

PROPOSED CLEARING OF NATURAL VEGETATION FOR CULTIVATION PURPOSES AND A DAM ON FARM 800, WORCESTER



In terms of the National Environmental Management Act (Act No. 107 of 1998), as amended (NEMA) and the NEMA Environmental Impact Assessment Regulations, 2014 (as amended).

Date:
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Prepared for:
JRG Farming (Pty) Ltd



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PROJECT DETAILS

TITLE:	Proposed Clearing of Natural Vegetation for Cultivation Purposes and a Dam on Farm 800, Worcester
DEA&DP REF:	Pre-Application No. 16/3/3/6/7/1/B2/32/1265/26
PROCESS:	Basic Assessment Process
REPORT:	Environmental Management Programme (EMPr)
APPLICANT:	JRG Farming (Pty) Ltd
APPOINTED EAP:	Lindsay Speirs Du Toit (trading as Earth Grace Environmental Consultancy)
EAPASA REGISTRATION NO:	2019/1470
REPORT DATE:	September 2026
REPORT COMPILED BY:	Lindsay Speirs Du Toit

The EAP's curriculum vitae and the oath undertaken by the ECO are attached as **Annexure 1**.

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1. INTRODUCTION

Lindsay Speirs Du Toit (trading as Earth Grace Environmental Consultancy) has been appointed by JRG Farming (Pty) Ltd to undertake a Basic Assessment Process for the proposed clearing of natural vegetation for agricultural expansion, as part of the application for Environmental Authorisation (EA). An integral aspect of the application is the development of an Environmental Management Programme (EMPr) to promote and ensure environmental monitoring, control, and management associated with vegetation clearing. This process is undertaken in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended (NEMA) and the EIA Regulations, 2014 (as amended). The EMPr must contain the information detailed in Appendix 4 of the NEMA EIA Regulations, 2014 (as amended).

This EMPr sets out management requirements and recommendations from the Environmental Assessment Practitioner (ECO), relevant specialists, stakeholders, and best practice. If the future EA contains requirements (conditions) that conflict with any points in this EMPr, the requirements (conditions) in the authorisation supersede this EMPr. This EMPr should be reviewed and updated to include any additional recommendations that arise from the S24G Process, as well as any conditions of authorisation, should the project be authorised.

Section 28 of NEMA provides for the Duty of Care principle that “...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 philosophy underpins the EMPr.

If the Department of Environmental Affairs and Development Planning (DEA&DP) grants the EA for the proposed activity and accepts this EMPr as part of the process, it will impose a legal obligation on the EA Holder to comply with the EMPr's specifications. This EMPr includes all relevant documentation contained within it or referred to in it, together with any amendments or appendices to this document. The DEA&DP must approve any changes to the EMPr. The NEMA EIA Regulations, 2014 (as amended), must be considered when amending the EMPr.

The Holder of the EA must ensure that the Farm Manager and all relevant personnel are familiar with this EMPr and that adequate provision is made for implementation of the required measures.

It is the responsibility of the Applicant/Holder of the EA to:

- Ensure that all requirements of the EMPr are met for the duration of the clearing and rehabilitation works. The Applicant/Holder of the EA is always ultimately responsible for compliance with South African law.
- Appoint an Environmental Control Officer (ECO) to monitor the implementation of the construction phase of the EMPr (i.e. clearing activities), where required to do so by DEA&DP. Appoint and ECO to monitor any other aspects covered in this document or its Appendices that expressly calls for an ECO to be involved.
- Ensure that all farm workers and any external service providers involved in clearing or cultivation activities are made aware of the requirements of this EMPr.

1.1. Purpose of this EMPr

The purpose of this EMPr is to ensure that the environmental impacts, of the construction phase, of the proposed development, are managed, mitigated and kept to a minimum (i.e. the outcome of implementing the EMPr). The EMPr must provide easily understood, clearly defined actions to be implemented during each phase of the proposal's development. The EMPr is a dynamic, flexible, and responsive document to new and changing circumstances.

This document is binding on the Holder of the EA, the Farm Manager, all farm workers involved in clearing activities, and any external service providers engaged to undertake work on site. Copies of this EMPr must be kept on site, and all senior personnel are expected to familiarise themselves with its content.

Any changes or deviations to this EMPr must be authorised by the competent authority, DEA&DP.

1.2. Status of this EMPr

It is essential that this EMPr be read alongside any legally obtained authorisations, such as an EA. This EMPr is a dynamic document that must be reviewed and updated on an ongoing basis. The EMPr is valid for the duration of the project, with each applicable phase aligned with the identified requirements.

1.3. EMPr Requirements

REQUIREMENT	DESCRIPTION
(a) Details of the ECO who prepared the EMPr; and	Annexure 1
(b) The expertise of the ECO to prepare an EMPr, including a curriculum vitae.	Annexure 1
(c) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description.	Section 2
(d) 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.	Annexure 2
(e) 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 the phases of the development, including – (i) Planning and design; (ii) Pre-construction activities; (iii) Construction activities; (iv) Rehabilitation of the environment after construction and, where applicable, post-closure; and (v) Where relevant, operational activities.	Sections 6 and 9

REQUIREMENT	DESCRIPTION
(f) A description of the proposed impact management actions, identifying the way the impact management outcomes contemplated above will be achieved and must, where applicable, include actions to – (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 practises; (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 above. (h) The frequency of monitoring the implementation of the impact management actions contemplated above. (i) An indication of the persons who will be responsible for the implementation of the impact management actions. (j) The time periods within which the impact management actions must be implemented. (k) The mechanism for monitoring compliance with the impact management actions. (l) A program for reporting on compliance, considering the requirements as prescribed in the Regulations. (m) An environmental awareness plan describing the manner in which – (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. (n) Any specific information that may be required by the competent authority.	Section 6 – Environmental Impacts and Mitigation Measures Section 9.4 - Monitoring Section 9.4 - Monitoring Section 7 – Roles and Responsibilities Section 9 – Impact Management Outcomes and Actions Section 9.4 - Monitoring Section 9.4 - Monitoring Sections 7, 8 and 9. None.

2. EMPr PHASING

2.1. Planning and Design Phase

The design phase will ensure that requirements and best-practice mechanisms are built into the planning and design phases and carried through into the clearing and operational phases.

2.2. Clearing Phase

The phase refers to the actual clearing activities and implementation of the recommended rehabilitation measures.

2.3. Operational Phase

This stage begins when all clearing and rehabilitation activities are complete. Various aspects of the proposed development will require ongoing rehabilitation activities, alien clearing, monitoring, routine maintenance and management.

The listed activity in terms of the EIA Regulations 2014, as amended, relate only to the development phase and not the operational phase. This EMPr is therefore only relevant to the development and rehabilitation phase.

The Applicant must ensure that the operational and maintenance phases maintain the underpinning principles 'Duty-of-Care-to-the-Environment' and ideals of sustainable development.

2.4. Closure and Decommissioning Phase

Decommissioning is the process of removing the operating assets of a development after its operating life cycle has ended. No decommissioning is planned.

3. LEGISLATIVE REQUIREMENTS

The project Applicant/Holder of the EA is required to comply with all applicable legislation and policies governing the development and its management. These include, but are not limited to:

3.1. The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)

The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), affirms that everyone has the right to a non-threatening environment and that reasonable measures must be taken to protect the environment. This includes preventing pollution, promoting conservation and environmentally sustainable development, and supporting socially and economically just development. The principles underpinning NEMA's Duty of Care section reflect those of the Constitution.

3.2. The National Environmental Management Act, 1998 (Act No. 107 of 1998)

NEMA provides for the identification and assessment of activities that may be detrimental to the environment and that require authorisation from the competent authority (in this case, DEA&DP), based on the findings of an EIA. NEMA further embraces the notion of sustainable development as contained in the Constitution of South Africa (Act 106 of 1996), in that everyone has the right:

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected for the benefit of present and future generations through reasonable legislative and other measures.

NEMA also aims to promote cooperative environmental governance by establishing principles for decision-making on all matters relating to the environment, and through Environmental Implementation Plans (EIPs) and EMPs.

Principles contained in Section 2 of NEMA, amongst other things, prescribe that environmental management must:

- In order of priority, aim to avoid, minimise or remedy disturbance to ecosystems and loss of biodiversity;
- Avoid degrading the environment and jeopardising ecosystem integrity;
- Pursue the best practicable environmental option through integrated environmental management;
- Protect the environment as the people's common heritage;
- Control and minimise environmental damage; and
- Pay specific attention to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic or stressed ecosystems.

It is incumbent upon the landowner to ensure that the aforementioned principles, as set out in this EMP, are upheld and complied with.

Listing Notice 1

27: *The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except 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 maintenance management plan.*

The application is for the clearing of 18.4ha of vegetation, which has not been farmed in the last 10 years.

3.3. The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)

The National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) (NEM:WA) deals with the handling, depositing, treatment, processing, recycling, re-use and/or storage of both "general" and "hazardous" waste products. This Act was assented to by the President on 10 March 2009 and enacted on 3 July 2009. Subsequently, all waste-related activities are excluded from NEMA and must be authorised under NEM:WA, if required.

The proposed development will not produce waste only limited quantities of green waste. A Waste License is therefore not required under NEM:WA for the proposed development.

3.4. The Environment Conservation Act, 1989 (Act No. 73 of 1989)

The EIA Regulations contained in the Environment Conservation, 1989 (Act No. 73 of 1989) (ECA) have been replaced by NEMA. However, property owners must comply with the draft regulations pertaining to noise, as published in the Western Cape Provincial Extraordinary Gazette, as provided for in Section 25 of the ECA, as well as with Section 24 of the ECA regarding waste management and Section 20 of the ECA dealing with waste management under Part IV, Control of Environmental Pollution.

3.5. The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEM:BA) governs the management and conservation of South African biodiversity within the framework of NEMA. Among other matters, it addresses the protection of species and ecosystems that warrant national protection, as well as the sustainable use of indigenous biological resources. Sections 52 and 53 of this Act specifically provide for the protection of critically endangered, endangered, vulnerable, and protected ecosystems that have undergone, or are at risk of undergoing, significant degradation of ecological structure, function, or composition resulting from human intervention through threatening processes.

The National List of Threatened Ecosystems (Notice 1477 of 2009, Government Gazette No. 32689, 6 November 2009) was gazetted in 2014. The list of threatened terrestrial ecosystems supersedes the information on terrestrial ecosystem status in the National Spatial Biodiversity Assessment (NSBA) 2004 and 2011.

The proposal will not affect threatened ecosystems and will have a low negative impact on terrestrial biodiversity and plant species.

3.6. The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)

The Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983) (CARA) aims to conserve natural agricultural resources by maintaining the production potential of land, combating and preventing erosion, protecting vegetation, and combating weeds and invasive plant species.

As with NEM:BA, alien invasive plant/ weed species listed under CARA must be controlled and/or removed.

Under Section 6 of the Conservation of Agricultural Resources Act (CARA), a permit to cultivate may be required where land has recovered to indigenous vegetation status, regardless of historical cultivation. This application is facilitated by the Department of Agriculture LandCare office and will be issued by the DAFF. It must be applied for at least 3 months prior to cultivation.

This permit must be obtained by the landowner.

3.7. The National Water Act, 1998 (Act No. 36 of 1998)

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) gives effect to the constitutional right of access to water. The Act's overall purpose is to ensure that South Africa's water resources are protected, used and managed in ways that take into account a number of factors, including inter-generational equity, equitable access, redressing the results of past racial and gender discrimination, promoting sustainable and beneficial use, facilitating social and economic development, and providing for water quality and environmental protection.

The NWA makes persons who own, control, occupy, or use land responsible for taking measures to prevent the pollution of water resources and empowers Government authorities to enforce this obligation.

The proposed cultivation area will be at least 32m from the river's edge. No additional water will be applied for – existing lawful enlisted water will be used for irrigation of the new area. No water use authorisation in terms of Sections 21 (a), (c) or (i) of the National Water Act (NWA) is anticipated. When the applicant has the dam design, a WULA will be required in terms of 21 (b) of the NWA.

3.8. National Heritage Resources Act, 1999 (Act No. 25 of 1999)

The protection and management of South Africa's heritage resources are governed by the National Heritage Resources Act (Act No. 25 of 1999) (NHRA). Heritage Western Cape (HWC) is the enforcing authority in the Western Cape and is registered as a Stakeholder in this environmental process.

The clearing and cultivation of land on a working farm and within an agricultural area will have no heritage impacts and will not affect any nearby heritage resources.

3.9. The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

The Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) provides for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work.

The Applicant would therefore be required to implement appropriate occupational health and safety measures in accordance with the OHSA and applicable regulations, including ensuring that all machinery is operated safely, that workers are adequately trained, and that risks associated with agricultural operations are appropriately managed.

4. DESCRIPTION AND LOCATION OF THE PROPOSED ACTIVITY

An area of approximately 17 ha on Farm 800, Worcester (Vredelust Farm) has been identified for cultivation. The entire site was cultivated in the past, more than 10 years ago.

Two alternative sites have been identified for the development of a dam. The total footprint and storage capacity are not yet established but two sites are broadly defined, approximately 1.4 ha each.

- Site 1 is located within the north-western portion of Farm 800, Worcester.
- Site 2 is located on Farm 31/319, Worcester and comprises of a current cultivated site (therefore no listed activities would occur on this property).

Refer to Figure 1 below.

The properties are located within the De Wet farming area, just on the outskirts of Worcester located within the Breede Valley Municipal Area. Refer to Figure 2 for locality map.

Should the capacity and size of the dam trigger the EIA Regulation 2014, as amended, a **separate** application will be made **once the** design details have been determined. This application is for the clearing of 17ha for cultivation purposes and an additional 1.4ha for the purposes of a dam. All listed activities are located on Farm 800, Worcester.



Figure 1: Proposed cultivation land and dam sites

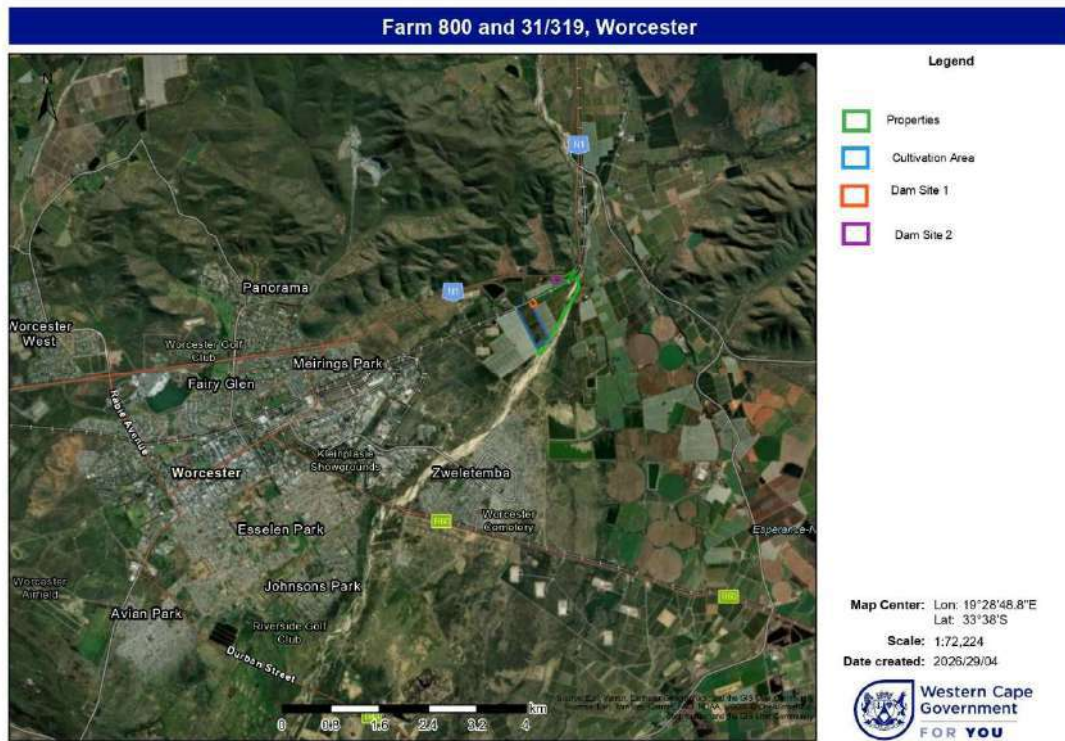


Figure 2: Locality of the site

Water rights

The proposed dam will require a Water Use License in terms of Section 21 (b) of the Water Act for the proposed storage of water. No additional taking of water will be applied for.

4.1. Property Details

The proposed cultivation lands and dam site 1 is located on Farm 800, Worcester. The property is located within the Breede Valley Municipal Area. The landowner is the JRG Farming (Pty) Ltd.

Dam site 2 is located on Farm 31/319, Worcester and comprises of a current cultivated site (therefore no listed activities would occur on this property).

Table 1: Relevant properties

Farm and Portion	Landowner	SG 21 Code	Extent (ha)	Municipality
Farm 800	JRG Farming (Pty) Ltd.	C08500000000080000000	54.83ha	Breede Valley

5. SITE DESCRIPTION AND ENVIRONMENTAL ATTRIBUTES

5.1. Terrestrial Biodiversity and Plant Species

MAPPED VEGETATION

According to the SA Vegetation Map (Mucina and Rutherford 2006 & 2024 update) the entire site (cultivation area and both dam sites) comprised Breede Alluvium Renosterveld prior to any disturbances. Dam site 2 is however currently cultivated and Dam site 1 and the target cultivation area was cultivated in the past. Breede Alluvium Renosterveld is listed as an Endangered ecosystem.

The vegetation within the target cultivation site was classified at a finer scale as Hex River Arid Alluvium Fynbos (considered Endangered) by the CAPE Fine Scale Mapping Project (Helme, N. A. and Freshwater consulting Group, 2007). The northernmost section, including dam site 1, is classified as Worcester Renosterveld Karoo (previously known as Robertson Karoo which is Least Threatened).

HABITAT CONDITION AND VEGETATION ON SITE

Dam site 1: The area targeted for dam site 1 is highly degraded with no significant natural vegetation. The site is dominated by *Cynodon dactylon* (kweek), *Carpobrostus edulis* (suurvy) and *Acacia saligna* (Port Jackson), with scattered individuals of *Athanasia trifurcata* (kouterbos) and the weedy *Senecio burchellii* (geelgibossie). There is an existing small dam / water abstraction pond which is completely overgrown by port jackson. There is currently no representation of the original ecosystem, Breede Alluvium Renosterveld, on site.

Dam site 2: Dam site 2 has no remaining natural vegetation. The site is currently used for cultivation.

