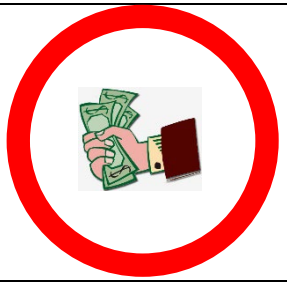
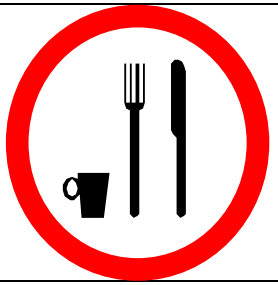
Appendix B:

Environmental Awareness/Induction Training Material

APPENDIX B: Environmental Awareness/Induction Training Material

PROTECTION OF THE ENVIRONMENT IS YOUR RESPONSIBILITY

BESKERMING VAN DIE OMGEWING IS JOU VERANTWOORDELIKHEID

					
REMAIN WITHIN WORKING AREAS **BLY BINNE WERKGEBIEDE**	**PROTECT ANIMALS ON THE SITE** **BESKERM DIERE OP DIE KONSTRUKSIETERREIN**	**DO NOT HARM OR DAMAGE PLANTS AND ANIMALS.** **MOENIE PLANTE EN DIERE BESKADIG NIE.**	**USE RUBBISH BINS** **GEBRUIK ASBLIKKE**	**DO NOT LIGHT ANY FIRES WITHOUT PERMISSION** **MOENIE SONDER TOESTEMMING ENIGE VURE MAAK NIE**	**SMOKE CAUTIOUSLY** **ROOK VERSIGTIG**
					
PREVENT OIL POLLUTION. **USE DRIP TRAYS** **VOORKOM OLIE-BESOEDELING**	**USE TOILETS** **GEBRUIK DIE TOILETTE**	**DON'T SPEED/ SECURE LOADS** **RY STADIG/ MAAK VRAGTE VAS**	**CONTROL DUST** **BEHEER STOF**	**FINES OF BETWEEN R1000-R10000** **BOETES TUSSEN R1000 - R10000**	**ONLY EAT IN DEMARCATED AREAS** **EET SLEGS IN GEMERKTE GEBIEDE**
			**EMERGENCY NUMBERS** **NETCARE** **082 911** **DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING** **021 483 4091** **CAPENATURE** **021 866 8000** **HERITAGE WESTERN CAPE** **021 483 5959**		
LIMIT NOISE **VERMINDER GERAAS**	**ASK QUESTIONS** **VRA VRAE**	**KNOW THE EMERGENCY NUMBERS** **KEN DIE NOODNOMMERS**			

Appendix C:

Method Statement - Example Template

Environmental Method Statement

Project:……..

Contractor:……..

Method Statement for: ……

Method Statement compiled by and Designation: …………..

Start Date of Works:…… **End Date of Works:**……

Note: The Contractor must submit the method statement to the Engineer's Representative (ER) and Environmental Control Officer (ECO) before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ER/ECO.

WHAT WORK IS TO BE UNDERTAKEN – give a brief description of the works to be undertaken.

WHERE THE WORKS ARE TO BE UNDERTAKEN – provide a description of the extent of the works and an annotated plan of the locality of works.

HOW THE WORKS ARE TO BE UNDERTAKEN - a detailed description of the process of work, methods and materials to be used in the works.

WHEN WILL THE WORKS TAKE PLACE - the sequencing of actions with due commencement dates and completion date estimates.

Declarations

1) ENVIRONMENTAL CONTROL OFFICER

The work described in this Method Statement, if carried out according to the methodology described, appears to be satisfactorily mitigated to prevent avoidable environmental impacts:

_____ _____

(signed) (print name)

Dated: _____

2) CONTRACTOR / DESIGNATED ENVIRONMENTAL OFFICER

We understand the contents of this Method Statement and the scope of the works required of us. We further understand that this Method Statement may be amended on application to other signatories and that the Engineer's Representative/Environmental Control Officer will audit my compliance with the contents of this Method Statement. We understand that this Method Statement does not absolve us from any of our obligations or responsibilities in terms of the Contract of Construction.

_____ _____

(signed on behalf of the Contractor) (print name / Contractor)

Dated: _____

3) ENGINEER'S REPRESENTATIVE

The works described in this Method Statement are approved.

_____ _____ _____

(signed) (print name) (designation)

Dated: _____

Appendix D:

Incident Register - Example Template

Incident and Complaints Register – Example Template

INCIDENT REGISTER: [Add project name here**]**					
PERSON REPORTING THE INCIDENT/COMPLAINT (NAME AND CONTACT DETAILS)	**SHORT DESCRIPTION OF INCIDENT / COMPLAINT**	**DATE OF INCIDENT/ COMPLAINT**	**DATE INCIDENT/ COMPLAINT WAS REPORTED**	**MANNER IN WHICH INCIDENT/ COMPLAINT WAS ADDRESSED AND DATE INCIDENT/ COMPLAINT WAS RECTIFIED**	**PERSON RESPONSIBLE FOR RECTIFICATION / CLOSE-OUT**

INCIDENT REGISTER: [Add project name here**]**					
PERSON REPORTING THE INCIDENT/COMPLAINT (NAME AND CONTACT DETAILS)	**SHORT DESCRIPTION OF INCIDENT / COMPLAINT**	**DATE OF INCIDENT/ COMPLAINT**	**DATE INCIDENT/ COMPLAINT WAS REPORTED**	**MANNER IN WHICH INCIDENT/ COMPLAINT WAS ADDRESSED AND DATE INCIDENT/ COMPLAINT WAS RECTIFIED**	**PERSON RESPONSIBLE FOR RECTIFICATION / CLOSE-OUT**

Appendix E:

Fossil Chance Find Protocol

Chance Fossil Find Protocol

Monitoring Programme for Palaeontology – to commence once the excavation activities begin.

