Eco Route
ENVIRONMENTAL CONSULTANCY
REGISTRATION NO. 1998/031976/23

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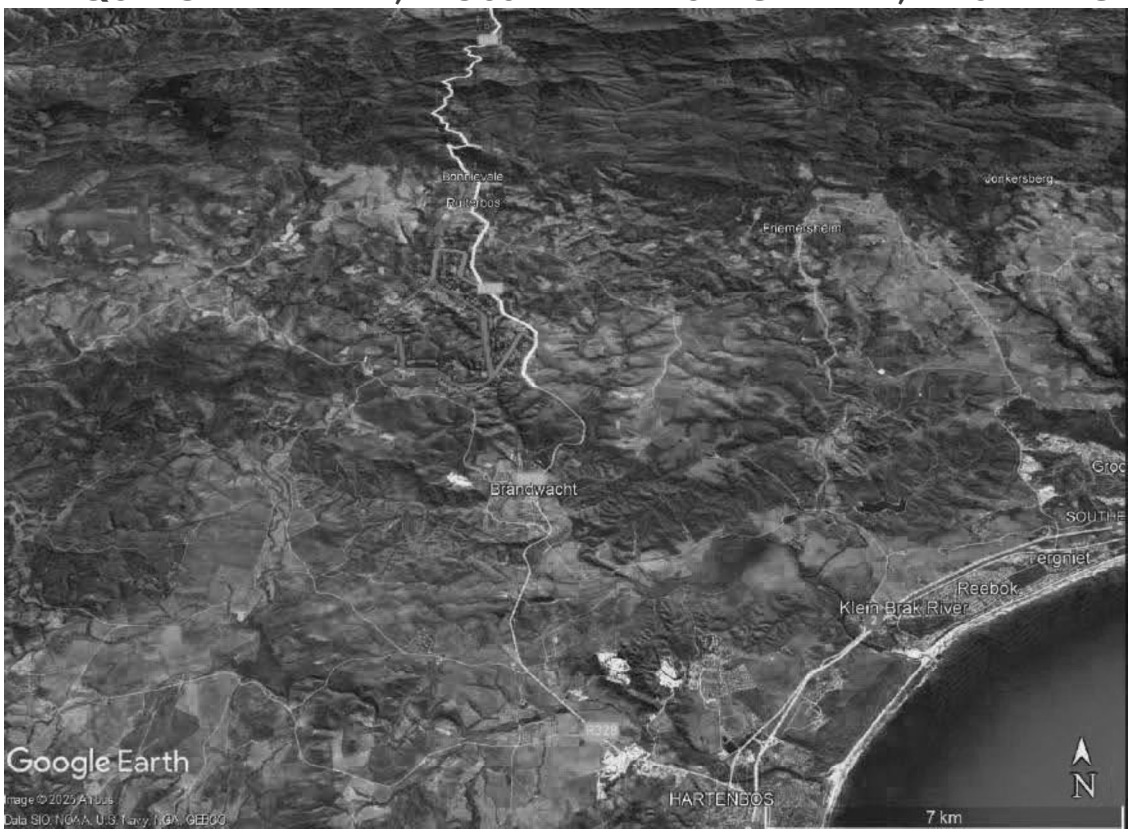
Appendix I – DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT (Draft EMPr)

In terms of the **National Environmental Management Act** (Act No. 107 of 1998, as amended) & 2014 Environmental Impact Regulations (as amended, 2017) for:

ACTIVITIES CARRIED OUT AND PROPOSED ON FARM PORTIONS 420 AND 373, OUTENIQUA GAME FARM, MOSSEL BAY MUNICIPALITY, WESTERN CAPE



PREPARED FOR THE APPLICANT:	Outeniqua Game Farm - Patick Moore EMAIL: Ogfcc1@gmail.com
AUTHOR:	CLAIRE DE JONGH (EAPASA REG: 2021/3519)
DATE:	**April 2025**

ENVIRONMENTAL MANAGEMENT PROGRAMME REQUIREMENTS:

Appendix 4 of Regulation 982 of the 2014 EIA Regulations (as amended, 2017) published in terms of the NEMA, contains the required contents of an Environmental Management Programme (EMP). The table below serves as a summary of how these requirements were incorporated into this EMPR:

An EMPr must comply with section 24N of the Act and include:-

(a) Details of – (i) The EAP who prepared the EMPr; and (ii) The expertise of the EAP to prepare an EMPr, including a curriculum Vitae;	This EMPr was prepared by Claire De Jongh. of Eco Route. Please see attached CV of the EAP (Annexure 3).
(b) A detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Section 9 - ENVIRONMENTAL MANAGEMENT PROGRAMME
(c) a map at an appropriate scale which superimposes the proposed activity, it associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that should be avoided, including buffers;	Annexure 1 and 2
(d) A description of the impact management outcomes, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – (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, operation activities;	Appendix J – Impact assessment Report
(f) a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraph (d) 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 provision for rehabilitation, where applicable;	Section 9 - ENVIRONMENTAL MANAGEMENT PROGRAMME
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 9 - ENVIRONMENTAL MANAGEMENT PROGRAMME **1. Section 6 -Monitoring Plan** **Monitoring at rehabilitated OGF1 dam site** Monitoring should also take place by the land-owner following heavy rainfall to identify and proactively address erosion before it can progress too severely;

	Monitoring of the site is recommended to ensure that rehabilitation efforts are successful and that problematic areas are attended to effectively and pro-actively. Revegetation of the buffer and previously excavated area must be monitored 6-monthly by an ECO or Aquatic Ecologist until such time that revegetation of the banks is considered satisfactory; Roads and crossings • Regular monitoring of tracks must be undertaken to assess signs of degradation. Revegetation • Ensure there is adequate vegetative cover to prevent erosion in riparian buffer zones, especially during months when higher rainfall is expected; • Where temporary vegetation has been planted, follow up to determine whether indigenous vegetation is establishing, and begin active revegetation with indigenous plants if necessary. This should be done following one growing season; and • Fixed point photography of sites where revegetation has been implemented should be used to track ground cover. Alien clearing • In order to maintain the integrity of the channel and riparian habitat it is important that alien invasive plant species are not allowed to re-establish along the channel: • Routine inspection of the channel banks must take place (every six months) to do follow-up control of the establishment of alien invasive plant species. Frequent inspection should allow alien plants species to be removed by hand pulling; and • In the event that hand-pulling is not possible, the cut and stump method is recommended. River Channel • Subsequent to the reinstatement of the channel, frequent spot checks should be carried out after rainfall events to ensure that the stability of the channel

	bed and bank is such that erosion is prevented; • Regular maintenance such as removal of debris in the channel should be carried out to ensure there is no flow blockage or constriction which could cause erosion or washout. Debris removal should be carried out by hand to prevent destabilization of the channel; and • Any bank sections which have become exposed and appear vulnerable to erosion should be immediately protected in an appropriate manner so as to prevent or arrest the erosive process before further damage to the channel can occur. • Long-term monitoring plan for the kikuyu grass at the jeep track along the Ruiterbos River to ensure that it doesn't invade into the Ruiterbos River drainage line. **Flow Monitoring:** • Pumps used to abstract water from the dam must be fitted with calibrated flow meters with the purpose of ensuring that annual lawful water allocations are not exceeded, and abstraction volumes must be submitted to BOCMA bi-annually to ensure lawful water use. • Biomonitoring Plan: An aquatic biomonitoring programme, including at minimum SASS and IHI (Index of Habitat Integrity) assessments, must be implemented. This plan should monitor whether the dam's environmental flow releases are maintaining downstream aquatic ecosystem integrity at the Recommended Ecological Category (REC). The specific frequency, timing, and monitoring indicators must be informed by the EWR determination. **AIS and rehabilitation** • Annual audit recommended to determine level of rehabilitation, extent of AIS and population levels of *Agathosma recurvifolia* and *Cyclopia subternata* to inform sustainable harvesting. EMP Targets Section 7 - COMPLIANCE WITH THE EMPr

(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	**2. Section 6 -Monitoring Plan** **Monitoring at rehabilitated OGF1 dam site** Monitoring should also take place by the land-owner following heavy rainfall to identify and proactively address erosion before it can progress too severely; Monitoring of the site is recommended to ensure that rehabilitation efforts are successful and that problematic areas are attended to effectively and pro-actively. Revegetation of the buffer and previously excavated area must be monitored 6-monthly by an ECO or Aquatic Ecologist until such time that revegetation of the banks is considered satisfactory; Roads and crossings • Regular monitoring of tracks must be undertaken to assess signs of degradation. Revegetation • Ensure there is adequate vegetative cover to prevent erosion in riparian buffer zones, especially during months when higher rainfall is expected; • Where temporary vegetation has been planted, follow up to determine whether indigenous vegetation is establishing, and begin active revegetation with indigenous plants if necessary. This should be done following one growing season; and • Fixed point photography of sites where revegetation has been implemented should be used to track ground cover. Alien clearing • In order to maintain the integrity of the channel and riparian habitat it is important that alien invasive plant species are not allowed to re-establish along the channel: • Routine inspection of the channel banks must take place (every six months) to do follow-up control of the establishment of alien invasive plant species. Frequent inspection should allow alien plants species to be removed by hand pulling; and