Proposed cultivation area: The entire area targeted for cultivation comprises old fields (previous cultivation areas). Remnants of old vineyard and tilling furrows are still evident on site. Subsequent to cultivation the site has been utilised for grazing for many years and the site is currently still utilised for grazing. Previous cultivation occurred more than 10 years ago and some natural vegetation has re-established on site. The site has a history of alien *Acacia saligna* (Port Jackson) infestation with various attempts to eradicate alien vegetation over the years, followed by recurring Port Jackson infestations.

Currently the vegetation on site is highly degraded and natural plant diversity is very low, making it very difficult to distinguish the relevant ecosystem present on site. Considering the substrate, which is loamy sand and cobble, it is assumed that site would have supported Breede Alluvium Renosterveld as depicted in the SA vegetation map. There is no reference vegetation remaining within the immediate vicinity of the site as it is bounded by cultivation.

The southernmost portion, next to the Hex River is open with sparse cover. The most dominant plant species include *Galenea africana* (kraalbos), *Oncosiphon piluliferum* (stinkkruid) and *Cynodon dactylon* (kweek grass) with isolated individuals of *Aspalatus spinosa*, *Psilocaulon junceum* (loogbossie) and *Tetragonia fruticosa* (kinkelbossie). A dense patch of port jackson is evident along the Hex River with another large, dense patch in the south-western portion of the site.

The central portion of the site is characterised by one patch of natural shrubs dominated by *Metalasia densa* (blombos) and *Elytropappus rhinocerotis* (renosterbos) located between 2 large impenetrable stands of port jackson and some open areas. Open areas are dominated by *Cynodon dactylon* (kweek grass), *Eragrostis curvula* (oulandsgras) and *Carpobrotus edulis* (suurvy) with isolated *Galenea africana* (kraalbos), blombos, renosterbos, *Arctotis revoluta* (botterblom) and other species that typically establish within disturbed sites including *Leysera gnaphaloides* (teringteebos), *Oncosiphon piluliferum* (stinkkruid), *Ruschia multiflora* (kraalvygie) and *Senecio burchellii* (geelgifbossie). There is also some remnant vineyard plants and a number of weeds including include *Amaranthus sp.* (misbredie), *Atriplex sp.* (soutbos), *Atriplex semibaccata* (kruipsoutbos), *Chenopodium album* (withondebossie), *Emex australis* (dubbeltjie), *Maireana brevifolia* (kleinblaar bloubos), *Rapistrum rugosum* (wildemosterd) and *Salsola kali* (tolbos) amongst others.

The northern half of the site is fairly open and grassy as this area was used as a grazing paddock for many years. This area is dominated by *Cynodon dactylon* (kweek), *Carpobrotus edulis* (suurvy), *Oncosiphon piluliferum* (stinkkruid) and *Galenea africana* (kraalbos) with isolated individuals of *Athanasia trifurcata* (kouterbos) and *Elytropappus rhinocerotis* (renosterbos). High density port jackson is evident along the northern boundary of the site.

THREATENED PLANT SPECIES

In terms of plant species, the national web based environmental screening tool recognizes the northern portion of the site to be of low sensitivity. The southern portion is of medium sensitivity in terms of plant species. The Screening Tool has listed 23 sensitive plant species that may potentially occur within the medium sensitive areas, based on their habitat requirements and the mapped ecosystems on site (e.g. species previously recorded in the same habitat type).

The onsite assessment confirms that the study area is of “low” sensitivity for terrestrial plant species. None of the Medium Sensitive plant species listed in the Screening Tool nor any other Red Date List plant species were recorded on site. It is highly unlikely that the proposed development will impact on any plant species of conservational concern based on the overall poor habitat condition and low plant diversity.

ALIEN VEGETATION COVER

The site has a history of alien *Acacia saligna* (port jackson) infestation with various attempts to eradicate alien vegetation over the years, followed by recurring port jackson infestations (Refer to **Figure 11-13** for earlier satellite imagery). Cultivation of the site will permanently eradicate alien port jackson from the site but it will remain within the Hex River.

BIODIVERSITY PROCESSES

There are no apparent biodiversity processes directly associated with the target site. The Hex River, located south of the site is an important biodiversity process area. The riverine area and an adequate buffer should be excluded from the development or any disturbances.

5.2. Aquatic Ecosystems

There were no identified wetlands on the proposed cultivation site or dam sites. The Hex River is located to the south of the site identified for clearing and cultivation.

5.3. Biodiversity Mapping

The Hex River is a perennial river that is an aquatic CBA and has associated NFEPA wetlands. The proposed cultivation area has been setback from the Hex River's riverbank by more than 32m to ensure the river is not impacted by the proposed development.

The entire cultivation site and a portion of dam site 1 site is identified as a CBA in terms of the Western Cape Biodiversity Spatial Plan (WC BSP 2023). The Hex River, to the south of the site, is recognised as an aquatic CBA, with degraded areas regarded CBA2.

CBAs are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. ESAs play an important role in supporting the functioning of Protected Areas or CBAs and are often vital for delivering ecosystem services.

The reason for this site being recognised as a CBA is presumably as it is likely to support a near-natural form of an endangered ecosystem and that the preservation of this site should contribute to the preservation of the remaining extent of endangered Breede Alluvium Renosterveld. It is however the specialist's opinion that the site is currently not contributing to the preservation of the original ecosystem on site. It is very unlikely that the site will contribute to the preservation of this ecosystem in future.

The site is therefore considered appropriate for clearing for cultivation and storage of water purposes.

Refer to the Biodiversity Maps included as **Annexure 2**.

5.4. Environmental Sensitivity Map

A map superimposing the proposed activities, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, is included under **Annexure 2** of this EMPr.

6. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

6.1. Impacts of Preferred Alternatives

Below is a summary of the anticipated impacts and risks arising from the environmental aspects of the proposed activities. A summary of the impact assessment undertaken is provided in Table 1.

Table 1. Summary of impacts assessed

Activities	Potential Environmental Impacts	Nature of the impact	Aspect
Clearing of vegetation	Physical transformation natural vegetation	There will be a loss of ± 18.4 ha degraded habitat.	Plant Species and Terrestrial Biodiversity
	Disturbance to Hex River.	The development may indirectly impact on the adjacent Hex River floodplain area. The development will result in the permanent eradication of alien vegetation on site which should reduce spread into riverine areas.	Freshwater systems
	Socio-Economic impacts	The activity supports ongoing agricultural production and contributes to local economic stability, job security and an increase in agricultural produce.	Socio-Economic
	Increase in noise disturbance	Short-term, intermittent noise, typical of agricultural operations.	Noise impacts
	Visual impacts	Visual change is consistent with the existing agricultural landscape.	Visual character of the site

6.2. Mitigation Measures

Measures that apply to areas that have not yet been cleared and are proposed for authorisation are indicated below:

No-Go Areas

- The Hex River floodplain and a 32m buffer area should be excluded from any development or disturbances. The development should be restricted to areas above the paleo-terrace adjacent to the Hex River. Refer to Figure 3.



Figure 3: No Go Area shown as orange polygon

Co-ordinates of Points A – C:

- A: 33°37'30.86"S 19°30'14.03"E
- B: 33°37'32.14"S 19°30'12.53"E
- C: 33°37'29.30"S 19°30'15.39"E

Pre-Construction Phase Measures:

- The development area should be clearly demarcated along the southern portion of the site, adjacent to the Hex River.

Construction and Post Construction Phase Measures:

- Rocks and vegetation debris should not be dumped within the Hex River floodplain area.
- Alien vegetation should continuously be managed and controlled within the Hex River using standard DWAF methodology. The Department of Agriculture Landcare should be consulted regarding alien control along the riverbank to prevent destabilization of the riverbank.

7. ROLES AND RESPONSIBILITIES

The section below outlines the responsibilities of various parties during the development's clearing and operational phases.

7.1. The Competent Authority

In the Western Cape, DEA&DP is the competent authority responsible for issuing Environmental Authorisations (EAs) under NEMA. This Directorate has overall responsibility for ensuring that the Applicant complies with the conditions of its EA and this EMPr once approved.

During the clearing and operational phases of the EMPr, the lead authority will have the following role to play:

- Conduct ad hoc compliance inspections.
- Read the ECO's periodic inspection reports and act as deemed necessary.
- When necessary, the authorities are to assist in understanding and meeting the specified requirements.
- Ensure that suitable corrective measures are undertaken by the Applicant in a timely manner where the Applicant has reported non-compliance, or if an audit report is received indicating any non-compliance.
- Enforce compliance by the Applicant.

7.2. Holder of the EA

The Holder of the EA/the Applicant (i.e. JRG Farming (Pty) Ltd.) is accountable for the potential impacts of the activities undertaken and is responsible for managing these impacts during both the clearing and operational phases. They are responsible for developing and implementing the EA conditions for the planning and design phases.

The Holder of the EA remains fully responsible for implementing and complying with the EMPr and the EA until such time as an application for amendment indicating a change in ownership or a transfer of the EA to another party is submitted to DEA&DP. Only once this amendment application has been approved is this responsibility transferred to the new EA holder.

In addition to the general responsibilities above, the Holder of the EA is also fully and solely responsible for:

- Ensuring that any changes to the project or any aspect thereof, as approved during the S24G process by the issuance of an EA, are communicated to DEA&DP in a timely manner, as they may require amendments to the EA via an amendment application process.
- Appointing the ECO to undertake periodic compliance inspections as described in this EMPr, and an independent environmental auditor, if required by conditions of the EA.
- It is the Holder of the EA's responsibility to notify DEA&DP within 24 hours of any non-compliance with the EA, EMPr, or any other environmental and water-related legislation.
- Taking the necessary action in respect of non-compliances.

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- Ensuring that all the Applicant's staff, representatives, contractors, consultants, and any other agent operating under the Applicant's employ comply with the EA, EMPr, and any other environmental and water-related legislation.
- Ensuring that all necessary authorisations and permits have been obtained.
- Considering the ECO's inspection findings and recommendations and acting within a reasonable timeframe.

7.3. The Farm Manager

The Farm Manager is the Holder of the EA's on-site implementing agent and is responsible for ensuring that the Applicant's obligations under the EA and this EMPr are met on a day-to-day basis. Any on-site decisions regarding environmental management are the responsibility of the Farm Manager, who reports directly to the Holder of the EA (Viljoen Boerdery). Any environmental damage arising from non-compliance with this EMPr will be remedied at the cost of the EA Holder.

The Farm Manager has the following responsibilities:

Before clearing commences:

- Confirm, in conjunction with the Holder of the EA, that all required authorisations and permits have been obtained and that their conditions have been met.
- Where required by the EA, submit a notice of commencement to DEA&DP at least two weeks before clearing starts.
- Ensure that the ECO has been engaged and has access to the site, the environmental file, and any relevant project documentation before clearing commences.
- Facilitate the pre-clearing environmental induction conducted by the ECO for all workers involved in clearing activities and maintain a register of all staff who have attended.

During clearing and operations:

- Ensure that all farm workers and any service providers are familiar with and implement the requirements of this EMPr.
- Ensure that all work occurs within the approved clearing footprint and permitted areas.
- Complete the relevant environmental checklists before commencing each activity category and retain completed checklists in the farm environmental file.
- Ensure that the ECO is made aware of any significant changes to the project or site activities.
- Remove or exclude from the site any person or equipment that poses an environmental risk or does not comply with this EMPr.

Non-compliance and reporting:

- Document any non-compliance or environmental transgression in the farm incident register as soon as it is identified, with a description, photographs where relevant, and the corrective action taken or planned.
- Notify the Holder of the EA of any non-compliance without delay.

- Consider and act on the ECO's observations and recommendations within the timeframe specified.
- Report persistent or serious non-compliance to the Holder of the EA for notification to DEA&DP.
- Raise any environmental concerns with the Holder of the EA and, where necessary, consult the ECO for guidance.

7.4. The Environmental Control Officer

The Environmental Control Officer (ECO) will be an environmental consultant appointed by the Holder of the EA. The role of the ECO is to assist with the monitoring and where possible to provide guidance in terms of environmental matters.

The ECO will regularly monitor and review the on-site environmental management and implementation of the construction phase of this EMPr.

The ECO is not responsible for ensuring or enforcing compliance with the EA, EMPr or any other environmental and water related legislation. This is the responsibility of the Holder of the EA and the authorities. The role of the ECO is that of a monitoring and supportive function and advising the Holder of the EA of non-compliance with respect to the conditions of the EA.

The ECO's duties consist of the following:

- Where required, help in terms of the **Notice of Commencement** to the competent authority, DEA&DP.
- Conducting regular site inspections at the frequency as stipulated in **Section 9.4.1** of this EMPr.
- Monitoring and verifying as far as possible adherence to the EMPr and the EA.
- Monitoring and verifying that environmental mitigation measures are in place where necessary to facilitate keeping environmental impacts to a minimum.
- Reporting to the Holder and the Farm Manager any relevant observations made during site inspections.
- The ECO will report all noted/observed non-compliances with the EMPr and EA to the Farm Manager.
- As far as possible advice the Farm Manager about any environmental matters that may become an issue.
- Reviewing the Contractor's construction method statements together with the Farm Manager.
- The ECO will make recommendations to the Farm Manager, with regards to the issuing of penalties in accordance with the EMPr.
- Assisting with the appointing of the relevant specialists (botanists, wetland specialists, etc.), as required
- Reporting to the Holder on the implementation of the EMPr and compliance with the EA on a regular basis.
- Where necessary, recommending additions and/or changes to the EMPr to the directorate.
- The ECO will draft an Environmental Performance Report monthly (except during shutdown periods).

7.5. The Environmental Auditor

If required by the EA, the Holder of the EA will appoint an environmental auditor. The auditor will be an independent environmental consultant. The auditor will carry out a compliance audit of all activities being undertaken, based on the EA and EMPr.

The auditor will conduct the audit and report findings in accordance with the audit requirements stipulated in the EA. Any audit costs are for the Holder of the EA's account and are in addition to the ECO's services.

8. MANAGEMENT PROCEDURES

8.1. EMPr Reporting

The documentation listed below must be kept on site (digitally) or at the farm offices as part of an Environmental File to record compliance with the EMPr. The Environmental File must include, but is not limited to:

- Copy of the EMPr;
- Copy of the EA;
- Copy of all other relevant licences/permits;
- Copy of all rehabilitation plans (if necessary);
- Environmental checklist records;
- Environmental register, which shall include:
 - Complaints register
 - Incident register, including copies of notifications of Emergencies and Incidents, which must be accompanied by a photographic record
 - Monitoring results
- Waste Documentation, such as Waste Disposal Certificates (if necessary);
- Material Safety Data Sheets for all hazardous substances (if necessary);
- Dust suppression register (if necessary);
- Water Quality Monitoring reports (if necessary); and
- Written Corrective Action Instructions.

8.2. Communication

Open, transparent, and good relations with affected landowners, communities, and regional staff are essential to the successful management and mitigation of environmental impacts.

8.3. Work Hours

Clearing will be limited to daytime hours, where possible (06h00 to 18h00).

8.4. Health and Safety

The Farm Manager shall always comply with the Occupational Health and Safety Act No. 85 of 1993 (OHSA) and ensure adequate safety precautions are in place on the site.

Telephone numbers of emergency services, including the local firefighting service, shall be displayed conspicuously in the Farm Manager's office near a telephone. No weapons (firearms, airguns, daggers, etc.) are permitted on site. The Farm Manager shall ensure that the contact details for local medical services are available to the relevant personnel before work commences.

8.5. Environmental Site Checklists

Given the limited scale and low-risk nature of the proposed agricultural activities, formal method statements are not required for routine activities. Environmental management shall be implemented by adhering to the mitigation measures set out in this EMPr and by completing the site-specific environmental checklists. Where activities are proposed within environmentally sensitive areas or where unforeseen environmental risks arise, a site-specific method statement may be prepared and approved by the responsible ECO prior to commencement of the activity. The checklists cover the following activity categories: work within or near drainage lines; earthworks and soil disturbance; temporary fuel storage; new access tracks; topsoil stockpiling; management of rescued Species of Conservation Concern; and rehabilitation of sensitive areas.

The Farm Manager must complete the relevant checklist before the commencement of each activity and retain the completed checklists in the farm environmental file. Examples are included as Annexure 3.

CHECKLIST 1: Work Within or Near Hex River

- Confirm that the activity falls outside the Hex River 32m riparian buffer (measured from the top of the bank or the outer edge of the riparian zone, whichever is furthest). If not, STOP and notify the ECO.
- Confirm no-go markers are in place and visible along the buffer edge.
- Confirm no earthmoving machinery will enter the buffer zone.
- Ensure erosion controls are in place on slopes draining toward the watercourse.
- Confirm no fuels or agricultural chemicals will be mixed or stored within 50 m of any watercourse or drainage line.
- Inspect the buffer after any significant rainfall event for signs of erosion and rectify within 30 days.

CHECKLIST 2: Soil Disturbance and Earthworks (Includes Deep Ripping, Land Preparation)

- Confirm activity is within the approved clearing footprint.
- Topsoil has been separately stripped and stockpiled (see Checklist 4) before subsoil disturbance.
- No earthworks scheduled during forecast rain events.
- Erosion controls installed at the downslope edge of the disturbance.
- Exposed soil stabilised within 48 hours where possible (cover crop, mulch, or rock packing).
- No debris or soil pushed into drainage lines or riparian areas.

CHECKLIST 3: Temporary Fuel and Chemical Storage

- Fuel and agricultural chemicals stored in a bunded area with an impermeable base, at least 50 m from the Hex River and any drainage line.
- Storage area labelled and fitted with a drip tray or bund capable of holding 110% of the largest container volume.

- Material Safety Data Sheets for all stored chemicals are available on site.
- No fuel or chemical storage areas located within a no-go zone.
- Spill kit available in proximity to fuel storage.
- Empty chemical containers are disposed of at an approved facility, not burned or dumped on site.

CHECKLIST 4: Topsoil Stockpiling

- Stockpile location confirmed to be outside no-go zones, drainage lines, and the Hex River buffer.
- Stockpiles not to exceed 2 m height to minimise compaction and erosion risk.
- Stockpile edges are protected with silt fencing or berms to prevent wash-off during rain events.
- Stockpile seeded with a cover crop or covered with shade cloth if not used within 30 days.
- Topsoil stockpile area noted on farm sketch/site plan and included in environmental file.

CHECKLIST 5: New Farm Access Tracks

- Existing tracks must be used
- If new tracks are required, they must avoid no-go zones and the Hex River buffer area.
- Track aligned along contour where possible; water bars or cross-drains installed on slopes > 5%.
- No track drainage outlets are directed toward the Hex River or its riparian zone.
- Track surface stabilised (gravel, rock, or compacted surface) to prevent erosion.
- Vegetation clearing for the track is confined to the minimum required width (typically not more than 5 m).

CHECKLIST 6: Rehabilitation

- Areas to be rehabilitated identified on a simple site sketch and included in the environmental file.
- Only locally occurring indigenous species are to be used for re-vegetation (no alien or horticultural species).
- Rehabilitation undertaken during or before the onset of the winter rainfall season.
- Rehabilitated areas fenced off from vehicle and machinery access for at least one growing season.