1. The following procedure is only required if fossils are seen on the surface and when excavations commence.
2. When excavations begin the rocks and must be given a cursory inspection by the environmental officer or designated person. Any fossiliferous material (brachiopods, molluscs or snail shells) should be put aside in a suitably protected place. This way the project activities will not be interrupted.
3. Photographs of similar fossils must be provided to the developer to assist in recognizing the fossil plants, vertebrates, invertebrates or trace fossils in the shales and mudstones (for example see Figures 1, 2). This information will be built into the EMP's training and awareness plan and procedures.
4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment.
5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.
6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a HWC permit must be obtained. Annual reports must be submitted to HWC as required by the relevant permits.
7. If no good fossil material is recovered then no site inspections by the palaeontologist will be necessary. A final report by the palaeontologist must be sent to HWC once the project has been completed and only if there are fossils.
8. If no fossils are found and the excavations have finished then no further monitoring is required.

Appendix A – Examples of fossils from the Table Mountain Group and Bredasdorp Group.

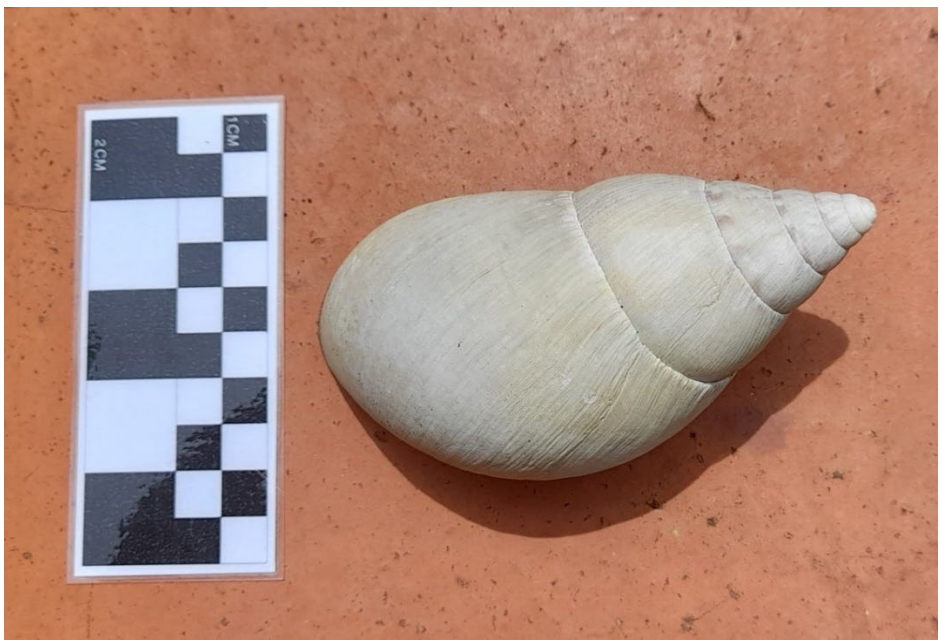


Figure 1: Terrestrial snail *Achatina* sp. shell that has lost its outer patterned layer.