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(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Section 6 of draft EMPr
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 9 - ENVIRONMENTAL MANAGEMENT PROGRAMME **3. Section 6 -Monitoring Plan** **Monitoring at rehabilitated OGF1 dam site** Monitoring should also take place by the land-owner following heavy rainfall to identify and proactively address erosion before it can progress too severely; Monitoring of the site is recommended to ensure that rehabilitation efforts are successful and that problematic areas are attended to effectively and pro-actively. Revegetation of the buffer and previously excavated area must be monitored 6-monthly by an ECO or Aquatic Ecologist until such time that revegetation of the banks is considered satisfactory; Roads and crossings • Regular monitoring of tracks must be undertaken to assess signs of degradation. Revegetation • Ensure there is adequate vegetative cover to prevent erosion in riparian buffer zones, especially during months when higher rainfall is expected; • Where temporary vegetation has been planted, follow up to determine whether indigenous vegetation is establishing, and begin active revegetation with indigenous plants if necessary. This should be done following one growing season; and • Fixed point photography of sites where revegetation has been implemented should be used to track ground cover. Alien clearing

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(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	**4. Section 6 -Monitoring Plan** **Monitoring at rehabilitated OGF1 dam site** Monitoring should also take place by the land-owner following heavy rainfall to identify and proactively address erosion before it can progress too severely; Monitoring of the site is recommended to ensure that rehabilitation efforts are successful and that problematic areas are attended to effectively and pro-actively. Revegetation of the buffer and previously excavated area must be monitored 6-monthly by an ECO or Aquatic Ecologist until such time that revegetation of the banks is considered satisfactory; Roads and crossings • Regular monitoring of tracks must be undertaken to assess signs of degradation. Revegetation • Ensure there is adequate vegetative cover to prevent erosion in riparian buffer zones, especially during months when higher rainfall is expected; • Where temporary vegetation has been planted, follow up to determine whether indigenous vegetation is establishing, and begin active

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(l) a program for reporting on compliance, taking into account the requirements as prescribed by Regulations;	Section 4 - REPORTING PROCEDURES Section 7 - COMPLIANCE WITH THE EMPr
(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; and	Section 7 - COMPLIANCE WITH THE EMPr Section 10. - DRAFT STAFF / RESIDENT CONDUCT CONTROL AND INFORMATION SHEET
(n) any specific information that may be required by the competent authority.	Draft EMPr and Appendix J – Impact Assessment

Glossary of Terms

AIS	**Alien Invasive Species**
BOGMA	**Breede-Olifants Catchment Management Agency -** Catchment Management Agency established to manage water resources in the Breede-Olifants region. BOGMA operates under the oversight and regulatory role of the DWS.
CBA	**CBA Critical Biodiversity Area** – Areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure.
DFFE	**Department Forestry Fisheries and Environment**– the national authority for sustainable environmental management and integrated development planning.
DEADP	**Department of Environmental Affairs and Development Planning** – the provincial authority for sustainable environmental management and integrated development planning.
DWS	**Department of Water and sanitation** – responsible for issuing of Water Use License
EAP	**Environmental Assessment Practitioner –** An EAP and a specialist, appointed in terms of regulation 12(1) or 12(2) must – (a) be independent. (b) Have expertise in conducting environmental impact assessments or undertaking specialist work as required, including knowledge of the Act, these regulations and any guidelines that have relevance to the proposed activity. (c) Ensure compliance with these Regulations (d) Perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the application. (e) Take into account, to the extent possible, the matters referred to in regulation 18 when preparing the application and any report, plan or document relating to the application; and (f) Disclose to the proponent or applicant, registered and affected parties and the competent authority all material information in the possession of the EAP and, where applicable, the specialist, that reasonably has or may have the potential of influencing – i. Any decision to be taken with respect to the application by the competent authority in terms of these regulations; or ii. The objectivity of any report, plan or document to be prepared by the EAP or specialist, in terms of these Regulations for submission to the competent authority; unless access to that information is protected by law, in which case it must be indicated that such protected information exists and is only provided to the competent authority. (2) In the event where the EAP or specialist does not comply with sub regulation (1)(a), the proponent or applicant must, prior to conducting public participation as contemplated in chapter 5 of these regulations, appoint another EAP or specialist to externally review all work undertaken by the EAP or specialist, at the applicants cost. (3) An EAP or specialist appointed to externally review the work of an EAP or specialist as contemplated in sub regulation (2), must comply with sub regulation (1).
ECO/ESO	**Environmental Control Officer** – A site agent who needs to ensure that all environmental authorisation and conditions are adhered to during the construction phase of the project
EMPr	**Environmental Management Programme –** can be **defined** as "an **environmental management** tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced".