CHECKLIST 7: Emergency Response

Note: A full Emergency Response Action Plan (ERAP) is not required for routine vegetation clearing on an existing farm. The above checklist is proportionate to the scale and nature of risk associated with this activity.

- Emergency contact numbers are posted in the farm office and tractor cab: local fire station, 112 (emergency), nearest hospital or clinic, ECO contact number, and DEA&DP duty line (0800 205 005).

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- Chemical or fuel spill: stop the source; contain the spill with available dry material (sand, soil) or absorbent pads; prevent run-off from reaching any drainage line or river buffer; notify the ECO within 24 hours; record the incident, date, time, and actions taken in the environmental file.
- Fire during clearing or operations: call 112 and the local fire station immediately; attempt to control only if it is safe to do so using available fire-fighting equipment; evacuate workers; notify the ECO and Holder of the EA on the same day; record the incident.
- Worker injury: call 112 or transport to the nearest emergency facility; complete an incident report in the environmental file; notify the Holder of the EA immediately.
- Inadvertent damage to a no-go area or riparian buffer: stop all work in the affected area immediately; notify the ECO by telephone within 24 hours and by written record within 48 hours; do not attempt remediation without ECO guidance.
- Chance find of archaeological material, graves, or artefacts: stop work in the affected area immediately; mark the area; notify Heritage Western Cape and the ECO; do not resume work in that area without written authorisation.
- All emergency incidents must be recorded in the farm incident register within 48 hours, with date, time, nature of incident, actions taken, and photographs where possible.

9. IMPACT MANAGEMENT OUTCOMES AND ACTIONS

This section of the report prescribes mitigation measures to reduce, limit, eliminate or compensate for impacts, bringing them to acceptable or insignificant levels. When setting mitigation measures, the practical implications of implementing them must be considered. With early planning, both costs and impacts can be minimised.

9.1. Design Phase

It is recommended that sustainable design considerations are implemented during the planning phase to ensure that the impacts associated with the development are avoided, minimised or managed before clearing commences.

The pre-clearing or planning management plan is to be used as a guide during the planning, design and detailing of the development components. This part of the plan is to be referenced by all involved in decision-making during the planning and design phases.

9.1.1. Environmental Induction and Awareness Training

Before clearing commences, the ECO or Farm Manager shall conduct a brief environmental awareness induction with workers involved in clearing activities. The induction may be conducted in the language most widely spoken among the workforce. The presentation shall be conducted, to the extent possible, in the employees' language of choice.

As a minimum, training should include:

- Explanation of the specifics of this EMPr and its specification (no-go areas, etc.)
- Explanation of the importance of complying with the EMPr.
- Discussion of the potential environmental impacts of clearing activities.
- Explanation of the management structure of individuals responsible for matters pertaining to the EMPr.
- Employees' roles and responsibilities, including emergency preparedness.
- Explanation of the mitigation measures that must be implemented when carrying out their activities.
- Awareness regarding minimising waste.

Where staff turnover is high, it may be necessary to undertake additional induction training sessions. The Farm Manager must keep records of all environmental training sessions, including names, dates and the information presented.

Notwithstanding the specific provisions of this section, it is incumbent upon the Farm Manager to convey the principles of the EMPr's to all personnel involved in the works.

9.1.2. No-Go areas

The No-Go areas, as indicated in Figure 3, must be implemented.

Management Outcome: Access to No-Go areas is prevented.	
Management Actions:	
- Additional no-go areas may be identified during the pre-clearing walkthrough and must be demarcated accordingly. - Erect, demarcate and maintain a temporary fence or no-go markers along the perimeter of any No-Go area. - Unauthorised access and development-related activity inside No-Go areas is prohibited.	
Implementation:	
Responsible party:	Farm Manager and ECO
Method of implementation:	- No-Go area demarcation must be carried out as per Figure 3. This must be enforced during the clearing phase. - The Farm Manager may declare additional No-Go areas at any time during clearing as deemed necessary and/or at the request of the ECO
Timeframe for implementation:	Prior to commencement and throughout the clearing.
Monitoring:	
Responsible person:	Farm Manager or ECO
Frequency:	ECO must confirm no-go area boundaries prior to the commencement of the clearing phase and whenever there are significant changes to the site layout plan.
Evidence of compliance:	ECO to obtain records from the Farm Manager and Compliance Monitoring Report.

9.1.3. Site facilities

Management Outcome: Workers have access to adequate sanitation, eating areas, and potable water throughout all activities, using existing on-farm facilities where available.	
Management Actions:	
<u>Ablution facilities:</u>	
- Workers must use existing on-farm ablution facilities. Where work is undertaken far from farm buildings, a portable toilet or designated sanitation area (cat-hole trench with lime, away from watercourses) must be provided; - The use of ablution facilities and/or mobile toilets must always be used, and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; - Where mobile chemical toilets are required, the following must be ensured: - Toilets are located no closer than 100 m to any watercourse or water body; - Toilets are secured to the ground to prevent them from toppling due to wind or any other cause. - No spillage occurs when the toilets are cleaned or emptied, and the contents are managed in accordance with the EMPr; - Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out. Toilets are emptied before long weekends and workers' holidays and must be locked after working hours. - Toilets are serviced regularly, and the Farm Manager must inspect toilets to ensure compliance with health standards. - Copies of the waste disposal certificates must be maintained in the Environmental File.	
<u>Eating areas:</u>	
- Adequate temporary shade must be provided within the clearing areas. - Suitable refuse bins must be provided at all eating areas to the satisfaction of the Farm Manager. - If deemed necessary by the Farm Manager, the Farm Manager shall demarcate designated eating areas. - No feeding of wild animals shall be permitted. Food and food products are to be stored so as not to attract scavenging animals.	
<u>Water provision:</u>	
- Safe drinking water fit for human consumption must be provided at the site offices and all other working areas. - All drinking water must be from a legal source and comply with recognised standards for potable use. - The provisions of the National Water Act, 1998 (Act No. 36 of 1998) and its Regulations for taking water from natural water resources must be complied with.	

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- No water may be abstracted from streams, rivers, wetlands or boreholes unless the necessary water use authorisations are in place.
- If water is stored on site, drinking water and multi-purpose water storage facilities shall be clearly distinguished and demarcated.
- No water is to be wasted on site. Any leaks are to be reported and repaired immediately. All pipes, taps and associated infrastructure are to be maintained in good working order.

Implementation:

Responsible party:	The Farm Manager (where necessary).
Method of implementation:	The Farm Manager must ensure that all the above actions are implemented.
Timeframe for implementation:	Prior to the commencement of the clearing phase.

Monitoring:

Responsible person:	ECO
Frequency:	Prior to the commencement of the clearing phase and whenever there are significant changes to the site layout plan.
Evidence of compliance:	ECO to obtain records from the Contractor/Farm Manager and report in Compliance Monitoring Report.

9.1.4. Handling of substances

Management Outcome:	The Farm Manager's management and maintenance of substances and machinery will be strictly monitored against the criteria set out below.	
Management Actions:	All necessary handling and safety equipment for the safe use of petrochemicals and oils shall be provided by the Farm Manager and used or worn by the staff responsible for managing and maintaining the machinery and equipment. The Farm Manager must comply with the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and the Construction Regulations, 2003, as these govern what the contractor must do/provide for his staff. Petrochemicals, oils and identified hazardous substances shall only be stored under controlled conditions. All hazardous materials will be stored in a secured, appointed area that is fenced and has restricted entry. Storage of hazardous products shall take place only in suitable containers approved by the ECO. In addition, hazard signs indicating the nature of the stored materials shall be displayed on the storage facility or containment structure. Fuel should be stored in a secure area in a steel tank, supplied and maintained by the contractor, in accordance with safety procedures. Gas welding cylinders and LPG cylinders should be stored in a secure, well-ventilated area. The contractor must supply sufficient firefighting equipment in the event of an accident, and no smoking will be allowed where fuel is stored and used.	
Implementation:		
Responsible party:	The Farm Manager	
Method of implementation:	The Farm Manager will ensure that all the above management actions are complied with and implemented.	
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.	
Monitoring:		
Responsible person:	The Farm Manager and ECO	
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.	
Evidence of compliance:	• The Farm Manager/Contractor to ensure compliance. • The ECO to provide details in Compliance Monitoring Report.	

1.1.1 Site safety and security

Management Outcome:	All safety and security measures are in place.
Management Actions:	• The construction site should be secured against unauthorised entry. • All personnel must be adequately trained and informed in the tasks that they are expected to perform. This is required for their own safety as well as the safety of colleagues and other interested and/or affected parties.

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- No unauthorised personnel shall be allowed onto site. - The contractor must ensure that his equipment is protected. - Solid and construction waste should not accumulate on site as this could attract rodents and poses a safety hazard. - All excavated areas and/or holes should be clearly demarcated. - Maintain environmental incidents register in which all environmental incidents (e.g. accidental spillages etc.) are logged.	
Implementation:	
Responsible party:	Farm Manager
Method of implementation:	- The Contractor/Farm Manager shall always observe the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and ensure adequate safety precautions on the site. - The contractor/Farm Manager will be responsible for the supervision of construction personnel on site during the construction phase.
Timeframe for implementation:	Throughout the construction phase.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Throughout the construction phase.
Evidence of compliance:	- The Farm Manager must keep record of all construction personnel on site. - ECO to provide details of any safety or security incidents in Compliance Monitoring Report.

1.1.2 Public safety

Management Outcome:		All precautions are taken where possible to minimise the risk of injury, harm or complaints.
Management Actions:		
- Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. fuels etc.; - All unattended open excavations must be adequately fenced or demarcated; - Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed structures and protective scaffolding; - Ensure structures vulnerable to high winds are secured; - Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.		
Implementation:		
Responsible party:	Farm Manager	
Method of implementation:	- The Contractor/Farm Manager shall always observe the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) and ensure adequate safety precautions on the site. - The Contractor/Farm Manager will be responsible for the supervision of construction personnel on site during the construction phase.	
Timeframe for implementation:	Throughout the construction phase.	
Monitoring:		
Responsible person:	Farm Manager and ECO	
Frequency:	Throughout the construction phase.	
Evidence of compliance:	- The Farm Manager must keep record of all construction personnel on site. - ECO to provide details of any safety or security incidents in Compliance Monitoring Report.	

9.2. Clearing Phase

These Clearing Phase requirements are intended to apply Best Practice Principles and/or specialist recommendations to manage environmental impacts during clearing activities. The Farm Manager is responsible for ensuring the mitigation measures in this EMPr are implemented during all clearing, cultivation, and maintenance activities.

9.2.1. Access roads and movement of vehicles

Management Outcome:		Minimise environmental impact through the planned and restricted movement of vehicles on site.
Management Actions:		
• Traffic along public roads must always be accommodated. • Activities and deliveries may not interfere with the public road system. • All the required signage and hazard warnings are to be put in place. • All drivers must be in possession of an appropriate and valid driver's licence. • All relevant vehicles must be roadworthy and in an acceptable working condition. • Access points to and from the site as well as roadways in front of the site are to be kept clean and free from stone, sand and grit. These areas must be swept regularly. • All vehicles, when on site and on the surrounding property, will not exceed the speed of 25 km per hour to ensure the safety of vehicles, personnel and the environment and to lessen environmental degradation. Drivers who exceed the speed limit must be fined or dismissed by the Farm Manager. • Access to the site must be gained at the designated areas as determined by the Farm Manager. As far as is possible, use should be made of existing haul routes, tracks and roads. The creation of shortcut paths/routes or temporary vehicular tracks should be at the Farm Manager's discretion. • Vehicles may not be parked or driven within 32m of a watercourse, unless along an existing route/track.		
Implementation:		
Responsible party:	The Farm Manager	
Method of implementation:	• The Farm Manager must ensure that all the management actions are implemented. • The Farm Manager must ensure that all vehicles remain on designated farm access routes. • Should there be a need to undertake work that will impact traffic, the Farm Manager must ensure that all the required permissions have been obtained from the traffic authorities in writing. • The Farm Manager is responsible for ensuring that all vehicles are roadworthy.	
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.	
Monitoring:		
Responsible person:	ECO	
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.	
Evidence of compliance:	ECO to confirm during periodic inspection.	

9.2.2. Movement of personnel, labourers and equipment

Management Outcome:		Management and control of clearing personnel, labourers and equipment.
Management Actions:		
- The Farm Manager must ensure that all personnel, labourers and equipment remain within the relevant property. - Where personnel and/or equipment wish to move outside the boundaries of the property, the contractor/labourers must obtain permission from the Farm Manager.		
Implementation:		
Responsible party:	The Farm Manager	
Method of implementation:	The Farm Manager will ensure that all the above management actions are complied with and implemented.	

Timeframe for implementation:	Farm Manager: throughout the clearing phase.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.2.3. Vehicles and equipment maintenance

Management Outcome: Soil, surface water and groundwater contamination are minimised.	
Management Actions:	
- All heavy earth-moving and transport vehicles and equipment must be kept in good working order with no leaking hydrocarbon fuel, fluids or lubricant emanating from these vehicles. Any leaks or similar mechanical problems are to be reported and repaired immediately. - All emergency maintenance and refuelling must take place at designated impervious areas and are prohibited from any watercourses. In addition, drip trays must be used for all refuelling and similar activities. This is to prevent any spillage from contaminating the environment. - No servicing of vehicles may take place at the site to avoid accidental oil or lubricant spillages from occurring. An emergency spill kit must, however, still be kept at the site in case of accidental spillage. - Should emergency maintenance be required, all precautions will be taken to prevent environmental impact. - Drip trays shall be used to collect used oil, lubricants, etc. during maintenance. Drip trays shall be provided for all stationary plant, generators, pumps and compressors. Drip trays shall be inspected and emptied daily and closely monitored during rain events to ensure that they do not overflow. All waste material in bunds and drip trays is to be managed as hazardous waste. All static plant (stationary > 6 months) shall be located within a bunded area with an impermeable surface. - Washing of vehicles and plant shall be restricted to urgent maintenance requirements only. Adequate wastewater collection facilities shall be provided. The use of detergents for washing shall be restricted to low-phosphate, low-nitrate detergents and low-suds detergents.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	- The Farm Manager will ensure that all the above management actions are complied with and implemented. - The Farm Manager will ensure that drip trays are always used and that there are enough drip trays available on site.
Timeframe for implementation:	Farm Manager: throughout the clearing phase.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.2.4. Storage, handling, use and disposal of materials

Management Outcome: Safe storage, handling, use and disposal of substances.	
Management Actions:	
The Farm Manager's management and maintenance of his plant and machinery will be strictly monitored according to the criteria given below, regardless of whether it is serviced on the site (i.e. at the place of the activity or at a formalised workshop) or not. Storage and/or handling of chemicals is prohibited within watercourses or within 32 m of a watercourse.	
Hazardous materials:	
- The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; - All hazardous substances will be stored in a suitable container; - Containers will be clearly marked to indicate contents, quantities and safety requirements; - All storage areas will be bunded. The bunded area will be sufficiently large to contain a spill/leak from the stored containers;	

- An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis;
- All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS);
- All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet.
- Employees handling hazardous substances/materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available.
- Where refuelling away from the dedicated refuelling station is required, a mobile refuelling unit must be used. Appropriate ground protection, such as drip trays, must be used.
- An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substances must always be available;
- The responsible operator must have the required training to make use of the spill kit in emergency situations.
- In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008). Refer to **Section 9.2.6.** for procedures concerning wastewater management and **Section 9.2.5.** for solid waste management.

Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager will ensure that all the above management actions are complied with and implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and EECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	• The Farm Manager is to ensure compliance. • The ECO is to confirm this during periodic inspection.

9.2.5. Solid waste management

Management Outcome:	Wastes are appropriately stored, handled, and safely disposed of at a licensed waste facility.
Management Actions:	
• The Farm Manager is responsible for ensuring that all farm workers and any service providers adhere to the waste management requirements and all relevant legislation. • The Farm Manager shall ensure that all facilities are maintained in a neat and tidy condition, and the site shall be kept free of litter. Measures shall be taken to reduce the potential for litter and negligent behaviour regarding the disposal of all refuse. • The Farm Manager must ensure that there is no littering. • Solid waste may be temporarily stored on site in a designated area approved by the Farm Manager prior to collection and disposal, within an appropriate containment structure. If a waste skip is to be used for this purpose, it must be kept covered with shade cloth. • Solid waste must be removed as often as required (when the containment area is full) or as instructed by the Farm Manager or ECO to a licensed waste disposal site. Recyclable waste should be separated and, if possible, recycled, and on-site opportunities should be provided to facilitate its collection. Staff should be trained in waste segregation and storage. Arrangements should be made with the relevant recycling companies for the transportation or collection of various types of waste. • Bins shall be covered, tip-proof, weatherproof and scavenger-proof. • Domestic Waste ○ The Farm Manager shall provide refuse bins with lids to the satisfaction of the Farm Manager for all clearing areas. Refuse shall be collected and removed from all areas at least twice per week or as requested by the Farm Manager or ECO. Domestic waste shall be transported to the approved refuse disposal site in covered containers or trucks. • Clearing Rubble / Waste ○ Inert clearing rubble shall be disposed of at a site approved by the Farm Manager. The Farm Manager will be responsible for ensuring that the contractor disposes of the rubble at the approved site and that it can be legally disposed of there. Rubble stockpiles will be kept consolidated and at a reasonable size. Rubble will be removed regularly and/or at the request of the ECO. ○ Clean building rubble free from plastic, wood, wire, metal, tar, asphalt or similar material may be crushed and reused for specific purposes (e.g. road sub-base, concrete, etc.) within the parameters set in the National Environmental Management: Waste Act 59 of 2008 (as amended) (NEM:WA). Rubble may not be buried on site for the sake of easy disposal.	

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○ All other solid waste or contaminated materials shall be disposed of off-site at an approved landfill site. The Farm Manager shall provide the Farm Manager with certificates of disposal or similar proof indicating legal disposal. Copies of these will be provided to the ECO. ○ Any crushing and reuse of clean building rubble must fall within the thresholds allowed in terms of the NEM:WA. All local bylaws must be adhered to. Should the required volumes and area exceed these parameters, a Waste Licence will be required under the Act.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	• The Farm Manager will ensure that all the above management actions are complied with and implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	• The Farm Manager is to ensure compliance. • The ECO is to confirm this during periodic inspection.