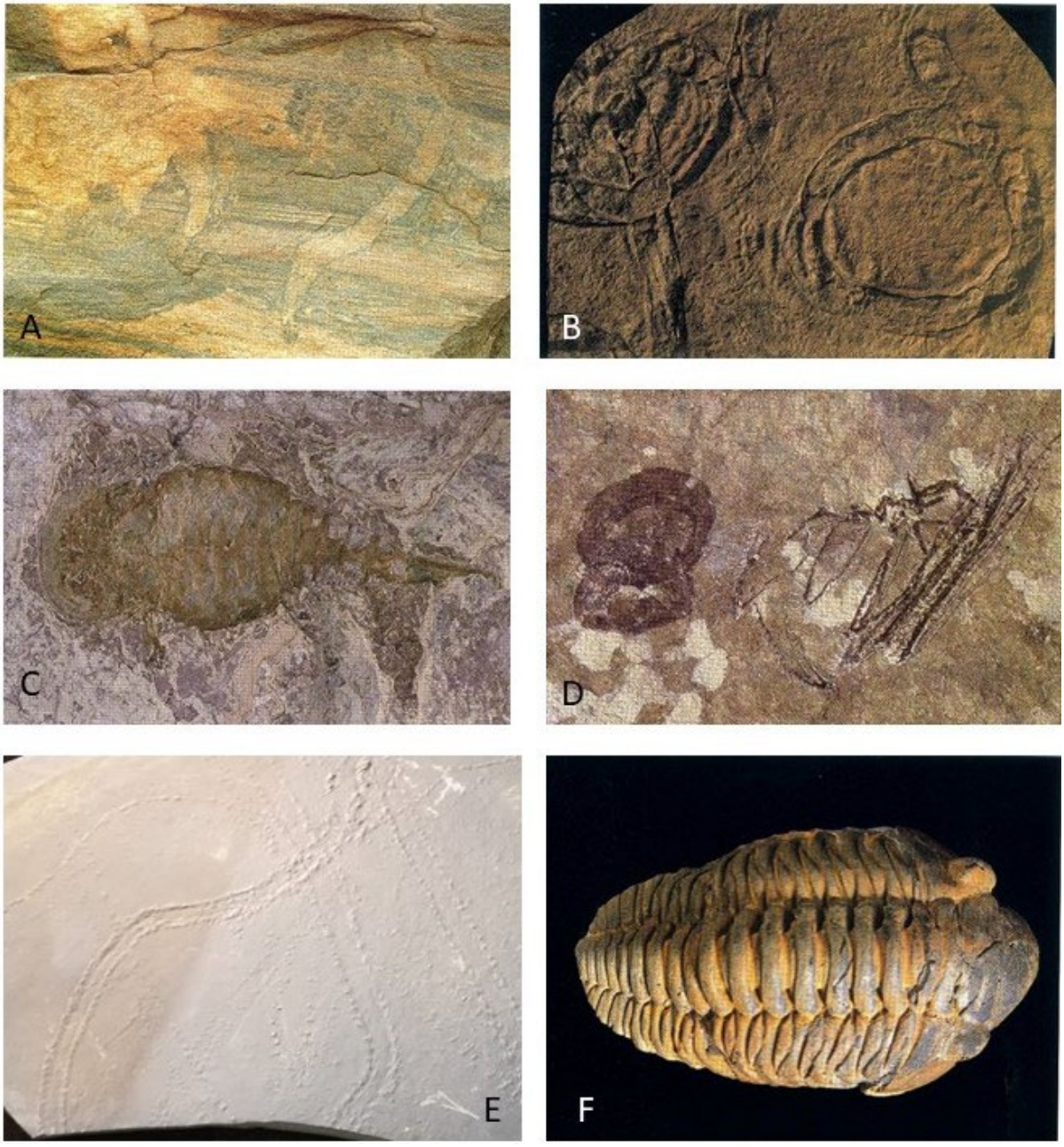


Figure 2: Trace fossils, tracks and a trilobite from the Table Mountain Group.

Appendix F:

Stormwater Management Plan

Report

PROPOSED CULTIVATION ON PORTION 38 OF THE FARM UITNOOD NO. 129, ROBERTSON: STORMWATER MANAGEMENT PLAN

Prepared for:

EILANDIA PLASE (Pty) Ltd

Le Chasseur

Robertson

6705

Prepared by:

Graeme McGill consulting

Tel: 021 976 0386

Mobile: 082 550 9108

graeme@mcgillconsulting.co.za

Report No.: MC416-01

Revision: Rev 0

Date: 2023-09-27

CONTENTS

DRAWING

PROPOSED CULTIVATION ON PORTION 38 OF THE FARM UITNOOD NO. 129, ROBERTSON: STORMWATER MANAGEMENT PLAN

1 SCOPE

Eilandia Plase (Pty) Ltd are planning to development an additional 76,2 ha of cultivated land on Portion 38 of the farm Uitnood No.129, Robertson. Graeme McGill Consulting was appointed on 2023-06-08 to prepare a Stormwater Management Plan (SMP).

In particular it is required to comply with a directive from the Central Breede River Water User Association (Annexure A). This directive is particularly focussed on the Le Chasseur and Goree Canal.

The purpose of the SMP is to ensure that stormwater runoff is handled responsibly.

2 DATA ACQUISITION

2.1 SITE INSPECTION

The site was inspected and photographs taken on 2023-08-04.