ESA	**Ecological Support Area –** Areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Pas or CBAs, and are often vital for delivering ecosystem services.
EMPr	**Environmental Management Plan Report –** means a management plan for the activities legally binding if environmental authorisation is issued
NEMA	**National Environmental Management Act (Act 107 of 1998) as amended 2017** – national environmental legislation that provides principles for decision-making on matters that affect the environment.
PA	**Protected Area -** A protected area is an area of land or sea that is formally protected by law and managed mainly for biodiversity conservation. Protected areas recognised in the National Environmental Management: Protected Areas Act (Act 57 of 2003) (hereafter referred to as the Protected Areas Act) are considered formal protected areas in the NPAES. This is a narrower definition of protected areas than the International Union for Conservation of Nature (IUCN) definition.1 The NPAES distinguishes between land-based protected areas, which may protect both terrestrial and freshwater biodiversity features, and marine protected areas.

Contents

5. INTRODUCTION

In accordance with the Integrated Environmental Management Guidelines published by the Department of Forestry, Fisheries, and the Environment (DFFE) in 1992, the purpose of an Environmental Management Programme (EMPr) is "to describe how negative environmental impacts will be managed, rehabilitated or monitored and how positive impacts will be maximised".

Section 28 of NEMA (National Environmental Management Act, Act 107 of 1998) states that:
Duty of care and remediation of environmental damage -
"(1) Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot be reasonably avoided or stopped, to minimise and rectify such pollution or degradation of the environment"

This draft EMPr must be read in conjunction with the S24G application form and all related appendices dated April 2025; the full impact assessment is included as Appendix M which must be read by all parties. All recommendations, relevant conditions and mitigation measures provided in these documents have been included in the EMPr and must be adhered to.

This EMPr must form an integral part of the contract documents, as it outlines the methodology & duties required so that the project objectives can be achieved in an environmentally sustainable manner; with particular reference to the prevention and mitigation of environmental impacts caused by planning, construction and operational phases and activities associated with this project.

These requirements will have a financial impact on the project's planning, design, construction and operational costings.

This EMPr is a dynamic document that may require updating during the project phases in response to new and changing circumstances to mitigate environmental impacts.
Relevant changes and updated EMPr must be submitted to the DEADP for approval.

1.2 Purpose of the EMPr

The purpose of this EMPr is to ensure that the negative environmental impacts of the proposed and existing activities are managed, mitigated and kept to a minimum during the planning, construction and operational phases of the proposed development. The EMPr focuses on providing practical measures to avoiding negative environmental impacts and enhance positive environmental impacts where possible.
Once the EMPr is approved by DEA&DP it is seen as a legal binding document on the following affected parties:

1 Project Applicant.
2 Project planning team including engineers, landscapers, architects
3 All contractors and subcontractors
4 Operational management team (including staff and maintenance teams)

Copies of this EMPr must be kept on site and all senior personnel are expected to familiarise themselves with the content of this EMPr.
Method statements compiled by contractors must be aligned to relevant conditions in the EMPr and any conditions of the EA (if attained). (Planning and construction Phase)
Operational management must be aligned with relevant conditions in the EMPr and any conditions of the EA (if attained). (Planning and operational Phase)

It is suggested that the EMPr be reviewed on a 5 yearly basis if required. Should any amendments need to be made during operational phase, written authorisation should be obtained from DEA&DP.

1.2 The Polluter-Pays Principle

This principle provides for "the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimizing further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

6. PROJECT DETAILS

The project details are provided in the S24G application and accompanying Impact Assessment Report (Appendix M) and is not repeated here.

The following activities included in Listing Notices (LN) 1, 2 and 3 of the 2014 Environmental Impact Assessment (EIA) Regulations (as amended, 2071) published in terms of National Environmental Management Act (Act 107 of 1998) (NEMA) have been assessed:

- Development within / within 32 meters of watercourse (LN1, activity 19)
- Development of facilities or infrastructure for the storage of water, including dams and reservoirs (LN3 activity 2; 14, 23; LN2 activity 16; LN 1, activity 13)
- Clearance of indigenous vegetation (LN3, activity 12; LN 2 activity 15; LN 1 activity 27))
- Development of roads (LN3 activity 4, Ln 2 activity 27)

The main impacts associated with the activities include the following:

- Loss of indigenous vegetation
- Fire risk
- Susceptibility of some areas to erosion
- Impact on land capability (past grazing and current / proposed activities)
- Invasion by exotic and alien invasive species and ongoing removal
- Impact on surface water flows
- Impact on aquatic ecosystem and associated biodiversity
- Impact on socio-economic conditions as a result of employment opportunities
- Impact on socio-economic conditions as a result of agricultural activities

The EMPr contains all the mitigation measures to prevent / reduce negative environmental impacts and enhance positive impacts.