9.2.6. Erosion Control

Management Outcome:		Undertake responsible water use and erosion prevention through stormwater management practises.
Management Actions:		
• Wastewater from activities such as washing tools, batching and similar activities will be collected in a drum or container. • At no point will waste water from tool washing or similar sources be permitted to enter or be disposed of, <i>inter alia</i>, in the following manner: ▪ Into a stormwater system. ▪ Directly onto bare soil. ▪ Within 32 m of a wetland. ▪ Into a watercourse or on the bank of a watercourse. • Stormwater management must be addressed both in terms of flooding and pollution potential; no stormwater runoff from any premises containing waste, or water containing waste/chemicals emanating from activities and premises, may be discharged into a water resource. Polluted stormwater must be contained. • Any signs of erosion resulting from the project activities must be rectified immediately and monitored thereafter to ensure that there is no re-occurrence. • All affected areas resulting from the proposed activity, and that are not part of the proposed activity, should be re-vegetated with locally occurring native species to bind the soil and limit erosion potential.		
Implementation:		
Responsible party:	Farm Manager	
Method of implementation:	• The Farm Manager will ensure that all the above management actions are complied with and implemented.	
Timeframe for implementation:	• Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.	
Monitoring:		
Responsible person:	The Farm Manager and ECO	
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.	
Evidence of compliance:	• The Farm Manager is to ensure compliance. • The ECO is to confirm this during periodic inspection.	

9.2.7. Stockpiling and stockpile areas

Management Outcome:		To reduce erosion and sedimentation.
Management Actions:		
• All material that is excavated during the project development phase must be stored appropriately on site to minimise impacts to watercourses;		

- Topsoil should be stockpiled separately from all other materials for later re-use.
- All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods;
- No stockpiling of materials that could leach out and cause pollution may occur;
- Stockpiles must not exceed 2 m in height;
- During the clearing phase, but particularly during periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g. cloth, tarpaulin, etc.) in order to prevent erosion generation resulting in smothering of crops and sedimentation of watercourses;
- Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material to prevent erosion of the material.
- Stockpiles shall be positioned and sloped to create the least visual impact.
- No foreign material generated/deposited during clearing shall remain on site on completion. Areas affected by stockpiling shall be reinstated to the satisfaction of the Farm Manager.
- As dealt with under the dust control section of this document, stockpiles may need to be covered as a dust control measure;
- No stockpiling will take place within 32 m of any watercourse.

Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager will ensure that all the above management actions are complied with and implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	• The Farm Manager is to ensure compliance. • The ECO is to confirm this during periodic inspection.

9.2.8. Vegetation

Management Outcome: Vegetation clearing.	
Management Actions: • Alien vegetation should continuously be managed and controlled within the Hex River using standard DWAF methodology. The Department of Agriculture Landcare should be consulted regarding alien control along the riverbank to prevent destabilization of the riverbank. Active alien clearing and management. • Care must also be taken to prevent the further introduction and spread of any new alien species. If any new aliens establish on site, they must be removed using approved clearing methods. • Regular monitoring must follow any alien species removal to prevent regrowth/reestablishment and ensure seedbanks become depleted.	
Implementation:	
Responsible party:	Farm Manager
Method of implementation:	• The Farm Manager must ensure that all the management actions above are implemented. • The Farm Manager shall be responsible for informing all employees about the need to prevent any harmful effects on natural vegetation to be retained on the clearing site or beyond the site boundaries because of their activities.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	ECO to confirm this during periodic inspection.

9.2.9. Protection of fauna

Management Outcome: Minimise disturbance to fauna.	
Management Actions:	
- The Farm Manager shall ensure that no hunting, trapping, shooting, poisoning or other disturbance of any fauna takes place. - The feeding of any wild animals is prohibited. No food or food products will be stored in a way that attracts scavengers. - No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; - The use of pesticides is prohibited unless approved by the Farm Manager - Drainage structures (e.g. ditches) must be designed, as far as possible, so that they do not act as pitfall traps for small creatures. They should either have gently sloping edges or be adequately covered to prevent creatures from falling into them. - Any animals encountered during site preparation and clearing activities should be left unharmed and allowed to safely move to natural areas.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager must ensure that all the management actions above are implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	ECO is to confirm this during periodic inspection.

9.2.10. Protection of watercourses

Management Outcome: Prevent pollution and contamination of the watercourse environment, prevent erosion, ensure no impediment to flow and protect aquatic habitat.	
Management Actions:	
- All water courses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, oils, fuels, agricultural chemicals, contaminated wash water, or organic waste resulting from the Farm Manager's activities. - In the event of a spill, prompt action must be taken to clear the polluted or affected areas. - The development area should be clearly demarcated along the southern portion of the site, adjacent to the Hex River. - The Hex River floodplain and a 32m buffer area should be excluded from any development or disturbances. The development should be restricted to areas above the paleo-terrace adjacent to the Hex River. - Rocks and vegetation debris should not be dumped within the Hex River floodplain area. - Alien vegetation should continuously be managed and controlled within the Hex River using standard DWAF methodology. The Department of Agriculture Landcare should be consulted regarding alien control along the riverbank to prevent destabilization of the riverbank.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager must ensure that all the management actions above are implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	ECO is to confirm this during periodic inspection.

9.2.11. Protection of Heritage Resources

Management Outcome: Protection of heritage resources, archaeological remains and unmarked graves.	
Management Actions:	
- If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, marine shells, stone artifacts and bone remains, structures and other built features, rock art and rock engravings) are discovered on the property, they must immediately be reported to Heritage Western Cape and must not be disturbed further until the necessary approval has been obtained from HWC. - If any unmarked graves or buried archaeological heritage resources are uncovered or exposed during bulk earthworks, these must immediately be reported to Heritage Western Cape (Att: Stephanie Barnardt 021 483 9685). Burials must not be disturbed further until the necessary approval has been obtained. An archaeologist must be contracted to remove the remains at the Landowner's expense. - In the event important fossil material is found during excavations, the HWC Fossil Finds Procedure must be implemented.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager must ensure that all the management actions above are implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	ECO is to confirm this during periodic inspection.

9.2.12. Fire Prevention

Management Outcome: Prevention of uncontrolled fires.	
Management Actions:	
- The Farm Manager shall ensure that basic fire-fighting equipment is available on the farm. The workforce should be appropriately trained to use all equipment. - Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include any workshop and fuel storage areas and areas where the vegetation or other material may promote the rapid spread of an initial flame. A fire extinguisher of the appropriate type must be present when welding or other "hot" activities are undertaken. - Burning of green waste must comply with any applicable by-laws, fire protection rules and fire danger restrictions. - Any work that requires the use of fire or open flame may only take place at a designated area approved by the Farm Manager and must always be supervised. Serviced fire-fighting equipment shall be available.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	- The Farm Manager will ensure that all the above management actions are complied with and implemented. - The Farm Manager shall take all reasonable steps to avoid increasing the risk of fire through activities on site.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.2.13. Dust Control

Management Outcome: Dust-prevention measures are implemented to minimise dust generation.	
Management Actions:	
- The creation of nuisance/precipitant dust is controlled by the National Dust Control Regulations (R.827, 1 November 2013) promulgated under the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) (NEM:AQA). The Farm Manager will ensure that the specifications of these regulations are always met. - Take all reasonable measures to minimise the generation of dust because of project development activities to the satisfaction of the ECO. - Exposed surfaces must be re-vegetated or stabilised as soon as is practically possible. - Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present. - During high wind conditions, the Farm Manager will evaluate the situation and make recommendations as to whether dust damping measures are adequate or whether working will cease altogether until the wind speed drops to an acceptable level. - Where possible, soil stockpiles must be in sheltered areas where they are not exposed to the erosive effects of the wind. - Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO. - Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water, particularly during prolonged periods of dry weather in summer. - Vehicle speeds must not exceed 40 km/h along dust roads or 20 km/h when traversing unconsolidated and non-vegetated areas.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	- The Farm Manager will ensure that all the above management actions are complied with and implemented. - The Farm Manager shall ensure that the generation of dust is minimised and shall implement a dust control programme.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.2.14. Noise Control

Management Outcome: To prevent unnecessary noise to the environment by ensuring that noise from clearing activity is mitigated.	
Management Actions:	
- Operating hours must be limited to daylight hours. - The Farm Manager shall be responsible for compliance with the Western Cape Noise Control Regulations, 2013 and all other relevant legislation with respect to noise. - The Farm Manager shall endeavour to keep noise-generating activities to a minimum. - Clearing processes and machinery/vehicles with the lowest noise emission values available must be utilised. - A well-planned and co-ordinated "fast track" procedure must be implemented to complete the total clearing process in the shortest possible time. - No sound amplification equipment (hooters, loud music speakers, sirens, etc.) is to be used on site except in emergencies.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	- The Farm Manager will ensure that all the above management actions are complied with and implemented. - The Farm Manager shall be responsible for compliance with the Western Cape Noise Control Regulations, 2013 and all other relevant legislation with respect to noise.

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Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.2.15. Visual aspects or aesthetics

Management Outcome: Neat and well-maintained site to minimise visual impacts.	
Management Actions: - All clearing areas must always be kept neat and tidy. - Different materials and equipment must be kept in designated areas, and storing/stockpiling shall be kept orderly.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager will ensure that the site is neat and well-maintained.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.2.16. Site clean-up and rehabilitation

Management Outcome: No environmental degradation may occur as a result of the development.	
Management Actions: - The Farm Manager shall ensure that all temporary structures, equipment, materials, waste and facilities used for clearing activities are decommissioned and removed upon completion of the activity. - The Farm Manager will undertake all rehabilitation of disturbed and bare areas to the satisfaction of ECO. - Expenses incurred in rehabilitating the site shall be to the Applicants' account. - The Applicant will be responsible for any costs resulting from rehabilitation required due to non-compliance with this EMPr. - All areas outside the approved clearing footprint that were inadvertently disturbed (including vehicle tracks, field margins, and topsoil-stripped areas) must be re-vegetated within one growing season of disturbance. - Rehabilitation must use locally occurring indigenous plant species. No alien or exotic species may be used. - Bare or compacted soil along the edges of cultivated fields adjacent to the Hex River buffer must be stabilised using cover crops, rock packing, or brush packing to prevent erosion and encroachment of alien plants.	
Implementation:	
Responsible party:	The Farm Manager
Method of implementation:	The Farm Manager will ensure that all the above management actions are complied with and implemented.
Timeframe for implementation:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only. and before the onset of the rainfall season
Monitoring:	
Responsible person:	The Farm Manager and ECO
Frequency:	Farm Manager: throughout the clearing phase. ECO: at milestone inspections only. and thereafter on an ongoing basis.
Evidence of compliance:	- The Farm Manager is to ensure compliance. - The ECO is to confirm this during periodic inspection.

9.3. Post Clearing Phase

The post-clearing phase of this EMPr refers to the day-to-day management activities required to ensure sustainability and the achievement of the development's principles and objectives. The requirements apply to the proponent, all employees, and all visitors to the property.

9.3.1. Alien Management and Clearing

Management Outcome:	
To control and reduce invasive alien vegetation on site	
Management Actions:	
- The alien vegetation control measures should be carried out according to the guidelines as laid out on the Working for Water website (https://www.dwaf.gov.za/wfw/Control/) and in terms of the Conservation of Agricultural Resources Act, (Act 43 of 1983), Regulation 15E. - Follow-up alien vegetation control measures will need to be ongoing and for several years at least, depending on the site conditions. - Alien clearing must be executed with caution and in a manner that will cause the least possible damage to the environment.	
Implementation:	
Responsible party:	Farm Manager/Applicant
Method of implementation:	The Applicant/Farm Manager will ensure that all the above management actions are complied with and implemented.
Timeframe for implementation:	Ongoing
Monitoring:	
Responsible person:	The Applicant/Farm Manager
Frequency:	Follow-up clearing should take place at least annually.
Evidence of compliance:	The Applicant/Farm Manager is responsible for ensuring compliance.

9.4. Monitoring

Monitoring is an important tool in determining the effectiveness of management actions by measuring changes in the environment. The successful implementation of impact mitigation measures to reduce adverse impacts on environmental conditions needs to be ensured through a proper monitoring programme. Monitoring of the overall implementation and adherence to the EMPr shall be the responsibility of the ECO during the Clearing and Rehabilitation Phase. Reporting on adherence to and compliance with stipulations communicated to contractors shall take place during scheduled site meetings.

9.4.1. ECO Compliance Monitoring and Frequency

The Holder of the EA and Farm Manager are responsible for day-to-day compliance with this EMPr throughout all phases. The appointed ECO will undertake EMPr compliance monitoring to ensure that the EMPr is implemented throughout the development/rehabilitation phase of the proposed development. The findings and outcomes of these audits will be recorded in the ECO inspection record that will be submitted to the competent authority at intervals as indicated in the EA.

The ECO will undertake compliance inspections at the following minimum frequency:

- (1) Pre-clearing inspection to confirm no-go area demarcation are in place before machinery moves;

- (2) Once a month during clearing and rehabilitation activities.
- (3) Post-clearing inspection within 30 days after completion of clearing and rehabilitation.

9.4.2. Monitoring methods

Monitoring methods must be practical and proportionate to the scale of activity. Fixed-point photography is the primary monitoring tool: the Farm Manager photographs no-go areas and cleared field margins at least annually and retains these in the environmental file.

Photographs must be taken during each ECO site visit.

9.4.3. Environmental Audits

The Holder of the EA (e.g. the Applicant) must, for the period during which the EA and EMPr remain valid, ensure that compliance with the conditions of the EA and the EMPr is audited and submit an Environmental Audit Report to the relevant competent authority.

Submission of the final Environmental Audit Report to the competent authority will indicate the end of the development phase.

The following table provides a summary of the timeframes for the various Audit Reports specified in the EA.

Table 3: Summary of Audit Report timeframes.

ENVIRONMENTAL AUDIT TIMEFRAMES	
Type	Timeframe
Construction Audit	Within 1 month from commencement of clearing related activities and every 3 months during clearing activities
Final Construction Audit	Within 3 months from completion of construction and rehabilitation activities.

In terms of the NEMA EIA Regulations, 2014 (as amended) Audit Reports must be submitted to the registered Interested & Affected Parties within 7 days of submission to the competent authority.

The Environmental Audit Report must contain all information set out in Appendix 7 of the NEMA EIA Regulations, 2014 (as amended). Any other requirements of the EA or any other authorisations must be incorporated into an Audit where necessary.

9.4.4. Complaints register

The Farm Manager shall maintain a current complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

- Record the name and contact details of the complainant.
- Record the time and date of the complaint.
- Contain a detailed description of the complaint.

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- Where relevant and appropriate, contain photographic evidence of the complaint or damage.
- Contain a copy of the Farm Manager's written response to each complaint received and keep a record of any further correspondence with the complainant. The Farm Manager's written response will include a description of any corrective action to be taken and must be signed by the Farm Manager and the affected party. Where a damage claim is issued by the complainant, the Farm Manager shall respond as described below.

The Farm Manager shall:

1. Ensure that all queries, complaints and claims are dealt with within an agreed timeframe.
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement is kept in the EMPr file.
3. Ensure that a complaints telephone number is made available to all landowners and affected parties.
4. Ensure that contact with affected parties is always courteous.

10. COMPLIANCE WITH ENVIRONMENTAL REQUIREMENTS

This EMPr is a legally binding document forming part of the conditions of the EA issued under NEMA. The Holder of the EA bears full responsibility for ensuring that the EMPr requirements are met at all times.

The Holder of the EA must notify DEA&DP within 24 hours of any significant non-compliance with the EA or EMPr.

10.1. Non-Compliance Procedure

Non-compliance on site is managed through the following steps:

- The Farm Manager identifies a non-compliance and records it in the incident register within 24 hours, with a description, photographs where relevant, and the corrective action taken or planned.
- The Farm Manager notifies the Holder of the EA without delay.
- Corrective action must be implemented as soon as practicable: within 24 hours for urgent matters (spills near watercourses; encroachment into no-go areas) and within 14 days for non-urgent matters.
- If the ECO identifies a non-compliance during an inspection, the ECO records it in the inspection report and notifies the Farm Manager and Holder of the EA in writing. The Holder of the EA must respond with a corrective action plan within 14 days.
- Persistent or serious non-compliance that has not been remedied must be reported by the Holder of the EA to DEA&DP within 24 hours of the failure to remedy.
- DEA&DP has authority under NEMA to conduct compliance inspections, issue compliance notices, and require remediation. The Holder of the EA must co-operate fully with any such process.

10.2. Priority non-compliances

The following are examples of priority non-compliances requiring immediate corrective action and same-day notification to the ECO:

- Unauthorised clearing, cultivation, or vehicle movement within a demarcated no-go area.
- Any direct disturbance to the Hex River channel, bank, or riparian vegetation within the 32m buffer.
- Spill or discharge of fuel, oil, or agricultural chemicals that may reach a watercourse or drainage line.
- Clearing or cultivation beyond the approved footprint.
- Discovery of archaeological material or unmarked graves without the required notification to Heritage Western Cape.

10.3. Consequences of non-compliance

Monetary penalties are not administered through this EMPr. This document is not a contract between parties, and the ECO has no authority to impose or collect financial penalties. The applicable consequences are as follows:

- The Holder of the EA bears the full cost of any environmental remediation required as a result of non-compliance, including rehabilitation of damaged no-go areas, clean-up of spills, and any specialist assessment required to determine the extent of damage.
- DEA&DP may issue a compliance notice under Section 31L of NEMA requiring specific corrective action within a defined timeframe.
- DEA&DP may institute enforcement proceedings under NEMA, which may include administrative penalties, criminal prosecution, or the suspension, amendment, or withdrawal of the EA.
- Failure to notify DEA&DP of a significant non-compliance is itself a contravention of the EA conditions and may attract enforcement action.

ANNEXURE 1: EAP CV

SUMMARISED CURRICULUM VITAE OF LINDSAY SPEIRS DU TOIT

ENVIRONMENTAL ASSESSMENT PRACTITIONER

Lindsay has worked extensively throughout the Western Cape as an Environmental Assessment Practitioner, for over 21 years, on a variety of projects. Lindsay's experience includes Basic Assessments and Scoping/EIAs, Section 24G applications, Applicability Checklists, Ad Hoc Setback Lines, Environmental Management Programmes, various Management Plans, Regulation 34 Audits, External Audits and ECO related work.