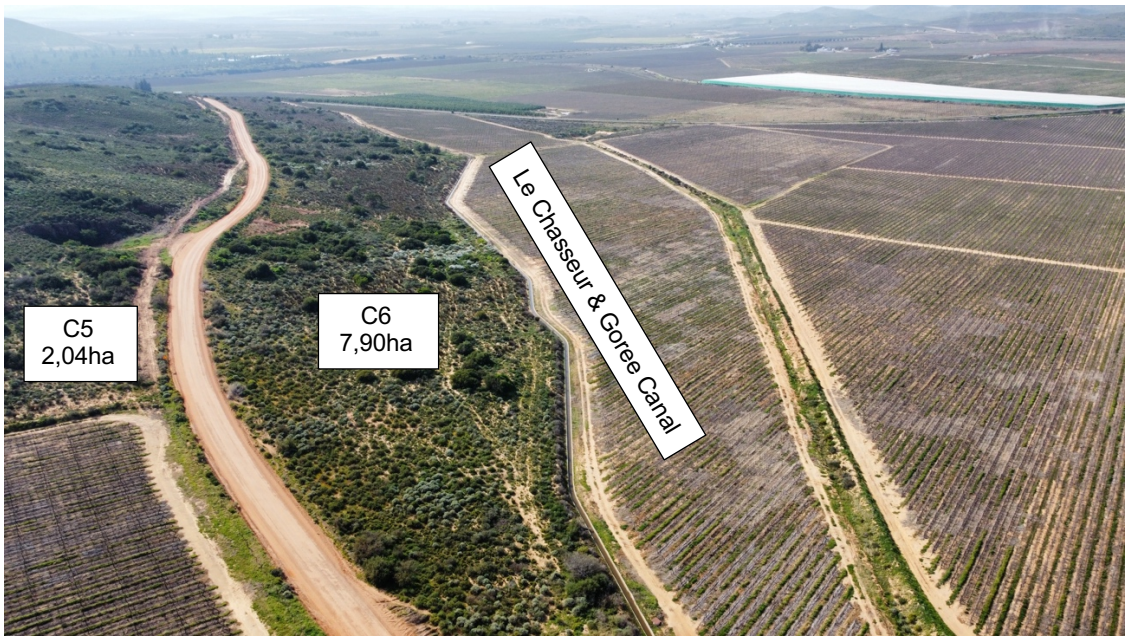


FIGURE 1: PROPOSED CULTIVATION AREAS ABOVE THE LE CHASSEUR AND GOREE CANAL

FIGURE 2: LE CHASSEUR & GOREE CANAL RUNOFF BRIDGE - DAMMAGED

FIGURE 3: ATTENUATION DAM WHICH RECEIVES RUNOFF FROM AREAS C6 AND C7

2.2 SOILS SURVEY

A soil survey was carried out by Agrimotion on the selected areas. 36 test holes were excavated over an area of 77 ha.

The purpose of the survey was to determine the suitability of the selected areas for perennial crop production. It was found that in general the better soils (deep sandy soils) are situated at the central part of the surveyed area. The poorest soils (shallow rocky soils) were found to occur along the higher slopes (Soil Management Zone 4 on the Soil Map – Annexure B).

The area above the Le Chasseur & Goree Canal was classified as mainly Medium to Medium High suitability, i.e. deep, sandy and well drained.

These indices were used in assessing runoff potential.

2.3 CULTIVATION AREAS

There are 9 proposed cultivation areas on Uitnood farm. These are labelled see C1-C9 on drawing MC416-C400.
In Table 1 the areas and associated average soil suitability indices are listed. These indices together with the soil type and observations on site have been used to assign the degree of permeability.

TABLE 1: PROPOSED CULTIVATION AREAS

AREA	SIZE (m2)	SURFACE SLOPE (%)	AVERAGE SOIL TYPE	SOIL SUITABILITY INDEX	PERMEA-BILITY
C1	54800	4,79%	Mispah	1	SP
C2	168992	6,09%	Glenrosa	5	P
C3	123666	6,09%	Glenrosa Gs	3-4	SP
C4	200674	10,39%	Clovelly	7	VP
C5	20352	11,76%	Fernwood	6	VP
C6	79092	7,96%	Fernwood	5-6	P
C7	10436	5,71%	Clovelly	7	VP
C8	68067	15,14%	Mispah, Glenrosa	3	SP
C9	36340	6,42%	Coega, Valsrivier	4	SP

NOTES:
1. Soil suitability index - from Agrimotion report
2. Permeability:

VP	Very permeable
P	Permeable
SP	Semi-permeable
I	Impermeable

2.4 LE CHASSEUR AND GOREE CANAL

The Le Chasseur and Goree irrigation canal crosses Uitnood farm and is located along the lower south-eastern edge of the cultivation area C6. The position of the canal is indicated on the drawing MC416-C400.

The protection of this canal is a critical part of this stormwater management plan. Refer also to Annexure A.

3 STORMWATER MANAGEMENT

3.1 STORM RAINFALL

The storm rainfall has been based on the weather station 0023619 W ROBERTSON (MUN) for which the 1-day depths are listed in Table 2. The average time of concentration has been taken as 10 minutes and the 10 minute rainfall depths based on the SA Type 2 rainfall distribution, are also listed in Table 2.

TABLE 2: DESIGN STORM RAINFALL

RECURRENCE INTERVAL (y)	2	5	10	20	50	100
	RAINFALL DEPTH (mm)					
0023619 W ROBERTSON (MUN)						
Storm duration: 1 day	32	46	58	71	89	106
Storm duration: 10 minutes	6,51	9,36	11,81	14,45	18,12	21,58

3.2 PEAK RUNOFF

Peak runoff has been computed for each cultivation area using the Rational Method. The results are summarised below for recurrence intervals 1:2 to 1:100 years (Table 4 upper section). Peak flows per hectare of catchment are listed in the lower sections of Table 4.

As may be seen the higher flows are found in the stepper, more impervious areas such as C1, C3, C8 and C9.

TABLE 3: STORM RUNOFF PER CULTIVATION AREA

AREA	SIZE (m^2)	RECURRENCE INTERVAL (y)					
		2	5	10	20	50	100
		PEAK FLOW (m^3/s)					
C1	54800	0,11	0,17	0,23	0,30	0,39	0,49
C2	168992	0,26	0,40	0,54	0,70	0,92	1,16
C3	123666	0,25	0,39	0,52	0,67	0,89	1,11
C4	200674	0,36	0,55	0,74	0,96	1,27	1,59
C5	20352	0,04	0,06	0,07	0,10	0,13	0,16
C6	79092	0,12	0,19	0,25	0,33	0,43	0,54
C7	10436	0,01	0,02	0,03	0,04	0,05	0,06
C8	68067	0,17	0,26	0,35	0,46	0,60	0,76
C9	36340	0,07	0,11	0,15	0,20	0,26	0,33
		PEAK FLOW ($m^3/s/ha$)					
C1		0,020	0,031	0,042	0,054	0,072	0,090
C2		0,015	0,024	0,032	0,041	0,054	0,068
C3		0,020	0,031	0,042	0,054	0,072	0,090
C4		0,018	0,028	0,037	0,048	0,063	0,079
C5		0,018	0,028	0,037	0,048	0,063	0,079
C6		0,015	0,024	0,032	0,041	0,054	0,068
C7		0,013	0,020	0,027	0,035	0,046	0,058
C8		0,025	0,039	0,052	0,067	0,089	0,112
C9		0,020	0,031	0,042	0,054	0,072	0,090