7. LEGISLATIVE REQUIREMENTS

3.1 Signing of the EMPr

The acknowledgement form at the back of the approved EMPr is to be signed by the holder of the Environmental Authorisation (the Applicant), the operational managers, any contractors / subcontractors; acknowledging that all parties are familiar with the requirements of the EMPr. All employees, especially the machine and equipment operators, are to be made aware of the conditions as contained in the EMPr as well as the contractual conditions relating to the environment as contained in the contract document.

3.2 Legislation

Of importance are all national, provincial and municipal by-laws and regulations. Statutes are amended periodically and it is the Applicant's responsibility to identify legislation relevant to the proposed activity.

3.3. Project Responsibilities

Responsibility for the implementation of the EMPr lies with the Applicant who must retain the services of a suitably experienced Environmental Assessment Practioner (EA) and / or Environmental control Officer (as relevant to activity) who will monitor any construction and operational activities as required.
The project Applicant will be responsible for the following:

- Adhering to the approved EMPr.
- Ensure that all employed operational managers, staff and any appointed contractors, architects, engineers (as applicable) are aware of and understand the conditions of the EMPr.
- Has the right to remove any person or personnel from site if in contravention with the EMPr.
- Ensure that all contracts include the authorised EMPr.
- Appoint an experienced Environmental Assessment Practioner (EA) and / or Environmental control Officer and / or specialist (as required and relevant to activity / monitoring requirement)
- The project Applicant (holder of the Environmental Authorisation of the EMPr) must notify the competent authority of the commencement of construction / maintenance activities 14 days prior to such commencement taking place.

Construction ECO's responsibilities must include, *inter alia*:

- Secure the protection and rehabilitation of the environment.
- Guide, advise and consult the relevant authority on environmental issues during construction.
- Guide, advise and consult any sub-contractors, suppliers etc. who will be involved in this project.
- Revise the EMPr as required and inform the relevant parties of the changes.
- Ensure that the EMPr has been accepted and understood as a contractually binding document on all parties involved with this project.
- Ensure staff operating equipment are adequately trained, certified and sensitised to any potential hazards / risks associated with their tasks.
- Educate staff as to the need to refrain from indiscriminate waste disposal and/or pollution of local soil and water resources, ensure that they (the staff) have received the necessary safety training, and are aware of the importance of a "clean-site policy".
- Educate staff as to the need to refrain from disturbance to all fauna and flora on site with exception of those activities included in the EMP and relate to fire management and alien invasive species.
- The management guidelines contained in this document must form part of the contractual agreements between the Applicant, Contractor and the ECO.

EAP / specialist responsibilities must include, *inter alia*:

- Carrying out monitoring and accompanying report as required

The Engineer/s and / or architect and / or contractors are responsible for the design and construction of the predator and elephant enclosures, dam, crossings at watercourses.

The operational management team is responsible for the agricultural activities, game farming activities, and associated rehabilitation, AIS and revegetation activities, road upgrades or the maintenance of dwellings, structures, enclosures, reservoirs, dams, crossings and roads.

The responsibilities indicated here are also relevant to Sub-Contractors. The responsibilities of the construction and operational management teams include but are not limited to the following:

- Adhere with the conditions and recommendations of the EMPr.
- Prevent actions that may cause harm to the environment.
- Be responsible for any remedial activities in response to an environmental incident within their scope of influence.
- Ensure compliance of all site personnel and / or visitors to the EMPr

All fines for noncompliance of EMPr to be predetermined by EAP and Project Applicant, this needs to be included in any method statements required for authorised construction activities taking place on the farm portions.

8. REPORTING PROCEDURES

4.1 Documentation

The following documentation must be kept on site in order to record compliance with the EMPr:
An Environmental File which includes:

- Copy of the EMPr;
- Copy of the EA;
- Copy of all other licences/permits;
- Construction Method Statements as required
- Non-conformance Reports;
- Environmental register, which shall include:
  - Communications Register – including records of complaints, minutes and attendance registers of all environmental meetings;
  - Monitoring Results – including environmental monitoring reports, register of audits, non-conformance reports; and
  - Incident book – including copies of notification of Emergencies and Incidents, this must be accompanied by a photographic record.
- Waste Documentation such as, but not necessarily limited to: Waste Manifest Documents;
- Material Safety Data Sheets (MSDSs) for any hazardous substances; and
- Written Corrective Action Instructions.

Reporting to DEADP – monthly during construction; annual during operations

Reporting to DWS – bi-annually (ever y 6 months) during operations

4.2. Environmental Register

The Applicant will put in place an Environmental Register and will ensure that the following information is recorded for all complaints / incidents:

- Nature of complaint / incident.

- Causes of complaint / incident.
- Party/parties responsible for causing complaint / incident.
- Immediate actions undertaken to stop / reduce / contain the causes of the complaint / incident.
- Additional corrective or remedial action taken and/or to be taken to address and to prevent reoccurrence of the complaint / incident.
- Timeframes and the parties responsible for the implementation of the corrective or remedial actions.
- Procedures to be undertaken and/or penalties to be applied if corrective or remedial actions are not implemented.
- Copies of all correspondence received regarding complaints/incidents.