QUALIFICATIONS

INSTITUTION	QUALIFICATION	YEAR OBTAINED
Milnerton High School	Matric (with exemption)	1996
University of Stellenbosch	BA Majors: Archaeology; Psychology; Geography and Environmental Studies	1999
University of Stellenbosch	BA Honours Spatial Analysis and Decision Making in GIS and Environmental Management	2000
University of Stellenbosch	MA Environmental Geography <i>Thesis Title: Agritourism: Market Segmentation Profile of Potential and Practising Agritourists.</i>	2003

REGISTRATIONS AND MEMBERSHIPS:

Registered EAP with EAPASA – Registration No. 2019/1470
Member of IAIA

EMPLOYMENT HISTORY:

Period: July 2020 to Present
Company: Self employed (trading as **EarthGrace Environmental Consultancy**)
Position: Registered Environmental Assessment Practitioner (EAP)

Period: January 2004 to June 2020
Company: **Doug Jeffery Environmental Consultants (Pty) Ltd.**
Position: Senior Consultant/Environmental Assessment Practitioner

ANNEXURE 2: MAPS

PROPOSED CLEARING OF VEGETATION FOR CULTIVATION AND A DAM ON FARM 800, WORCESTER

Alternative Layout 1



Legend

-  Dam site 1
-  Dam Site 2
-  Proposed Cultivation Area
-  Hex River
-  Farm 800
-  Farm 31/319

Datum: WGS84
Projection: Geographic
Scale: 1:4 000 (on A3)

Date: August 2026

PROPOSED CLEARING OF VEGETATION FOR CULTIVATION AND A DAM ON FARM 800, WORCESTER

Alternative Layout 2
PREFERRED ALTERNATIVE SITE
PLAN



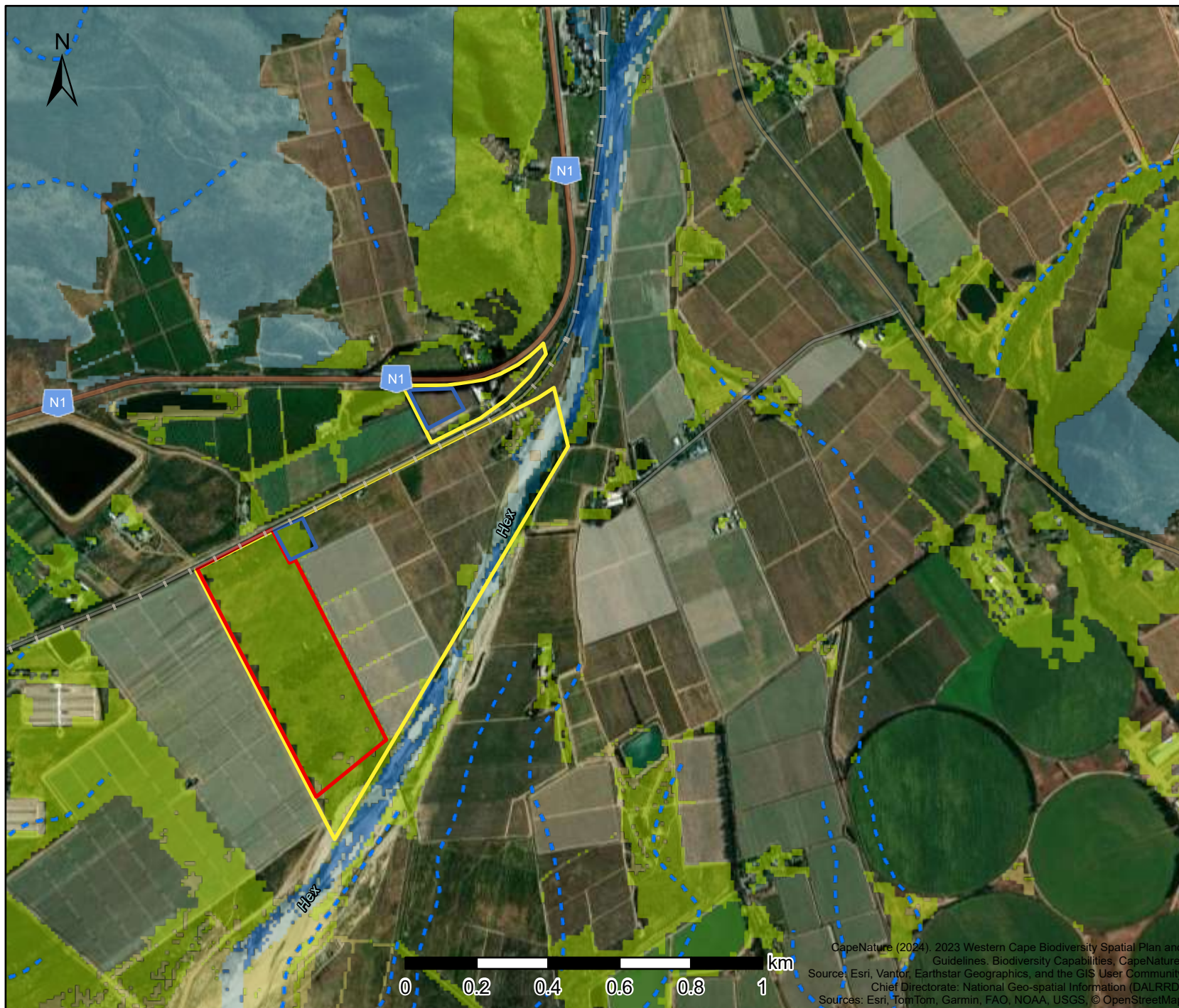
Legend

- Dam site 1
- Dam Site 2
- Proposed Cultivation Area
- Hex River
- Edge of river bank since floods
- 32m Setback Line
- Farm 800
- Farm 31/319

Datum: WGS84
Projection: Geographic
Scale: 1:4 000 (on A3)

Date: August 2026

Biodiversity Map



Legend

Rivers

— Non-Perennial

■ Protected Areas

Ecological Support Areas (Restore)

■ ESA 2: Restore from other land use

Ecological Support Areas

■ ESA 1: Aquatic

Critical Biodiversity Areas (Degraded)

■ CBA2: Aquatic

■ CBA2: Terrestrial

Critical Biodiversity Areas

■ CBA: River

■ CBA: Terrestrial

■ CBA: Wetland

■ Cultivation Area

■ Dam Sites

■ Properties

Map Center: Lon: 19°30'38.2"E
Lat: 33°37'8"S

Scale: 1:18,056

Date created: 2026/17/08



**Western Cape
Government**
FOR YOU

CapeNature (2024). 2023 Western Cape Biodiversity Spatial Plan and Guidelines. Biodiversity Capabilities. CapeNature.
Source: Esri, Vantor, Earthstar Geographics, and the GIS User Community
Chief Directorate: National Geo-spatial Information (DALRRD)
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap

PROPOSED CLEARING OF VEGETATION FOR CULTIVATION AND A DAM ON FARM 800, WORCESTER

SITE PLAN WITH CONSTRAINTS
AND ALTERNATIVE DAM SITES



Legend

- Dam Site 1
- Dam Site 2
- Proposed Cultivation Area
- HEXRIVIER
- Approximate riverbank edge (post floods)
- 32m Setback Line
- Farm 800
- Farm 31/319

Datum: WGS84
Projection: Geographic
Scale: 1:4 000 (on A3)

Date: August 2026

ANNEXURE 3: ENVIRONMENTAL SITE CHECKLISTS

HOW TO USE THESE CHECKLISTS

The Farm Manager must complete the relevant checklist BEFORE commencing each activity listed below. Completed checklists must be retained in the farm environmental file and made available to the ECO during compliance inspections.

If any item cannot be ticked, STOP work and resolve the issue before proceeding. Note actions taken in the Notes column. Contact the ECO if you are unsure.

A new checklist must be completed for each separate occasion on which the relevant activity is undertaken.

CHECKLIST SUMMARY

1	Work Within or Near Drainage Lines / Watercourse Buffers	<i>Before any activity within 32m of the Hex River or any drainage line</i>
2	Soil Disturbance and Earthworks	<i>Before deep ripping, land preparation, or any major soil disturbance</i>
3	Temporary Fuel and Chemical Storage	<i>Before establishing any temporary fuel or chemical storage area on site</i>
4	Topsoil Stockpiling	<i>Before stripping and stockpiling topsoil</i>
5	New Farm Access Tracks	<i>Before constructing or significantly altering any farm road or track</i>
6	Rehabilitation	<i>Before rehabilitation of disturbed areas</i>
7	Emergency Response	<i>To be read by all farm workers before clearing commences; revisited after any incident</i>

CHECKLIST 1 | Work Within or Near Drainage Lines / Watercourse Buffers

Date:	Location / Activity:	Completed by:	Verified by:

✓	Requirement	Notes / Action
☐	Confirm that the planned activity falls entirely outside the 32m Hex River buffer (measured from the top of the bank or the outer edge of the riparian zone, whichever is furthest). If the activity falls inside this buffer, STOP and notify the ECO before proceeding.	
☐	Confirm that no-go markers are in place and clearly visible along the full length of the buffer edge in the activity area.	
☐	Confirm that no earthmoving machinery, vehicles, or equipment will enter the buffer zone.	
☐	Confirm that no fuels, agricultural chemicals, or wash water will be mixed, stored, or discharged within 32m of Hex River or any drainage line.	
☐	Erosion controls (berms, silt fences, or rock check dams) are in place on all slopes draining toward the watercourse before work starts.	
☐	Confirm no vegetation debris or soil will be pushed, dumped, or stockpiled within the riparian buffer.	
☐	Following any significant rainfall event, inspect the buffer edge adjacent to the activity for signs of erosion or sediment movement; rectify any issues within 30 days and record the inspection in the environmental file.	

Signature: _____	Date: _____	Retained in: Environmental File
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CHECKLIST 2 | Soil Disturbance and Earthworks (Deep Ripping, Land Preparation)

Date:	Location / Activity:	Completed by:	Verified by:

✓	Requirement	Notes / Action
☐	Confirm that all planned earthworks fall within the approved clearing footprint as per the Environmental Authorisation.	
☐	Topsoil has been stripped and separately stockpiled before subsoil disturbance commences (see Checklist 4).	
☐	No earthworks are scheduled during forecast rain events; if rain is imminent, suspend and stabilise exposed areas.	
☐	Erosion controls (rock check dams, silt fences, or berms) are installed at the downslope edge of disturbed areas before work starts.	
☐	Exposed soil will be stabilised within 48 hours of disturbance where possible (cover crop, mulch, rock packing, or brush packing).	
☐	No soil, rubble, or vegetation debris will be pushed into drainage lines or the Hex River riparian zone.	
☐	All ripping and earthwork operations will follow the contour where topographically possible to minimise the risk of erosion.	

Signature: _____	Date: _____	<i>Retained in: Environmental File</i>
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CHECKLIST 3 | Temporary Fuel and Chemical Storage

Date:	Location / Activity:	Completed by:	Verified by:

✓	Requirement	Notes / Action
☐	Fuel and agricultural chemicals are stored in a bunded area with an impermeable base, located at least 32m from the Hex River and any drainage line, and outside all demarcated no-go areas.	
☐	The storage area is clearly labelled and fitted with a drip tray or bund capable of containing at least 110% of the volume of the largest single container.	
☐	A suitable spill kit (sand/absorbent material, shovel, bags) is available within 10 m of the storage area.	
☐	Material Safety Data Sheets (MSDS) for all stored chemicals are available on site.	
☐	Empty chemical containers are stored separately, sealed, and disposed of at an approved facility. No burning, burial, or informal dumping of containers on site.	
☐	Fuelling of machinery occurs on hardstanding or over a drip tray, at least 50 m from any watercourse.	
☐	Any spill, however small, is reported in the incident register and the ECO is notified within 24 hours if the spill reaches or threatens a drainage line or the Hex River buffer.	

Signature: _____	Date: _____	Retained in: Environmental File
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CHECKLIST 4 | Topsoil Stockpiling

Date:	Location / Activity:	Completed by:	Verified by:

✓	Requirement	Notes / Action
☐	Stockpile location confirmed to be outside all demarcated no-go zones, drainage lines, and the Hex River 32m buffer.	
☐	Topsoil is stockpiled separately from subsoil, rubble, or vegetation debris.	
☐	Stockpile height does not exceed 2 m to minimise the risk of compaction and erosion.	
☐	Stockpile edges are protected with silt fencing, earth berms, or sandbags to prevent wash-off during rain events.	
☐	If the stockpile will not be used within 30 days, the surface is seeded with a cover crop or covered with shade cloth.	
☐	The stockpile location is marked on a simple site sketch retained in the environmental file.	
☐	Stockpile is inspected after significant rainfall; any erosion or material displacement is rectified immediately.	

Signature: _____	Date: _____	<i>Retained in: Environmental File</i>
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CHECKLIST 5 | New Farm Access Tracks

Date:	Location / Activity:	Completed by:	Verified by:

✓	Requirement	Notes / Action
☐	New track route confirmed to avoid all demarcated no-go zones and the Hex River 32m buffer.	
☐	Track alignment follows the contour where possible. Water bars or cross-drains are planned at intervals on slopes steeper than 5%.	
☐	No track drainage outlets are directed toward the Hex River or its riparian zone.	
☐	Vegetation clearing for the track is confined to the minimum required width (generally not more than 5 m).	
☐	The track surface is stabilised after construction (with gravel, rock, or a compacted surface) to prevent erosion.	
☐	Any culverts or drainage crossings are sized to pass the expected runoff without backing up or concentrating flow.	
☐	Track margins and disturbed edges are rehabilitated with indigenous species within one growing season of construction.	

Signature: _____	Date: _____	Retained in: <i>Environmental File</i>
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CHECKLIST 6 | Rehabilitation

Date:	Location / Activity:	Completed by:	Verified by:

✓	Requirement	Notes / Action
☐	Areas requiring rehabilitation have been identified on a simple site sketch retained in the environmental file (including inadvertently disturbed vehicle tracks, cleared field margins, and areas outside the approved footprint).	
☐	Only locally occurring indigenous plant species appropriate to area are to be used for re-vegetation. No alien, exotic, or horticultural species is to be planted.	
☐	Rehabilitation is timed to coincide with the onset of the winter rainfall season (April to June) to maximise plant establishment success.	
☐	Rehabilitated areas are fenced off from vehicle and machinery access for at least one growing season.	
☐	Bare or compacted soil along field edges adjacent to the Hex River buffer is stabilised using cover crops, rock packing, or brush packing before the first rain event after clearing.	
☐	Follow-up inspection of rehabilitated areas will be conducted after the first growing season; gaps will be re-seeded or re-planted as required.	

Signature: _____	Date: _____	Retained in: Environmental File
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CHECKLIST 7 | Emergency Response

Date:	Location / Activity:	Completed by:	Verified by:

This checklist must be read by the Farm Manager and all workers before clearing commences. Post a copy on the notice board at the farm office and in the tractor cab. Revisit and update contact numbers annually and after any incident.

EMERGENCY CONTACT NUMBERS — complete and post prominently

Contact	Name / Organisation	Number
Emergency (all)	112 / 10111	
Local fire station		
Nearest hospital/clinic		
Ambulance	Western Cape EMS: 021 937 0300	
ECO		
DEA&DP Duty Line	0800 205 005	
Holder of EA (Viljoen Boerdery)		

EMERGENCY RESPONSE PROCEDURES

✓	Requirement	Notes / Action
☐	CHEMICAL OR FUEL SPILL: Stop the source immediately. Contain the spill with dry sand, soil, or absorbent pads. Prevent run-off from reaching any drainage line or the Hex River buffer. Do not wash the spill into any watercourse. Notify the ECO within 24 hours. Record the incident (date, time, substance, quantity, actions taken) in the environmental file.	
☐	FIRE: Call 112 and the local fire station immediately. Attempt to control only if it is safe to do so using available fire-fighting equipment. Evacuate all workers from the area. Do not re-enter until declared safe. Notify the ECO and Holder of the EA on the same day. Record the incident.	
☐	WORKER INJURY: Call 112 or transport the worker to the nearest emergency facility without delay. Notify the Holder of the EA immediately. Complete an incident report in the environmental file within 24 hours.	
☐	ENCROACHMENT INTO NO-GO AREA: Stop all work in the affected area immediately. Mark the disturbed extent with tape or stakes. Notify the ECO by telephone within 24 hours and by written record within 48 hours. Do not attempt any remediation without ECO guidance.	
☐	CHANCE FIND (archaeological material, graves, artefacts): Stop work in the affected area immediately. Mark the area and do not disturb further. Notify Heritage Western Cape and the ECO. Do not resume work in that area without written authorisation from Heritage Western Cape.	
☐	ALL INCIDENTS: Record in the farm incident register within 48 hours: date, time, nature of incident, persons involved, actions taken, and photographs where possible.	

Signature: _____	Date: _____	<i>Retained in: Environmental File</i>
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ANNEXURE 4: PLANT SPECIES AND TERRESTRIAL BIODIVERSITY REPORT

**TERRESTRIAL BIODIVERSITY AND PLANT SPECIES ASSESSMENT
FOR THE DEVELOPMENT OF A DAM AND NEW CULTIVATION
AREAS ON VREDELUST, FARM 800 & 31/319, WORCESTER.**

**Compiled by: Johlene Krige
B.Sc. Biodiversity & Ecology, M.Sc. Botany
Pr. Sci. Nat**

**Applicant: Mr. Nico van Schalkwyk
EAP: Earth Grace Environmental Consultancy**

Date: 19 February 2026

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APPENDIX A – LOCATION OF CONTENT PRESCRIBED BY NEMA FOR SPECIALISTS REPORTS: PROCEDURES FOR ASSESSMENT AND MINIMUM CRITERIA FOR REPORTING, GN 320 DATED 20 MARCH 2020.

SPECIALIST DETAILS, EXPERTISE AND DECLARATION

In terms of Chapter 5 of the National Environmental Management Act of 1998, specialists involved in Impact Assessment processes must declare their independence.

I, J. Krige, do hereby declare that I am financially and otherwise independent of the client and their consultants. All opinions expressed in this document are substantially my own.



J. Krige

Intellectual property: This report remains the intellectual property of the author and may not be summarised without the written permission of the author. Any quotations from this report should be in full, rather than summations derived from any alleged meaning of the report.

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Since 2010 I have been working as an Environmental Assessment Practitioner and Botanical & Ecological Specialist at Boland Environmental Consultants in Worcester. I have been involved in various EIA Projects and Environmental Management Programs. In additions I have conducted numerous Botanical & Ecological Impact Assessments in the local area (Breede River Valley). Since 2013 I have been based in Robertson and working at a free-lance basis, trading under my own name, focussing on Specialised Botanical & Ecological Surveys, predominantly within the Breede River Valley. Most of my work relates to new farming development (cultivation areas, construction of dams and agri related infrastructure) or small-scale mining applications in the area. I am currently (since 2017) based in Ceres continuing with Botanical Impact Assessment throughout the Western Cape.

1. INTRODUCTION

This terrestrial biodiversity assessment is for the development of a dam and new cultivation areas on Vredelust Farm 800 & 31/319, Worcester. The property is located approximately 3 km NE of Worcester, in the Breede Valley Municipal Area (Figure 1).

Two alternative sites have been identified for the development of a dam. The total footprint and storage capacity are not yet established but two sites are broadly defined, approximately 1.4 ha each (Figure 2).

- Site 1 is located within the north-western portion of Farm 800.
- Site 2 is located on Farm 31/319 and comprises a current cultivated site.

In addition to the new dam, an area of approximately 17 ha on Farm 800 is targeted for cultivation. The entire site was cultivated in the past but it was more than 10 years ago. This cultivation area will include dam site 1 if the dam is to be developed at site 2 (Figure 2).