3.3 CULTIVATION AREAS

3.3.1 GENERAL

There are a number of factors to consider in the stormwater management of vineyards. These relate mainly to the prevention of erosion and the efficient drainage of the land. Three main methods are (Tim Martinson, Cornell University) :

- Divert excess water around the vineyard: this will be required to manage external run-on or the diversion of a stream
- Slow run-off out of the vineyard: Planting the rows downslope on steep areas should be avoided.
- Provide ground covers that break the force of raindrops before they reach the soil. This may be achieved through having grassed or mulched row middles and by creating vegetated buffer strips around the vineyards.
  Special measures are required in certain cases, for example along the Le Chasseur and Goree canal.

Refer to drawing MC416-C400 Stormwater Management Plan.

3.3.2 AREA C1

Area C1 is located in the north-eastern corner of the farm (drawing MC416-C400). Runoff will be partially towards area C2 and partially towards the western boundary. Special care will be taken along that boundary so as not to make the existing road on the adjacent property into a channel. Consultation should be held with the adjacent land owner.

Runoff onto the adjacent C2 area should not be concentrated.

3.3.3 AREA C2

Area C2 is located along the northern border of the farm (drawing MC416-C400). It is intended to reshape the area in order to flatten the slopes somewhat while retaining the overall topography. As shown on the drawing runoff will be guided along the boundary to a central point which corresponds to an existing watercourse on the neighbouring property.

As may be seen in Table 3 this area is sandy and very pervious and little surface runoff is anticipated.

3.3.4 AREA C3

Area C3 lies adjacent to C2 also on the northern boundary of the farm. When this portion of land is prepared, shallow channels will be formed to direct runoff to a central point to an existing watercourse on the neighbouring property.

Based on a 1:5 year recurrence period, each of these channels would need to accommodate 200 l/s at a slope of approximately 6%. The shallow channels are to be protected against erosion using check dams or stony material.

3.3.5 AREA C4

Area C4 (drawing MC416-C400) is the largest portion (20ha) and is relatively steep (10%) however the deep pervious soils will result in limited surface runoff. Particular care must be taken during establishment not to expose large areas which will be vulnerable to erosion.

There is a steep area above the eastern portion of C4 and care must be taken that runoff from this area does not concentrate and form gulley's. Once this land portion has matured after development conditions should not differ from pre-development conditions.

3.3.6 AREA C5

Area C5 is a small well drained portion which will safely drain to adjoining internal farm access roads.

As this land is steep (11%) special care must be taken during establishment to prevent soil loss due to runoff and wind erosion.

3.3.7 AREA C6

Portion C6 is an elongated area located between the farm access road and the Le Chasseur and Goree canal. The runoff will in general not be concentrated along the 915m adjacent to the canal.

As noted in the communication from the Central Breede River WUA, the concentration of runoff over the canal to only two points, one at the northern and one at the southern end must be addressed when area C6 is developed.

In order to address this it is proposed to provide stormwater runoff overpass chutes at intervals of approximately 200m. A typical overpass is shown in Figure 4. Contours furrows will be constructed to direct runoff to these points.

These should be sufficient to accommodate a major storm event.

The runoff, after crossing the canal, is to be collected in a contours channel and directed to an existing attenuation dam (drawing MC416-C400) from where the water is slowly released to the river via a 200mm diameter pipeline.