4.3. Non-Conformance Report

A Non-Conformance Report (NCR) will be issued to the Applicant as a final step towards rectifying a failure in complying with a requirement of the EMPr. This will be issued by the ECO to the Applicant in writing. Preceding the issuing of a NCR, the Applicant must be given an opportunity to rectify the issue.

Should the ECO assess an incident or issue and find it to be significant (e.g. non-repairable damage to the environment), it will be reported to the relevant authorities and immediately escalated to the level of a NCR. The following information should be recorded in the NCR:

- Details of non-conformance;
- Any plant or equipment involved;
- Any chemicals or hazardous substances involved;
- Work procedures not followed;
- Any other physical aspects;
- Nature of the risk;
- Actions agreed to by all parties following consultation to adequately address the non-conformance in terms of specific control measures and should take the hierarchy of controls into account;
- Agreed timeframe by which the actions documented in the NCR must be carried out; and
- ECO should verify that the agreed actions have taken place by the agreed completion date, when completed satisfactorily; the ECO and Applicant should sign the Close-Out portion of the Non-Conformance Form and file it with the contract documentation.

4.4. Emergency Response

The Applicants environmental emergency procedures must ensure appropriate responses to unexpected / accidental actions / incidents that could cause environmental impacts.

The Environmental Emergency Response Plan is separate to the Health and Safety Plan as it is aimed at responding specifically to environmental incidents and must ensure and include the following:

- Employees shall be adequately trained in terms of incidents and emergency situations;
- Details of the organisation (i.e. manpower) and responsibilities, accountability and liability of personnel;
- A list of key personnel and contact numbers;
- Details of emergency services (e.g. the fire department / on-site fire detail, spill clean-up services) shall be listed;
- Internal and external communication plans, including prescribed reporting procedures;

- Actions to be taken in the event of different types of emergencies;
- Incident recording, progress reporting and remediation measures to be implemented; and
- Information on any hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

9. ENVIRONMENTAL MANAGEMENT PROGRAMME

It is imperative that mitigation measures are strictly adhered to and that all measures are taken wherever possible to minimize negative impacts and enhance positive impacts on the environment.

1. PLANNING AND DESIGN

The existing and proposed activities taking place on OGF requires a number of approvals to be in place prior to the start of construction of new activities.

It was proposed to increase the irrigated agricultural area on the farm by approximately 200 ha. However, following the assessment, the applicant would like to authorise the current agricultural area (60 ha) with an expansion of 20 ha on previously disturbed agricultural (dry cattle grazing) areas. Only 60 ha will be irrigated; the remaining 20 ha will be for crop rotational purposes.

A dam is required to allow for a secure supply of water for the game farming and agricultural activities. A maximum capacity of 150 000m3 and a maximum dam wall heigh of 12 meter (including 2 meters freeboard) has been assessed.

The concept dam design provided must be revised to include the following:

- A low-level outlet pipe fitted with a control valve is recommended to be incorporated into the dam wall to enable controlled release of baseflows in accordance with the Ecological Water Requirements (EWR). Refer to Section 9.1.4 - Water Management.
- A valve option is deemed to be a better option than a weir bypass in this case, because a weir and bypass pipe is more difficult to build, especially in rough terrain, it is more prone to blockages or erosion and a pipe through the dam would be a cheaper option that would be more controllable and easier to monitor.

All Phases

Planning – Planning Team

- Ensure an Environmental Management File is put in place to contain all documents / report which pertain to the relevant conditions of the planning, construction and operational phases (e.g. EA, permits, waste disposal certificates etc.)
- Ensure all approvals in place
- Ensure all preconstruction requirements are in place prior to construction
- Ensure required engineering designs is review by aquatic specialist and approved by DWS
- Method statements for construction phase are to be compiled by the project team and be aligned to mitigation measures and conditions of this EMPr the Environmental Authorisation (if attained)
- Construction team should include a suitably qualified Environmental site officer to assist with daily environmental management on site and compliance
- Appoint a EAP / specialist / environmental control officer to ensure environmental management requirements are met by carrying out monthly external audits during construction phase / annual audits during operational phase.
- Suitable budget to be assigned to environmental management requirements for construction and operational phase
- Operational management plans are to be aligned to mitigation measures and conditions of this EMpr and Environmental Authorisation (if attained)

2. Restriction of construction work areas

- Movement of workers must be limited to areas under construction. Access to surrounding areas is not permitted; these must be designated as no-go areas during construction.