A detailed Botanical Assessment was conducted during 2019 but the project has lapsed and only commenced again during 2026. The 2019 botanical report was revised to consider the latest available biodiversity information, tools and maps and to incorporate the NEMA protocol for biodiversity specialist assessments.

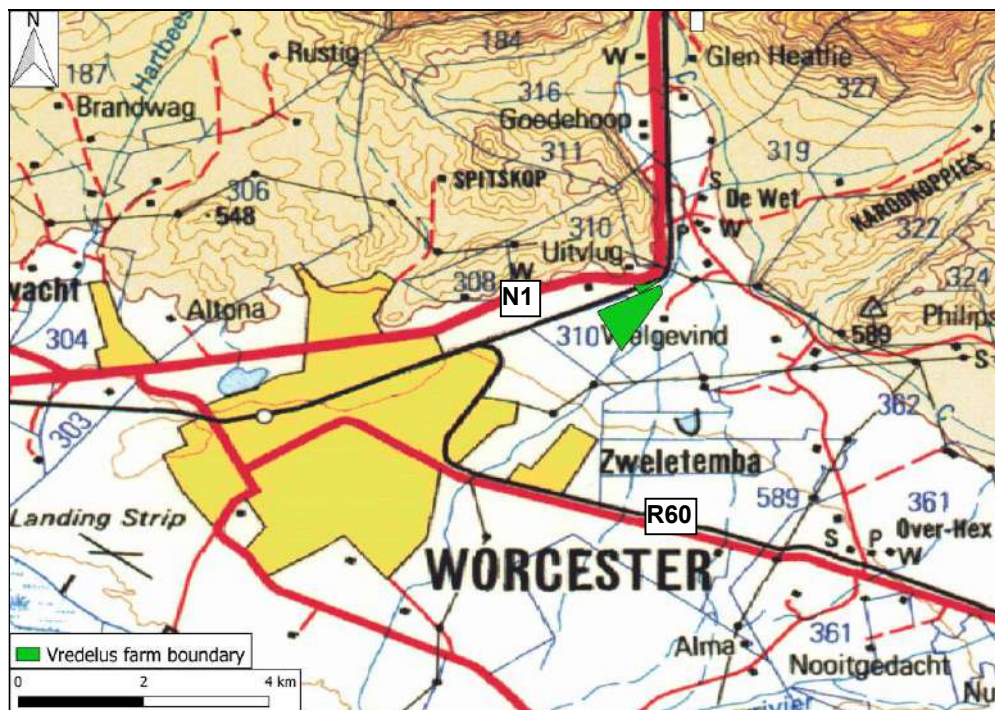


Figure 1. Location of Vredelust Farm (green polygon) north-east of Worcester.



Figure 2. Alternative dam sites (blue) and the proposed cultivation area (red) on Vredelust Farm Portions 31/319 and 800.

4. METHODOLOGY

An overview of the existing land use, vegetation, ecosystem status and occurrence of sensitive areas on the identified land were obtained through SANBI GIS, The National Vegetation Map (2024 beta update), NEMBA Revised List of Threatened Ecosystems (2022), The 2023 WC Biodiversity Spatial Plan (Cape Nature 2024), National Web Based Environmental Screening Tool, Google Earth Imagery and Cape Farm Mapper. Maps used in this report were configured in Cape Farm Mapper, Google Earth and Quantum GIS.

A field survey was conducted to confirm the vegetation type and to assess the habitat quality and the presence of rare species, whilst recording all evident plant species. The site was walked and various reference points marked using a handheld GPS while aspects such as the condition of the vegetation and levels of disturbance were noted and photographed. The target development area was visited on the 19th of November 2013, the 3rd of September 2019 and the 3rd of February 2026.

5. LIMITATIONS AND ASSUMPTIONS

The latest field work was conducted during summer (February 2026). There were thus seasonal constraints to spring flowering plants and geophytes. The site was, however, surveyed in detail during spring as part of the previous 2019 assessment. The specialist is confident that the 2019 species list will be sufficient in the prediction of the plant species that are likely to be found on site during spring 2026.

Rationale: The site was cultivated in the past (>10 years ago) and some natural plant species established on site as confirmed in the 2019 assessment. It is very unlikely that additional geophyte plants would have established on site since the 2019 assessment, primarily based on the overall lack of improvement over the past few years. This is most likely the result of a deficient seed bank and the lack of nearby source populations. The site is completely bounded by cultivation areas of which most areas are covered by netting.

6. MAIN FINDINGS

6.1 CBAS, ESAS & PROTECTED AREAS

Figure 4 represents Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) identified through the systematic biodiversity planning assessment conducted by the Western Cape Biodiversity Spatial Plan (WC BSP 2023). These areas require safeguarding to ensure the continued existence and functioning of species, ecosystems and ecological processes, including the delivery of ecosystem services, across terrestrial and freshwater realms (CapeNature 2024).

- CBAs are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
- ESAs play an important role in supporting the functioning of Protected Areas or CBAs, and are often vital for delivering ecosystem services.

6.1.1 CBAs/ESAs on site

- Dam site 1 is recognised as a terrestrial CBA. The site partly overlaps with an existing cultivation area, currently not recognised as any CBA or ESA.
- Dam Site 2 is an existing cultivation area and is also not recognised as any CBA or ESAs.
- The entire area targeted for cultivation is recognised as a terrestrial CBA (Figure 4).
- The target cultivation area borders the Hex River towards the south. The Hex River is recognised as an aquatic CBA, with degraded areas regarded CBA2.

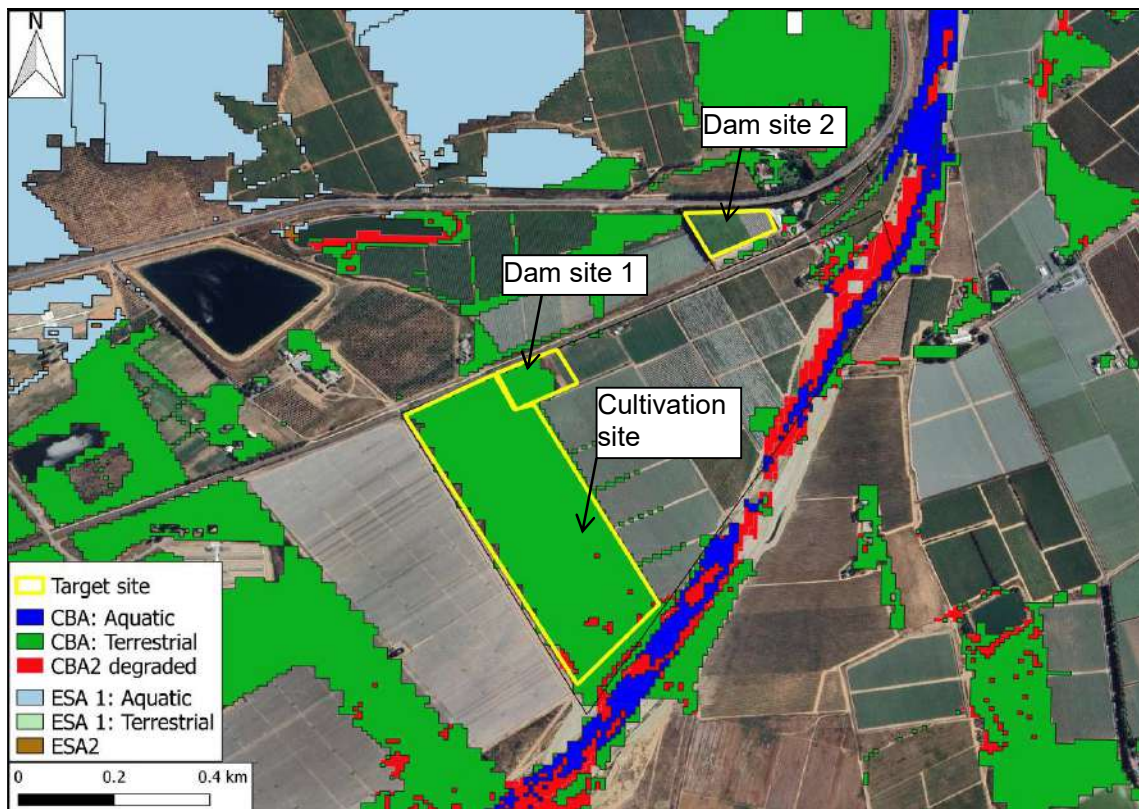


Figure 4. Extract from the WC Biodiversity Spatial Plan (2023) Map showing the extent of CBAs and ESAs in the area.

6.1.2 Protected Areas

The proposed development will not impact on any Protected Areas or on any National Protected Areas Expansion Strategy (NPAES) Focus Areas (Figure 5).

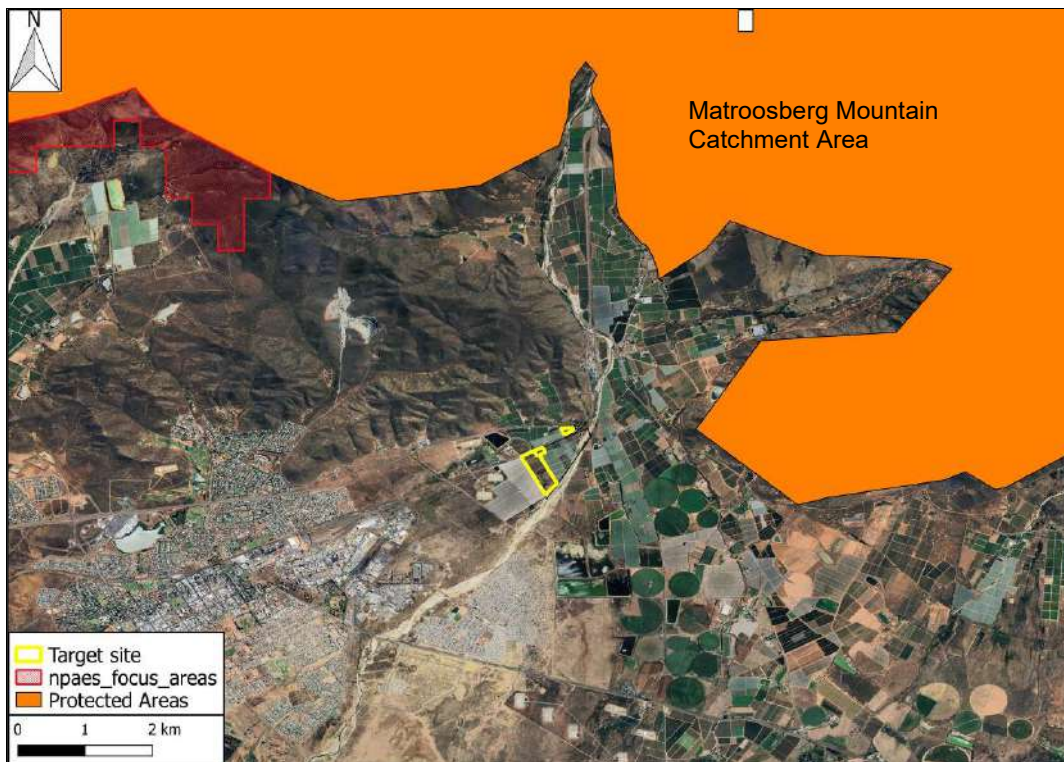


Figure 5. Map showing Protected Areas and NPAES Focus Areas in the broader area.

6.2 CONNECTIVITY AND CORRIDORS

Corridors are important to ensure habitat connectivity for plant and animal migrations and interactions between Protected Areas, CBAs and other landscape features (rivers, mountains etc).

- The target site does not form part of a biodiversity corridor and the development will not impact on local connectivity.
- The site is bounded by cultivation directly towards the north, east and west, of which most areas are covered by netting, with the Hex River towards the south and cultivation further south (Figure 2).

6.3 WETLANDS / AQUATIC FEATURES

There are no NFEPA's, watercourses or wetlands identified within the target cultivation areas or any of the dam sites. The cultivation area is bounded by the Hex River towards the south. The

neighbouring Hex River (excluded from the target site) is recognised as a perennial river and an important NFEPA flat wetland area and river corridor (Figure 6).

Recommendation:

A minimum buffer of 32m should be maintained between cultivation areas and the Hex River floodplain. There is a clear terrace between terrestrial areas on site and the lower lying river floodplain area.

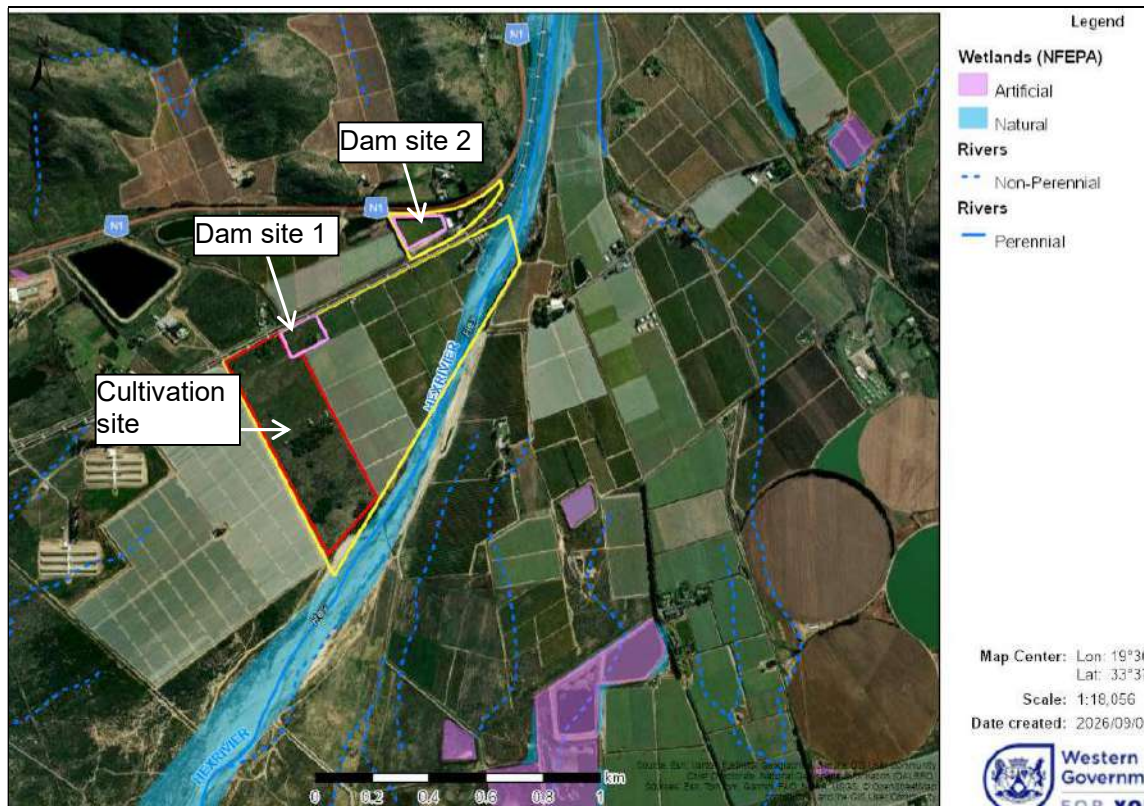


Figure 6. Extract from the Cape Farm Mapper NGI Rivers and NFEPA wetlands layers showing mapped watercourses and wetlands in the area.

6.4 MAPPED VEGETATION TYPES AND ECOSYSTEM THREAT STATUS

According to the SA Vegetation Map (Mucina and Rutherford 2006 & 2024 update) the entire site (cultivation area and both dam sites) comprised Breede Alluvium Renosterveld prior to any disturbances (Figure 7).

- Dam site 2 is however currently cultivated and Dam site 1 and the target cultivation area was cultivated in the past.
- Breede Alluvium Renosterveld is listed as an Endangered ecosystem (DFFE 2022).

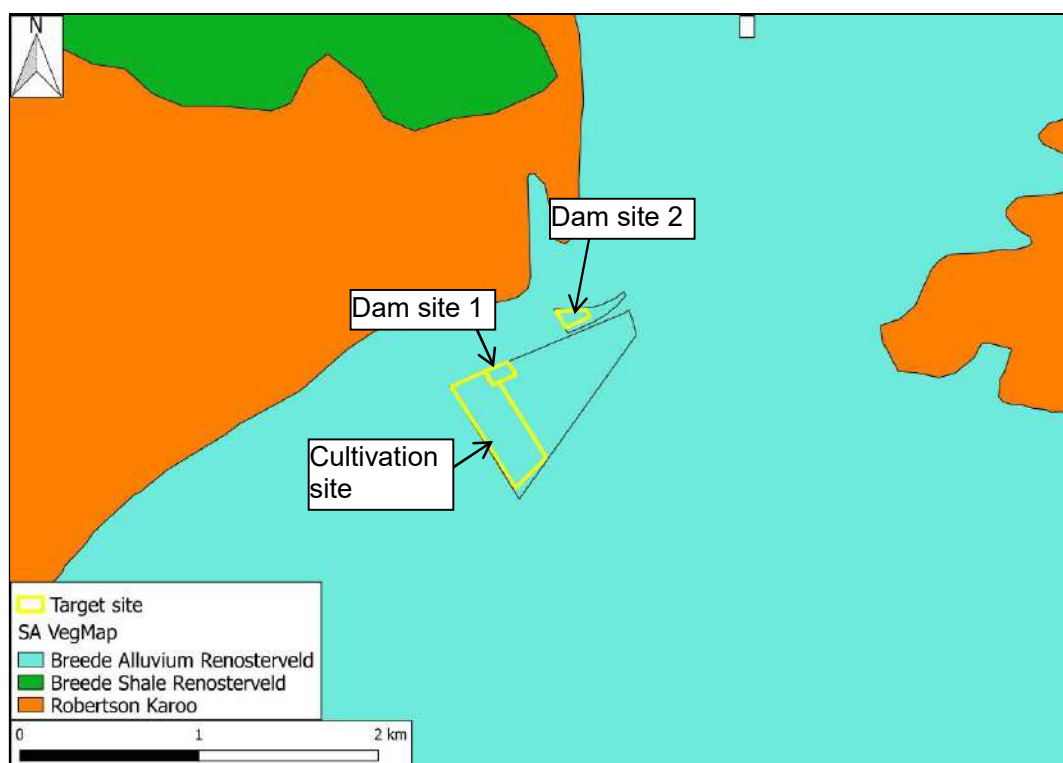


Figure 7. Extract from the National Vegetation Map (2024 update) showing the relevant ecosystems.