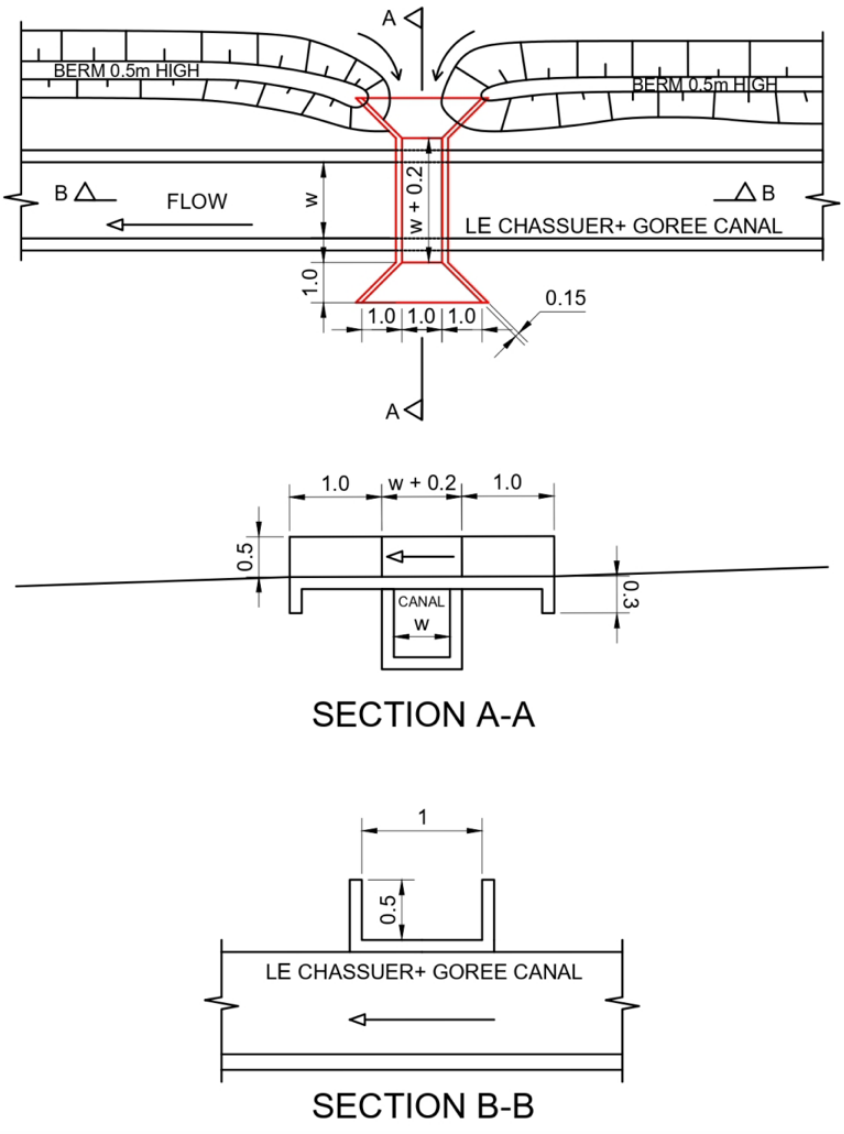


FIGURE 4: TYPICAL STORMWATER OVERPASS

3.3.8 AREA C7

Area C7 (drawing MC416-C400) comprises a small pocket of land (1,04ha), with runoff being partly directed into the adjacent attenuation dam and the remainder into well-established natural vegetation next to Langverwagten Road.

3.3.9 AREA C8

Area C8 is steep (15%) and has a relatively high runoff. It should be considered to place the rows parallel to the contours.

A contour furrow should be provided to slow the runoff and to limit sediment entering the adjacent irrigation dam.

3.3.10 AREA C9

Area C8 is relatively steep (6%) and has a relatively high runoff. It should be considered to place the rows parallel to the contours.

A contour furrow should be provided to slow the runoff along the eastern edge.

4 CONCLUSION

It is proposed to develop an additional 76,2 ha of cultivated land on Uitnood farm in the Robertson area.

When natural vegetation is removed and the land disturbed in this process can must be taken to ensure proper stormwater management particularly in order to prevent soil loss and damage downstream.

Agrimotion conducted a soil survey and their report has been used to propose appropriate measures.

Of particular concern is that the development of the additional areas does not result in sediment entering the Le Chasseur and Goree canal which lies below and adjacent to area C6. This has been addressed by the provision of stormwater overpasses which will be provided at approximately 200m intervals along a 915m portion of the canal.

Drawing MC416-C400 shows the location of the proposed cultivation areas with notes summarizing the stormer management plan.

ANNEXURE A: Directive from CEO: Central Breede River WUA

Pieter de Villiers

From: lbruwer@lando.co.za
Sent: Thursday, 12 August 2021 11:01
To: 'Pieter de Villiers'
Subject: RE: Notice of Public Participation - Uitnood Farm Development - Pre-app Scoping Report

Mr Pieter de Villiers,

The Koningsrivier branch of the Le Chasseur & Goree canal system runs from north to south, to the east of the road through the development.
During the development of the existing vineyards to the west of the road, a number of smaller drainage lines have been channelled into a "contour furrow" that concentrate storm water flows at two points – one at the northern corner and one at the southern corner of the area. These concentrated flows creates an unacceptable risk for the canal.
If the proposed new areas are developed, a proper storm water management plan needs to be included in the authorisation. This has to specifically address measures to prevent any concentrated flows from entering the canal.

Regards
Louis Bruwer Pr Eng
CEO: Central Breede River WUA

From: Pieter de Villiers <info@cornerstoneenviro.co.za>
Sent: Friday, 06 August 2021 14:23
To: loretta.osborne@westerncape.gov.za; erossouw@bgcma.co.za; ayanda.mdludlu@westerncape.gov.za; 'Roscher, Rudolph' <RudolphR@elsenburg.com>; ChrisM@elsenburg.com; brandonl@elsenburg.com; RahabM@Dalrrd.gov.za; PhumezaSi@Dalrrd.gov.za; aduffell-canham@capenature.co.za; mm@langeberg.gov.za; tbrunings@langeberg.gov.za; mm@capewinelands.gov.za; wilmast@telkomsa.net; lbruwer@lando.co.za
Cc: mechau@eilandia.co.za; 'Mike van Schoor' <mike@eilandia.co.za>; 'Ockert Augustyn' <ockert@eilandia.co.za>
Subject: Notice of Public Participation - Uitnood Farm Development - Pre-app Scoping Report

Dear Organ of State

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED CLEARANCE OF INDIGENOUS VEGETATION FOR CULTIVATION ON PARTS OF PORTION 38 OF THE FARM UITNOOD NO. 129, ROBERTSON REGISTRATION DIVISION, WESTERN CAPE PROVINCE

NOTICE OF INTENT DEA&DP REFERENCE NUMBER: 16/3/3/6/7/2/B1/14/1127/21

PRE-APPLICATION DRAFT SCOPING REPORT FOR COMMENT

On behalf of the Applicant, Eilandia Plase (Pty) Ltd., we herewith notify you of the availability of the pre-application Draft Scoping Report for the above-mentioned proposed project, for comment.