3. HERITAGE

Construction Phase – Construction and Planning Teams

- If archaeological / paleontology sites are unearthed / identified, the find brought to the immediate attention of the developer and all work is to be stopped immediately and reported by the ECO accompanied by photographs and coordinates. This must be sent to a suitable specialist and the WC Heritage as soon as possible to inspect the findings. Any recommendations followed from such an investigation must be carried out.
- Any discovered artefacts shall not be removed under any circumstances without consent from the WC Heritage Authority.

Operational Phase - Operational and Planning Teams

- Operational Phase – follow procedure if any artefacts discovered in operational phase

4. TERRESTRIAL BIODIVERSITY

4.1 Restriction of footprint

- No further expansion of agricultural areas or development of structures other than those identified in this assessment should take place(**Table 2: overview of land use areas on portion 373Table 2** and **Table 3**)
- It is important that clearing activities are kept to the minimum and take place in a phased manner; this allows any smaller animal species to move into safe areas and prevents wind and water erosion of the cleared areas.
- Gathering of firewood / plants /fauna in adjacent areas is not permitted outside of search and rescue operations, AIS clearing operations. Staff and visitors should be informed of such.
- Fines must be imposed for illegal collection of plants / animals on the property and reported if required (i.e poaching suspected)
- Ongoing removal of AIS within drainage line areas on the property; Buffers (32 meters) of intact riverine / thicket vegetation should be maintained along all drainage lines and should not be used for any activities (including agricultural activities) with exception of authorised activities – road crossings, dwelling within 32 meters, AIS clearing, revegetation, instream dam)

4.2 SCC and protected species

- All protected trees identified must be demarcated prior to the commencement of the construction.
- If it is anticipated that protected trees will be affected by the construction, then the appropriate forestry licence must be obtained first.
- Construction of the dam must occur during the dry season (i.e. December to January / June to July)
- The disturbance footprint of activities must be clearly defined and demarcated
- Carry out search and rescue for indigenous fauna and flora / protected trees within the agricultural footprint / enclosure footprint prior to disturbance of the area;
- Rescue identified fauna / flora and place in similar area on property outside of construction footprint / agricultural / enclosure footprints (as necessary).
- Permits required for fauna search and rescue (i.e., tortoises) must be obtained before any construction commences. Some animal species that potentially occur in the project area are protected under CITES and the PNCO. Although the status of these species is not necessarily equivalent to that of SCC, a permit is required for

their removal where appropriate. For example, tortoises are listed on Schedule 2 of the PNCO and will, therefore, require permits for their removal during the construction phase of the project.
- A permit is required for activities that disturb protected bird species, particularly during the breeding season. Sites with eggs or chicks are considered to be protected sites.
- Threatened species should be removed to similar habitat within proximity of the project area by a suitably qualified person where appropriate. Reptiles such as lizards are less mobile compared to mammals, and some mortalities could arise.
- Record of permits for removal / transplanting of sensitive species of conservational concern / protected trees to be kept on record in EM file for audit purposes.
- Ensure all required permits are in place from CapeNature for the predator and elephant enclosures.

4.3 Fauna management and monitoring

- At any point (during construction), if an animal with limited mobility is observed on site, this should be reported to the ECO and construction temporarily halted.
- No animals are to be harmed or killed during the course of operations
- All open excavations must be securely fenced or barricaded. Excavations / dams / reservoirs must be checked daily for trapped fauna; floating devices should be placed in these for any trapped fauna to use. Trapped animals are to be rescued and released.
- For any assistance with snake removals/relocations, identifications, or bite treatment contact the African Snakebite Institute.
- No insect zappers should be allowed on site, nor the general application of insecticides around infrastructure. Ecofriendly repellents are readily available (i.e. citronella oil/lotions) and should be used instead.
- No feeding of wildlife is permitted, and no disposal/discarding of any food waste (bones, scraps, fruit pips/cores) within the surrounding environment is allowed.

4.4 Landscaping

- Gardens to be redesigned to be water wise and avoid erosion and friendly to wildlife and the greater natural habitat.
- Plan gardens to capture rainfall & slow water loss.
- Create a grey-water wetland if there is a need for water filtration & absorption of extra nutrients.
- No garden waste is to be dumped in any remaining natural area and must be disposed of in a responsible manner. Select an existing level site within an existing disturbed footprint for a composting area.
- No NEMBA invasive plants permitted in landscaping
- Plant local indigenous vegetation; thicket around dwellings are recommended as fire mitigation measures; grey water wetlands can also be planned to serve as a firebreak for the dwellings.
- Avoid plants that are hybrids and cultivars
- Plant during the rainy season (early winter May/June) and add a 10cm thick layer of wood chip to keep in moisture.
- Reduce or replace lawns with water-wise groundcovers or enlarging shrub beds.
- Add local edible and aromatic plants
- Avoid water & nutrient intensive vegetable gardens
- Ensure soft landscaping (natural vegetation) is used as opposed to hard landscaping (avoid impermeable surfaces)
- Clearly delineate maintenance zones and employ low-impact maintenance techniques
- Schedule major maintenance activities to avoid critical periods such as flowering, seed dispersal, and pollination periods (for most species this is during spring between September to November).