Breede Alluvium Renosterveld occurs on flat alluvial fans and valley bottoms supporting short grassy cupressoid-leaved shrubland, usually dominated by renosterbos. The substrate is a mix of sands and clays, with extensive cobbles and pebbles, typical of alluvial fans and river terraces. Often seasonally wet, with a high diversity of bulbs, some of which are threatened. **Important Taxa:** Tall Shrubs: *Montinia caryophyllacea*, *Rhus lucida*. Low Shrubs: *Amphithalea spinosa*, *Aspalathus candicans*, *A. spinosa* subsp. *spinosa*, *Athanasia trifurcata*, *Cliffortia ruscifolia*, *Elytropappus rhinocerotis*, *Diosma passerinoides*, *Helichrysum incarnatum*, *Oedera imbricata*, *O. squarrosa*, *Pentzia incana*. Succulent Shrub: *Ruschia caroli* (d). Herbs: *Corymbium glabrum*, *Senecio erysimoides*. Geophytic Herbs: *Gladiolus permeabilis* subsp. *permeabilis*, *Moraea gawleri*. Succulent Herb: *Crassula expansa* subsp. *expansa*. Graminoids: *Willdenowia incurvata* (d), *Cynodon dactylon*, *Ehrharta longiflora*, *E. villosa* var. *villosa*, *Eragrostis curvula*, *Themeda triandra* (Rebelo et al 2006).

The vegetation within the target cultivation site was classified at a finer scale as Hex River Arid Alluvium Fynbos by the CAPE Fine Scale Mapping Project (Helme, N. A. and Freshwater consulting Group, 2007). The northernmost section, including dam site 1, is classified as Worcester Renosterveld Karoo (previously known as Robertson Karoo which is Least Threatened) (Figure 8).

Hex River Arid Alluvium Fynbos is regarded as Endangered due to cultivation of vines (Helme 2007). This vegetation unit is restricted to the Hex River (De Doorns) valley as far south as Worcester. The habitat is distinguished from Alluvium Renosterveld by the soils, which are sands rather than clays or silts. Sandstone cobbles are frequently common. Typical plant species within the riverine portions include: *Metrosideros angustifolia*, *Rhus angustifolia*, *Calopsis paniculata*, *Diospyros glabra* and *Freylinia lanceolata*, whilst areas away from the rivers support *Anthospermum spathulatum*, *Rhus dissecta*, *Stoebe* sp., *Struthiola ciliata*, *Passerina* sp., *Nylandtia spinosa*, *Willdenowia incurvata*, *Helichrysum moeserianum*, *Montinia caryophyllacea*, *Protea laurifolia*, *Aspalathus rugosa*, *A. acuminata*, *A. biflora*, *Leucadendron barkerae*, *Cliffortia crenata*, *C. ruscifolia*, *Ischyrolepis capensis*, *Euryops tenuissimus*, *Cephalophyllum* sp. and *Antimima* sp. Specials are unknown (Helme 2007).

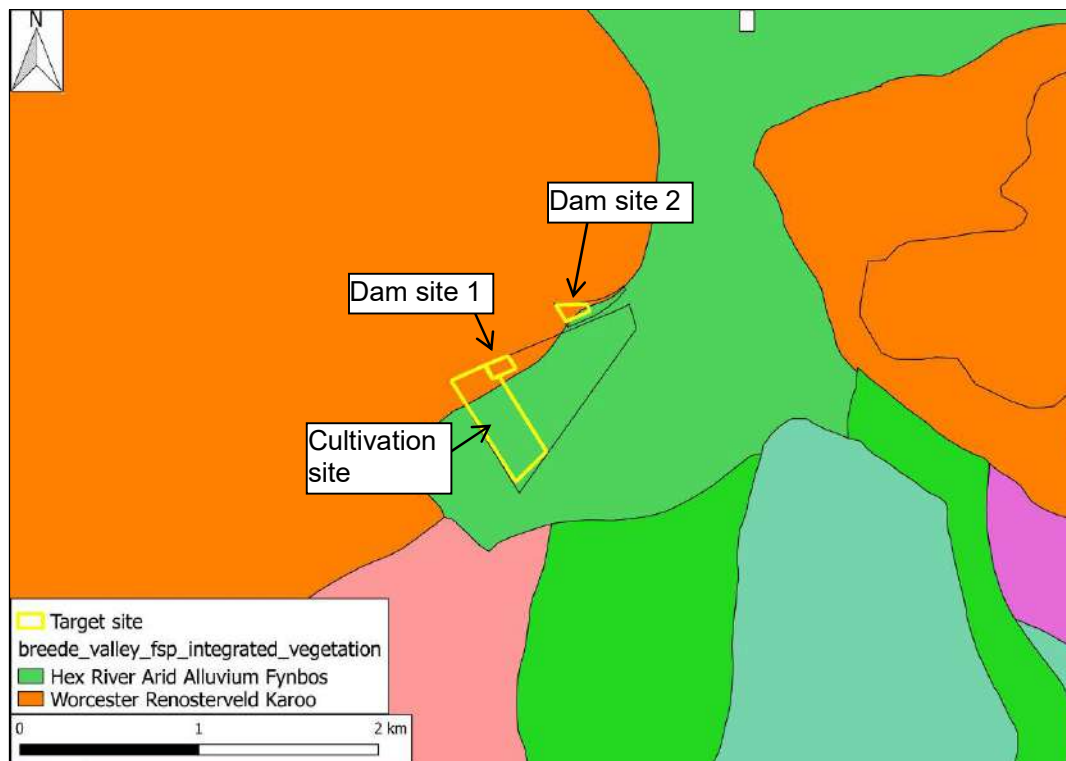


Figure 8. Extract from the CAPE Fine Scale Project: Vegetation Map showing the fine scale plan vegetation units in the area.

6.5 HABITAT CONDITION AND VEGETATION ON SITE

Dam site 1:

The area targeted for dam site 1 is highly degraded with no significant natural vegetation. The site is dominated by *Cynodon dactylon* (kweek), *Carpobrostus edulis* (suurvy) and *Acacia saligna* (port jackson), with scattered individuals of *Athanasia trifurcata* (kouterbos) and the weedy *Senecio burchellii* (geelgifbossie). There is an existing small dam / water abstraction pond which is

completely overgrown by port jackson. There is currently no representation of the original ecosystem, Breede Alluvium Renosterveld, on site.

Dam site 2:

Dam site 2 has no remaining natural vegetation. The site is currently used for cultivation.



Plate 1. Looking north-east towards the proposed dam site 1.



Plate 2. Looking east towards dam site 1 showing a dominant kweek grass cover (*Cynodon dactylon*) with suurvy and scattered kouterbos and dense port jackson at the existing abstraction pond.

Proposed cultivation area:

The entire area targeted for cultivation comprises old fields (previous cultivation areas). Remnants of old vineyard and tilling furrows are still evident on site. Subsequent to cultivation the site has been utilised for grazing for many years and the site is currently still utilised for grazing. Previous cultivation occurred more than 10 years ago and some natural vegetation re-established on site.

The site has a history of alien *Acacia saligna* (port jackson) infestation with various attempts to eradicate alien vegetation over the years, followed by recurring port jackson infestations (Refer to Figure 10-12 for earlier satellite imagery).

Currently the vegetation on site is highly degraded and natural plant diversity is very low, making it very difficult to distinguish the relevant ecosystem present on site. Considering the substrate, which is loamy sand and cobble, it is assumed that site would have supported Breede Alluvium Renosterveld as depicted in the SA vegetation map. There is no reference vegetation remaining within the immediate vicinity of the site as it is bounded by cultivation.

The target site is not recognised as a natural remnant of Breede Alluvium Renosterveld in the SANBI Red List of Ecosystems: Remnants layer of June 2021 (Figure 9).



Figure 9. SANBI Red List of Ecosystems: Remnants (June 2021).

The southernmost portion, next to the Hex River is open with sparse cover. The most dominant plant species include *Galenea africana* (kraalbos), *Oncosiphon piluliferum* (stinkkruid) and *Cynodon dactylon* (kweek grass) with isolated individuals of *Aspalatus spinosa*, *Psilocaulon junceum* (loogbossie) and *Tetragonia fruticosa* (kinkelbossie). A dense patch of port jackson is evident along the Hex River with another large, dense patch in the south-western portion of the site.

The central portion of the site is characterised by one patch of natural shrubs dominated by *Metasia densa* (blombos) and *Elytropappus rhinocerotis* (renosterbos) located between 2 large impenetrable stands of port jackson and some open areas. Open areas are dominated by *Cynodon dactylon* (kweek grass), *Eragrostis curvula* (oulandsgras) and *Carpobrotus edulis* (suurvy) with isolated *Galenea africana* (kraalbos), blombos, renosterbos, *Arctotis revoluta* (botterblom) and other species that typically establish within disturbed sites including *Leysera gnaphaloides* (teringteebos), *Oncosiphon piluliferum* (stinkkruid), *Ruschia multiflora* (kraalvygie) and *Senecio burchellii* (geelgifbossie). There is also some remnant vineyard plants and a number of weeds including include *Amaranthus sp.* (misbredie), *Atriplex sp.* (soutbos), *Atriplex semibaccata* (kruipsoutbos), *Chenopodium album* (withondebossie), *Emex australis* (dubbeltjie), *Maireana brevifolia* (kleinblaar bloubos), *Rapistrum rugosum* (wildemosterd) and *Salsola kali* (tolbos) amongst others.

The northern half of the site is fairly open and grassy as this area was used as a grazing paddock for many years. This area is dominated by *Cynodon dactylon* (kweek), *Carpobrotus edulis* (suurvy), *Oncosiphon piluliferum* (stinkkruid) and *Galenea africana* (kraalbos) with isolated individuals of *Athanasia trifurcata* (kouterbos) and *Elytropappus rhinocerotis* (renosterbos). High density port jackson is evident along the northern boundary of the site.



Plate 3. Looking south showing open areas with scattered kraalbos within the southern portion of the site and dense port jackson along the Hex River.



Plate 4. Looking east along the southern portion of the site with dense port jackson along the Hex.



Plate 5. Looking north-west from the southern portion of the site showing a dense stand of port jackson in the south-western portion.

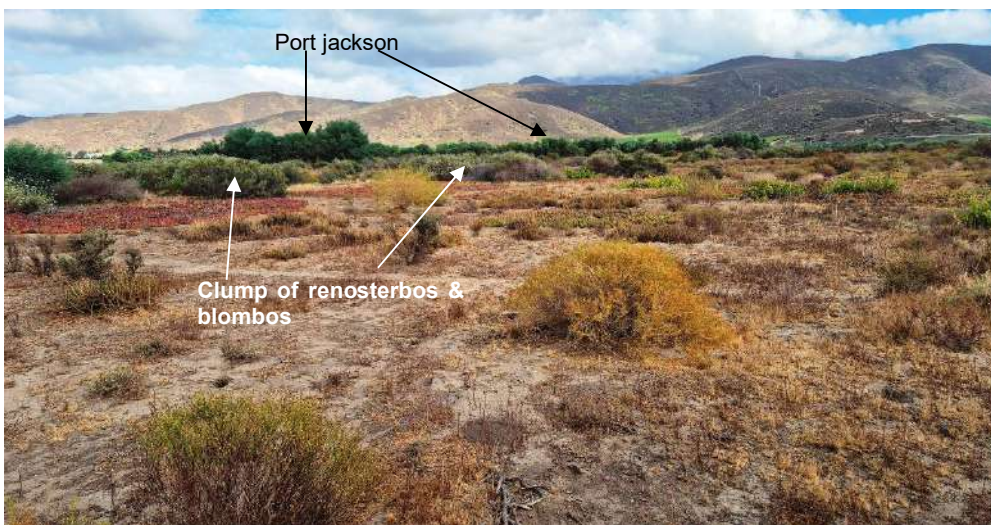


Plate 6. Looking north across the central portion of the site showing open areas with a clump on natural shrubs in the back and dens port jackson further back.



Plate 7. Clump of natural shrubs in the central portion of the site with dominant renosterbos and blombos and dense port jackson in the back.



Plate 8. Looking north-east across open areas within the northern portion of the site showing suurv and kraalbos.



Plate 9. Looking south along the north-western portion of the site showing open, degraded areas.

Previous field surveys:

A botanical survey of the site was conducted during November 2013 to explore the potential for the mining of stone and cobble from the site but this project did not go any further. A detailed survey was conducted a few years later during September 2019 for the potential development of a dam and cultivation areas but the project lapsed and only commenced now during 2016.

- Both these surveys provided a baseline to assess the development of natural habitat over the years on this previously cultivated site.
- Considering both the previous surveys it is confirmed that the habitat on site remained in a poor condition with low natural plant diversity. Refer to Figs. 10-12 for earlier satellite imagery.

During 2013 the site comprised weedy herbaceous plants with a few natural elements that typically establish within disturbed areas, such as old fields. The most prominent indigenous plant species recorded throughout the site included: *Elytropappus rhinocerotis* (renosterbos), *Galenea africana* (kraalbos), *Athanasia trifurcata* (klaaslouwbos), *Metalsia* sp., *Ruschia multiflora* (wit vygie), *Drosanthemum* sp., *Carpobrotus edulis* (suurvry), *Oncosiphon* sp. (stinkkruid), *Tetragonia* sp., *Eragrostis curvula* (oulandsgras) and *Ehrharta calycina* (rooisaadgras). No rare or endangered plant species were recorded on site. Alien plant species were a significant problem throughout the site. Large patches of port jackson was evident within the target site and the river section was severely infested with alien acacia species. The site did not resemble the original ecosystem on site.

Apart from significant alien clearing, the site have not improved much in terms of habitat condition and species diversity from the 2013 to the 2019 survey, most likely as the site is continuously being utilised for grazing and the lack of source populations. During the 2019 survey the site was still dominated by weeds and grasses with a few natural elements that typically establish within disturbed areas, such as old fields. The same natural elements recorded during 2019 were recorded during the 2026 survey, except there was an absence of annuals and geophytes, as the 2026 survey was conducted during summer. The site remained open and degraded but the dominant shrubs (kraalbos, renosterbos and blombos) have now grown taller and significant alien vegetation re-established on site.

- Only 2 geophytes were recorded during September 2019 both typically occurring within disturbed sites namely *Albuca canadensis* (slymstok) and *Oxalis pes-caprae* (geelsuring).
- Annuals included *Dimorphotheca sinuata* (namakwadaisy) and *Osteospermum clandestinum* (trekkertjie).
- Based on the overall lack of improvement in the site, it is highly unlikely that additional annuals and geophytes would currently be present on site, should the area be surveyed during spring.

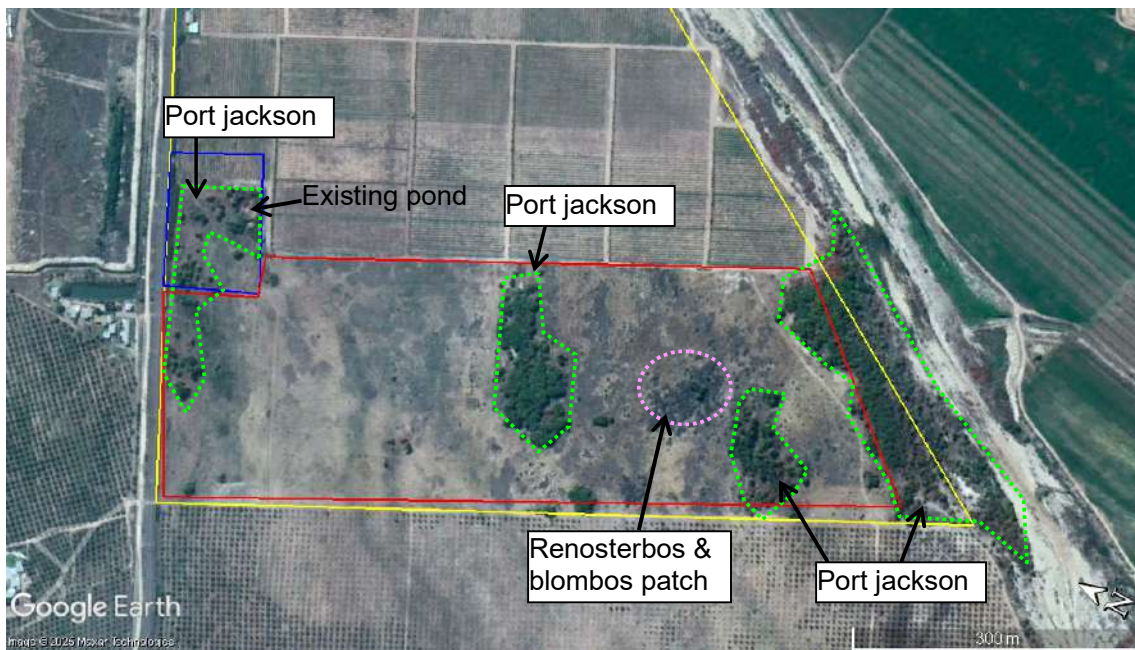


Figure 10. Earlier Google Earth image of September **2017** showing the habitat condition on site.

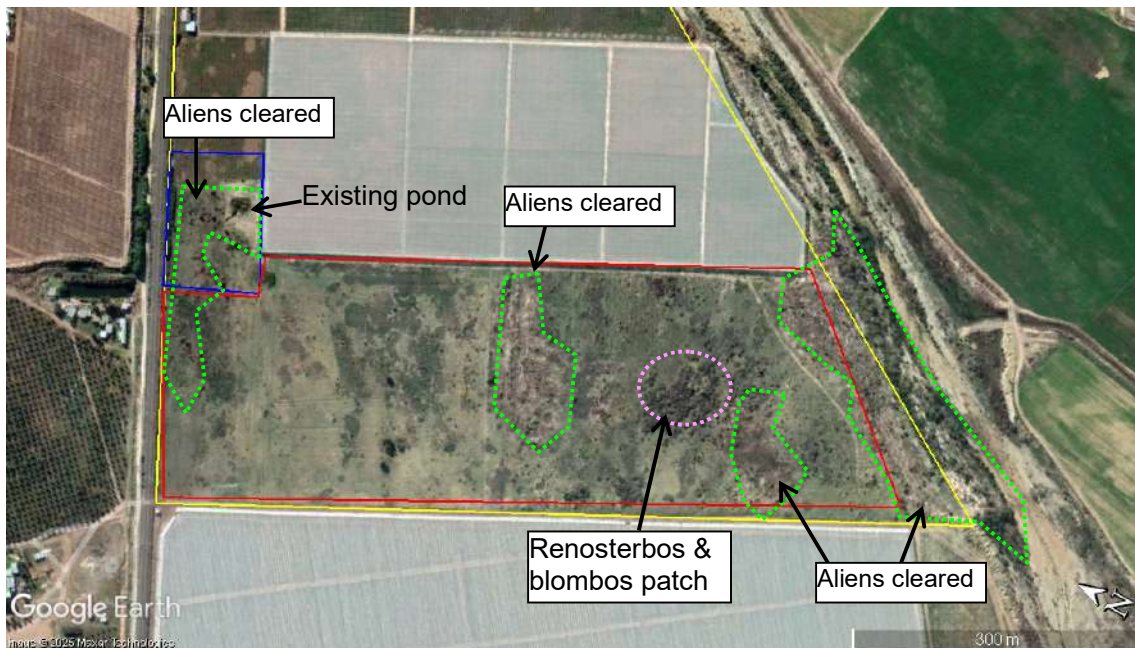


Figure 11. Earlier Google Earth image of June **2019** showing the habitat condition on site.