The report has been sent to you via WeTransfer. The report will also be available for download from our website at https://www.cornerstoneenviro.co.za/projects-and-downloads/ and a hard copy will be available at the Robertson Public Library for perusal. The main report, without appendices, is attached to this email.

This notification is made in terms of Section 24O of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA), as amended.

A 30-day comment period commences on Tuesday, 10 August 2021 until Thursday, 9 September 2021.

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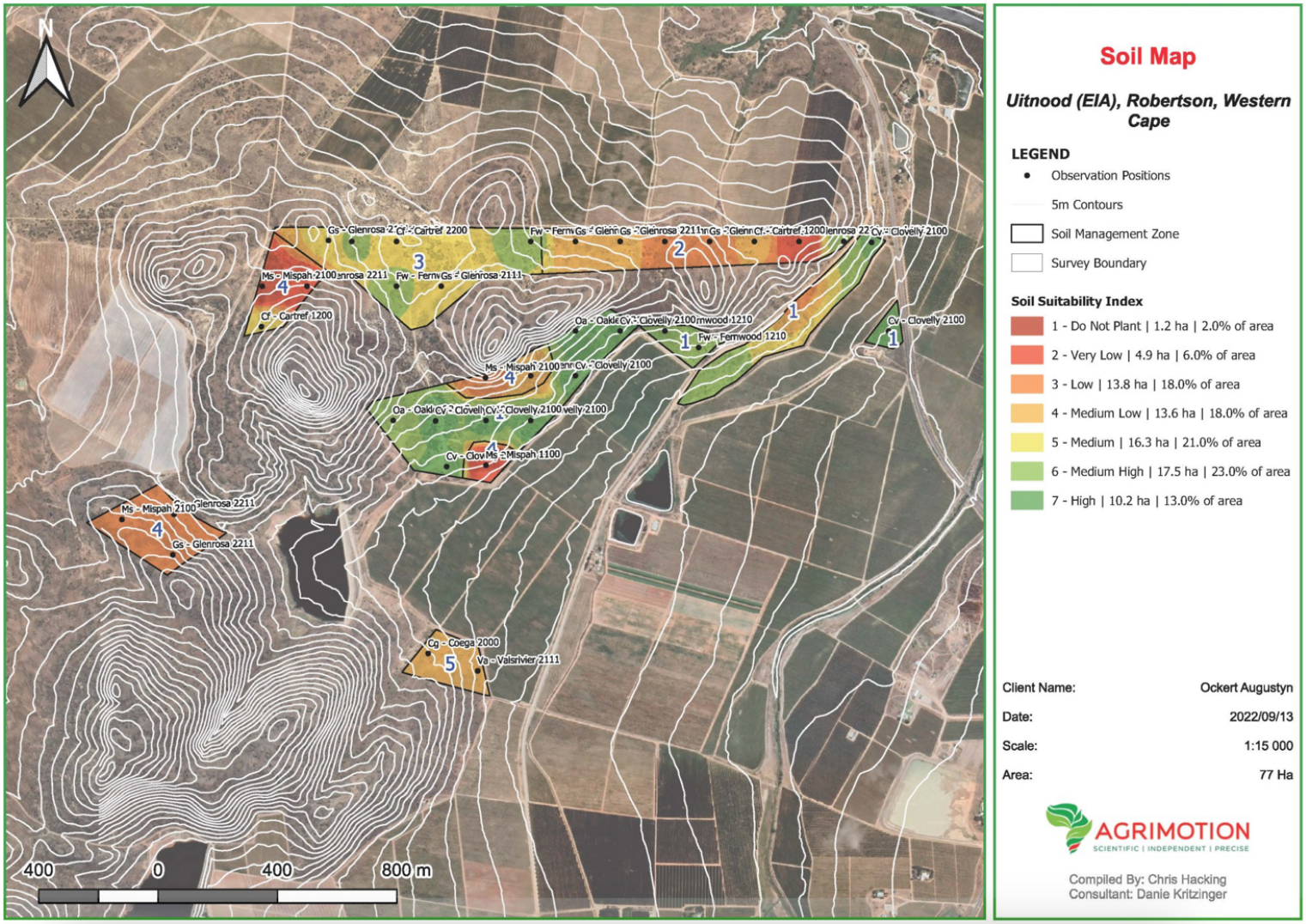
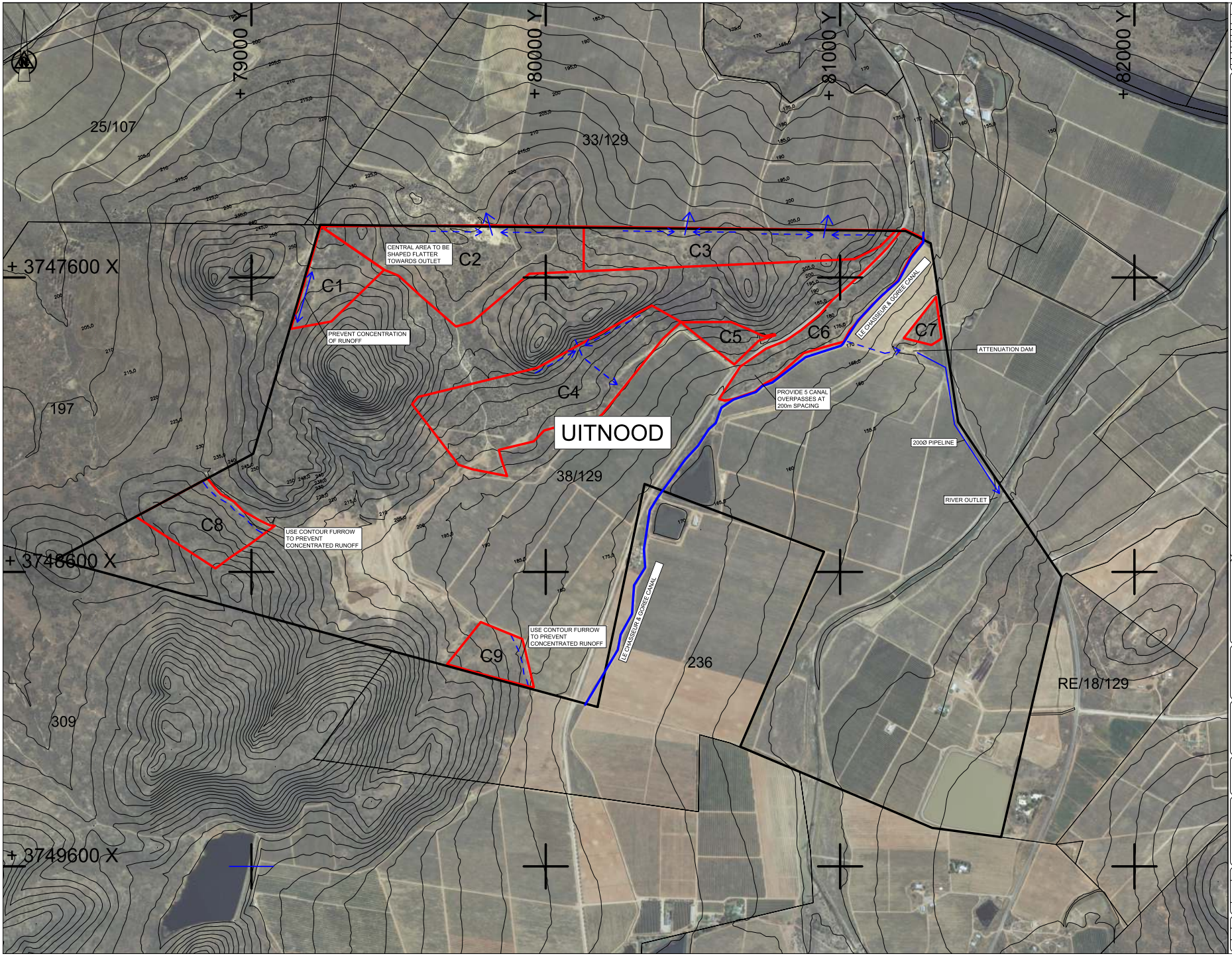
You are welcome to contact the undersigned, should you have any questions or require any additional information.