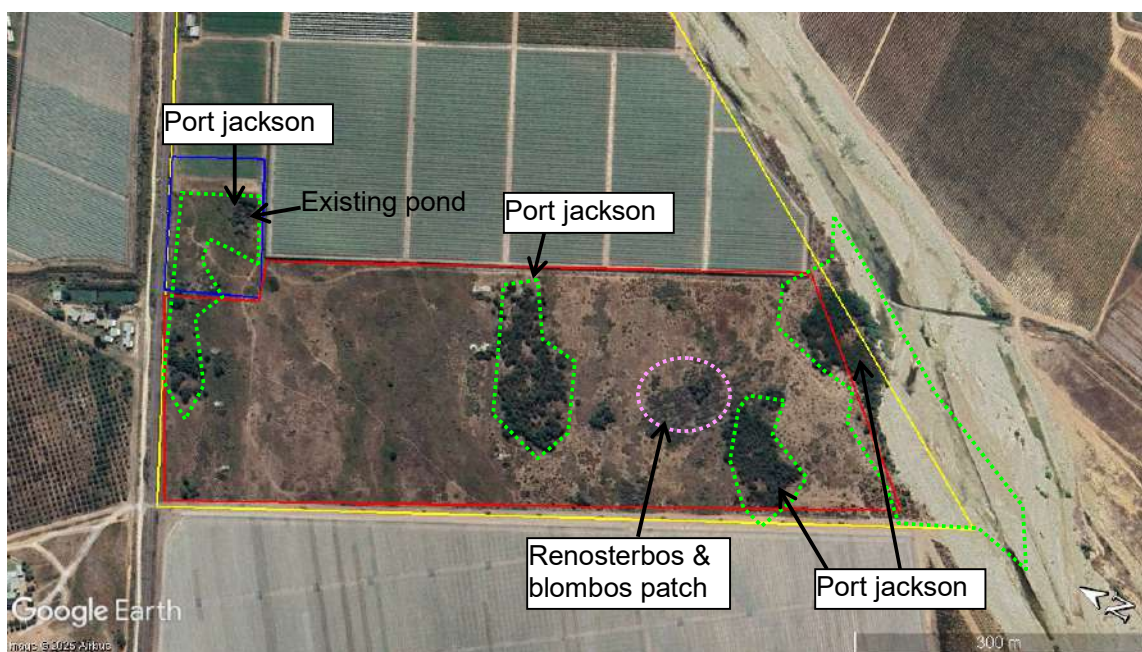


Figure 12. Recent Google Earth image of February **2025** showing the habitat condition on site.

6.6 THREATENED PLANT SPECIES

In terms of plant species, the national web based environmental screening tool recognizes the northern portion of the site to be of low sensitivity. The southern portion is considered to be of medium sensitivity in terms of plant species (Figure 12).

- The Screening Tool has listed 23 sensitive plant species that may potentially occur within the medium sensitive areas, based on their habitat requirements and the mapped ecosystems on site (e.g. species previously recorded in the same habitat type).



Figure 13. Map of relative Plant Species Theme Sensitivity

The on site assessment confirms that the study area is of “low” sensitivity for terrestrial plant species. None of the Medium Sensitive plant species listed in the Screening Tool nor any other Red Date List plant species were recorded on site. It is highly unlikely that the proposed development will impact on any plant species of conservational concern based on the overall poor habitat condition and low plant diversity.

6.7 ALIEN VEGETATION COVER

The site has a history of alien *Acacia saligna* (port jackson) infestation with various attempts to eradicate alien vegetation over the years, followed by recurring port jackson infestations (Refer to Figure 10-12 for earlier satellite imagery). Cultivation of the site will permanently eradicate alien port jackson from the site but it will remain within the Hex River.

6.8 BIODIVERSITY PROCESSES

There are no apparent biodiversity processes directly associated with the target site. The Hex River, located south of the site is an important biodiversity process area. The riverine area and an adequate buffer should be excluded from the development or any disturbances.

7. SENSITIVE / NO GO AREAS AND RECOMMENDED LAYOUT

The most significant constraints associated with Dam site 1 and the target cultivation site includes the following:

- Original ecosystem on site is Endangered Breede Alluvium Renosterveld
- The entire site is mapped as a terrestrial CBA
- The site is located directly adjacent to the Hex River

The reason for this site being recognised as a CBA is presumably as it is likely to supports a near-natural form of an endangered ecosystem and that the preservation of this site should contribute to the preservation of the remaining extent of endangered Breede Alluvium Renosterveld.

It is however the specialist’s opinion that the site is currently not contributing to the preservation of the original ecosystem on site. It is very unlikely that the site will contribute to the preservation of this ecosystem in future:

- In theory the site should be regarded as natural vegetation as it was cultivated more than 10 years ago and some natural plant species re-established on site, but the site is currently in a poor condition with very low natural plant diversity and high levels of alien infestation. There is very little representation of the original ecosystem evident on site.
- The site is also not recognised as a natural remnant in the SANBI Red List of Ecosystems: Remnants layer of June 2021.

- The site remained in a poor condition over many years and is likely to even further deteriorate due to recurring alien infestation.
- Since the 2019 field survey there was no improvement in species diversity or habitat condition. Most likely the result of a deficient seed bank (long term historic cultivation) and the lack of nearby source populations. The site is completely bounded by cultivation areas of which most areas are covered by netting.

It is therefore recommended that the development of a dam and new cultivation areas be authorised for this site but a minimum buffer of 32m should be maintained between new cultivation areas and the bordering Hex River. There is a clear terrace between terrestrial areas on site and the lower lying river floodplain area.

8. ASSESSMENT OF IMPACTS (TERRESTRIAL BIODIVERSITY)

8.1 CRITERIA FOR ASSESSMENT

Adapted from the DEA&DP Guidelines for involving Biodiversity Specialists in EIA Processes, 2005 and latest Basic Assessment Report template.

Nature of the impact

This is an appraisal of the type of effect (positive or negative) the construction, operation and maintenance of a development would have on the affected environment. This description should include what is to be affected.

Extent of the impact

Extent defines the physical extent or spatial scale of the impact. The impact could:

- **Site specific:** limited to the site.
- **Local:** limited to the site and the immediate surrounding area (1-10km)
- **Regional:** covers an area that includes an entire geographic region or extends beyond one region to another.
- **National:** across national boundaries and may have national implications.

Duration of the impact

- **Short term:** 0-5 years.
- **Medium term:** 5-15 years.
- **Long term:** beyond the operational phase, but not permanently).
- **Permanent:** where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.

Consequence of Impact

Indicate how the activity will affect the environment.

Probability of occurrence

- **Improbable/unlikely:** low likelihood of the impact occurring.
- **Probable:** distinct possibility the impact will occur.
- **Highly probable:** most likely that the impact will occur.
- **Definite:** impact will occur regardless of any prevention measures.

Irreplaceable loss of resources

The degree to which resources will be irreplaceably lost due to the proposed activity. It can be **no loss of resources**, **marginal loss**, **significant loss** or **complete loss of resources**.

Reversibility

This refers to the degree to which an impact can be reversed.

- **Fully reversible:** where the impact can be completely reversed.
- **Partly reversible:** where the impact can be partially reversed.
- **Irreversible:** where the impact is permanent.

Indirect impacts

Indirect impacts are secondary impacts and usually occur at a different place or time.

Cumulative impact

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development.

The cumulative effect can be:

- **Negligible:** the impact would result in negligible to no cumulative effect.
- **Low:** the impact would result in insignificant cumulative effects.
- **Medium:** the impact would result in minor cumulative effects.
- **High:** the impact would result in significant cumulative effects.

Degree to which impact can be avoided

The degree of avoidance can either be **high** (impact is completely avoidable), **moderate** (avoidable with moderate mitigation), **low** (the impact is difficult to avoid and will require significant mitigation measures) or **unavoidable** (the impact is cannot be avoided even with significant mitigation).

Degree to which impact can be managed

This indicates the degree to which an impact can be managed over time. The degree of management can either be **high** (completely manageable), **moderate** (impact is manageable with moderate mitigation), **low** (the impact is difficult to manage and will require significant mitigation measures) or **unmanageable** (the impact is cannot be managed even with significant mitigation measures).

Degree to which an impact can be mitigated

This indicates the degree to which an impact can be reduced. The degree of mitigation can either be **high** (the impact can be **fully** mitigated), **moderate** (can be **partly mitigated**) or **not mitigated at all**.

Significance

Based on a synthesis of the information contained in the above-described procedure, the significance of the potential impacts can be assessed (prior and post mitigation) in terms of the following significance criteria:

- **No impact.**
- **Low negative:** where it would have negligible effects, and would require little or no mitigation.
- **Medium negative:** the impact will have moderate effects and will require moderate mitigation.
- **High negative:** the impact will have significant effects and will require significant mitigation measures to achieve an accepted level of impact.
- **Very high negative:** the impact will have highly significant effects and are unlikely to be able to be mitigated adequately.

8.2 CONSTRUCTION PHASE

Potential impact and risk:	Terrestrial Biodiversity
Nature of impact:	Physical transformation natural vegetation.
Extent and duration of impact:	Site, Permanent
Consequence of impact or risk:	Loss of ± 18 ha degraded habitat.
Probability of occurrence:	High
Degree to which the impact may cause irreplaceable loss of resources:	Very restricted loss
Degree to which the impact can be reversed:	Irreversible
Indirect impacts:	The development may indirectly impact on the adjacent Hex River floodplain area. The development will result in the permanent eradication of alien vegetation on site which should reduce spread into riverine areas.
Cumulative impact prior to mitigation:	Low
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be avoided:	Low
Degree to which the impact can be managed:	Partially
Degree to which the impact can be mitigated:	Partially
Proposed mitigation:	Refer to Section 9
Residual impacts:	None
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Very Low

8.3 OPERATIONAL PHASE

The development is not expected to have any impact in terrestrial biodiversity during the operational phase. There are no natural terrestrial areas bordering the site.

No-Go:

- Should the site not be developed, alien infestation will continue throughout the site.
- It is highly unlikely that the site will ever regenerate back to the original ecosystem due to a lack of source populations, continuous disturbances including grazing and alien infestation.

9. PROPOSED MITIGATION

- The development area should be clearly demarcated along the southern portion of the site, adjacent to the Hex River.
- The Hex River floodplain and a 32m buffer area should be excluded from any development or disturbances. The development should be restricted to areas above the paleo-terrace adjacent to the Hex River.

- Rocks and vegetation debris should not be dumped within the Hex River floodplain area.
- Alien vegetation should continuously be managed and controlled within the Hex River using standard DWAF methodology. The Department of Agriculture Landcare should be consulted regarding alien control along the river bank to prevent destabilization of the river bank.

10. CONCLUSION

The proposed development of a dam (either site 1 or 2) and new cultivation within the target site is acceptable from a terrestrial biodiversity and plant species perspective. It is recommended that the development be authorised based on the following:

- The site is highly degraded and was completely transformed in the past.
- There is very little representation of the original ecosystem evident on site. Natural plant diversity is very low.
- The development will not impact on natural connectivity.
- The site is bounded by cultivation and completely isolated from other natural areas.
- It is highly unlikely that the site will ever regenerate back to the original ecosystem due to the overall lack of improvement over the years, a lack of source populations, continuous disturbances including grazing and alien infestation.
- There are no watercourses or wetlands evident on site.
- There are no threatened plant species evident on site.

Development of the site (dam and cultivation) will not significantly compromise biodiversity. Should the site not be developed, alien re-infestation will continue throughout the site.

Overall the impacts on terrestrial biodiversity should be Very Low. Mitigation are proposed to prevent impacts on the bordering Hex River.

11. REFERENCES

- Brownlie, S. 2005. Guideline for involving biodiversity specialists in EIA processes: Edition 1. CSIR Report No. ENV-S-C 2005-053 C. Provincial Government of the Western Cape: Department of Environmental Affairs and Development Planning.
- DEA 2014. National Environmental Management Act – EIA Regulations – App 6 of GN R982. Minimum requirements for specialist studies, as amended by GN 326 of April 2017.
- DEA 2020. National Environmental Management Act, 1998 (Act no. 107 of 1998): Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the National Environmental Management Act, 1998, when applying for environmental authorisation [G 43110 – GN 320]

- DFFE 2022. National Environmental Management Biodiversity Act, 2004 (Act no. 10 of 2004): The Revised List of Ecosystems that are Threatened and in need of Protection. *Government Gazette* Vol. 2747: No. 47526 of 18 November 2022. National Printer, Pretoria.
- Helme, N.A. 2007. Botanical report: Fine scale vegetation mapping in the Upper Breede River Valley. Report for CapeNature, as part of the C.A.P.E. program.
- Rebelo, A. G., Boucher, C., Helme, N., Mucina, L., & Rutherford, M.C. et al. 2006. Fynbos Biome. In: L. Mucina & M.C. Rutherford (eds). The Vegetation of South Africa, Lesotho and Swaziland. *Strelitzia* 19: 194. South African National Biodiversity Institute, Pretoria.

**APPENDIX A - LOCATION OF CONTENT PRESCRIBED BY NEMA FOR SPECIALIST
REPORTS: PROCEDURES FOR ASSESSMENT AND MINIMUM CRITERIA FOR REPORTING,
GN 320 DATED 20 MARCH 2020**

Table 1: Minimum Requirements for Terrestrial Biodiversity Specialist Assessment as per Protocol for the Specialist Assessment of Environmental Impacts on Terrestrial Biodiversity (GN 320 of 20 March 2020)		
Protocol ref	Terrestrial Biodiversity Specialist Assessment	Section / Page
2.3	The assessment must provide a baseline description of the site which includes, as a minimum, the following aspects:	Section 6
2.3.1	a description of the ecological drivers or processes of the system and how the proposed development will impact these	Section 6.8
2.3.2	ecological functioning and ecological processes (e.g. fire, migration, pollination, etc.) that operate within the preferred site;	Section 6.2, 6.10
2.3.3	the ecological corridors that the proposed development would impede including migration and movement of flora and fauna;	Section 6.2
2.3.4	the description of any significant terrestrial landscape features (including rare or important flora- faunal associations, presence of strategic water source areas (SWSAs) or freshwater ecosystem priority area (FEPA) sub catchments;	Section 6.
2.3.5	a description of terrestrial biodiversity and ecosystems on the preferred site, including: a) main vegetation types; b) threatened ecosystems, including listed ecosystems as well as locally important habitat types identified; c) ecological connectivity, habitat fragmentation, ecological processes and fine - scale habitats; and d) species, distribution, important habitats (e.g. feeding grounds, nesting sites, etc.) and movement patterns identified;	Section 6.4-6.7
2.3.6	the assessment must identify any alternative development footprints within the preferred site which would be of a low" sensitivity as identified by the screening tool and verified through the site sensitivity verification; and	Section 7
2.3.7	the assessment must be based on the results of a site inspection undertaken on the preferred site and must identify: 1. terrestrial critical biodiversity areas (CBAs), including: a) the reasons why an area has been identified as a CBA; b) an indication of whether or not the proposed development is consistent with maintaining the CBA in a natural or near natural state or in achieving the goal of rehabilitation; c) the impact on species composition and structure of vegetation with an indication of the extent of clearing activities in proportion to the remaining extent of the ecosystem type(s); d) the impact on ecosystem threat status; e) the impact on explicit subtypes in the vegetation; f) the impact on overall species and ecosystem diversity of the site; and g) the impact on any changes to threat status of populations of species of conservation concern in the CBA; 2. terrestrial ecological support areas (ESAs), including: a) the impact on the ecological processes that operate within or across the site; b) the extent the proposed development will impact on the functionality of the ESA; and c) loss of ecological connectivity (on site, and in relation to the broader landscape) due to the degradation and severing of ecological corridors or introducing barriers that impede migration and movement of flora and fauna; 3. protected areas as defined by the National Environmental Management: Protected Areas Act, 2004 including- a) an opinion on whether the proposed development aligns with the objectives or purpose of the protected area and the zoning as per the protected area management plan; 4. priority areas for protected area expansion, including-	Section 6.1-6.3

	a) the way in which in which the proposed development will compromise or contribute to the expansion of the protected area network; 5. SWSAs including: a) the impact(s) on the terrestrial habitat of a SWSA; and b) the impacts of the proposed development on the SWSA water quality and quantity (e.g. describing potential increased runoff leading to increased sediment load in water courses); 6. FEPA sub catchments, including- a) the impacts of the proposed development on habitat condition and species in the FEPA sub catchment; 7. indigenous forests, including: a) impact on the ecological integrity of the forest; and b) percentage of natural or near natural indigenous forest area lost and a statement on the implications in relation to the remaining areas.	
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Table 2: Minimum Content Requirements for Terrestrial Biodiversity Specialist Reports as per Protocol for the Specialist Assessment of Environmental Impacts on Terrestrial Biodiversity (GN 320 of 20 March 2020)		
Protocol ref	Terrestrial Biodiversity Specialist Report Content requirement	Section / Page
3.1.1	contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Page 3
3.1.2.	a signed statement of independence by the specialist;	Page 3
3.1.3.	a statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 4 & 5
3.1.4.	a description of the methodology used to undertake the site verification and impact assessment and site inspection, including equipment and modelling used, where relevant;	Section 3, 4 & 8.1
3.1.5.	a description of the assumptions made and any uncertainties or gaps in knowledge or data as well as a statement of the timing and intensity of site inspection observations;	Section 5
3.1.6.	a location of the areas not suitable for development, which are to be avoided during construction and operation (where relevant);	Section 7.
3.1.7.	additional environmental impacts expected from the proposed development;	Section 8.2-8.6
3.1.8.	any direct, indirect and cumulative impacts of the proposed development;	
3.1.9.	the degree to which impacts and risks can be mitigated;	
3.1.10.	the degree to which the impacts and risks can be reversed;	
3.1.11.	the degree to which the impacts and risks can cause loss of irreplaceable resources;	
3.1.12.	proposed impact management actions and impact management outcomes proposed by the specialist for inclusion in the Environmental Management Programme (EMPr);	Section 9
3.1.13.	a motivation must be provided if there were development footprints identified as per paragraph 2.3.6 above that were identified as having a "low" terrestrial biodiversity sensitivity and that were not considered appropriate;	Section 7
3.1.14.	a substantiated statement, based on the findings of the specialist assessment, regarding the acceptability, or not, of the proposed development, if it should receive approval or not; and	Section 10
3.1.15.	any conditions to which this statement is subjected.	Section 9 & 10