Groete/Regards
Pieter de Villiers

Physical Address: Cornerstone Environmental Consultants (Pty) Ltd. Die Boord, Stellenbosch, 7600.
Business Tel: 021 887 9099 **Fax:** 086 435 2174

ANNEXURE B AGRIMOTION: SOIL MAP. UITNOOD (EIA), ROBERTSON, WESTERN CAPE





REVISION:

No.	DATE	DESCRIPTION

PROPOSED DEVELOPMENT AREAS

DEVELOPMENT AREA	AREA (M²)
C1	24000
C2	109362
C3	123980
C4	209574
C5	25352
C6	17082
C7	10436
C8	6697
C9	36340

LEGEND:
- CADASTRAL
- MAJOR CONTOURS
- PROPOSED CULTIVATION AREAS
- LE CHASSEUR & GOREE CANAL
- CONTOUR FURROW
- CONTROLLED DISCHARGE

PROJECT:
PROPOSED CULTIVATION ON PORTION 38 OF THE FARM UITOOD NO.129, ROBERTSON

DRAWING TITLE
STORMWATER MANAGEMENT PLAN

CLIENT
EILANDIA PLASE (Pty) Ltd
Le Chasseur
Robertson
6705

Graeme McGill consulting
Tel: 021 976 0386
Cell: 082 550 9108
Fax: 086 517 6574
graeme@mcgillconsulting.co.za
PO Box 332
PRIVATE BAG X1
KLEINMOND
7501

DRAWN BY	DESIGNED BY
JW DE BRUIN	G McGILL Pr Eng No. 780359
DATE	2023-09-28
SCALE	1:4000 (A0)
DRAWING NO	MC416-C400
REVISION	A