4.5 Game Farming and Stock Farming:

The carrying capacity of ptn 420 is estimated at between 45 and 65 LSU; the existing LSU is 92 LSU.
The carrying capacity of ptn 373 is estimated at between 60 and 104 LSU; the existing LSU of 107 is considered to be at maximum land capacity.
The current ratio of feeders is estimated at:

- Browsers: ~28.5%
- Grazers: ~39.5%
- Mixed Feeders: ~32%

Recommended ratio:

- Browsers: ~40–60% Browsers
- Grazers: ~30–50% Grazers
- Mixed Feeders ~10–20%

- Reassess stocking rates and the browser: grazer ratio relative to carrying capacity
- Monitor sensitive species and implement exclusion zones or buffer areas in regions with confirmed SCC or high conservation value.
- Consider removal of extra-limital selective grazers (zebra, waterbuck) are not typical of this vegetation type – their presence should be justified by low numbers and active management.
- Encourage coexistence of native fauna and managed game by:
  - Maintaining connectivity between natural patches
  - Avoiding fencing that blocks small animal movement
- Ongoing monitoring of the 4 elephants will be required to determine their natural foraging in the area during walks. Record of plants utilized naturally should be kept and note if any AIS is preferred.
- Incorporate these measures into a comprehensive game farm management plan
- Ensure all SCC permits, enclosure permits, and game farming permits are in place and kept up to date and relevant requirements are adhered to

5. Roads and crossings

- Preferably one road should be used for access (entry and exit) to the OGF 2 dam; the access road may not be the Jeep track that extends between Areas 2 and 3 along the Ruiterbos River.
- Entry/exit points at each crossing must be restricted to a single track to limit disturbance to the bank and the potential for erosion to occur; and
- Road crossings must be routinely inspected. Any bank sections which have become exposed and appear vulnerable to erosion should be immediately protected in an appropriate manner so as to prevent or arrest the erosive process before further damage to the channel can occur;
- No new road may be constructed directly adjacent to an eroding existing road, especially when no erosion control measures are in place.
- Determine which roads are needed for game drives, agricultural activities and management activities and rehabilitate roads not needed / not feasible to drive- mulch and revegetate
- No more new roads are to be made along the valley slopes that lead to the Ruiterbos River.
- Where feasible, utilize existing roads instead of constructing new ones. Upgrading and expanding current roadways can be more environmentally beneficial than creating new routes.
- Some of the existing roads are redundant, and one path must be chosen and used. Design and implement shared access routes where possible, combining multiple access points into single, multi-use roads. This approach minimizes the total length of roads required and reduces habitat fragmentation.
- Plan road layouts to minimize impact on sensitive areas, such as wetlands, riparian zones, and critical habitats. Ensure that the road network is as compact and direct as possible to reduce land disturbance and fragmentation.

- Where roads are along steep inclines, ensure that the road meanders down as opposed to cutting straight down. This will minimise erosion.
- The new road that was excavated between May and August 2024 must be rehabilitated with fynbos species only, as the old road is still functional and can be upgraded to reduce the likelihood that it will become eroded.
- The illegal wide road assessed north of the northernmost dwelling in Area 2 should preferably be rehabilitated and the associated river crossing should be removed.
- The road at Area 4-16 should be equipped with a culvert and the dammed area modified to ensure drainage from the area; the surrounding 0.89 ha to be seeded with thicket / fynbos vegetation. A well-maintained road between Areas 4-15 and 4-17 is important as these will be the main agricultural areas on the site.
- Put in place stone spillways / culverts where necessary
- Put in place anti-erosion berms in roads where necessary
- Establish strict speeding regulations. All personnel and visitors to abide to speeding regulations. Signs should be put up along the roads to remind people of speed limits, as well as warnings to look out for small animals on the roads. Speedbumps or other speed reducing techniques can be incorporated into the road design to assist in keeping speeds to a minimum.

6. Alien Invasive Vegetation Management

Landowners are under legal obligation to control alien plants occurring on their properties. Alien Invasive Plants require removal according to the Conservation of Agricultural Resources Act 43 of 1983 (CARA) and the National Environmental Management: Biodiversity Act (10 of 2004; NEMBA): Alien and Invasive Species Lists (GN R598 and GN R599 of 2014).

The property should implement the removal of alien plants in accordance with an alien management plan, best practices guidelines and legal requirements.

6.1 Construction activities

- Materials used during construction must be sourced and transported responsibly to minimise the risk new invasive plants
- Adequately clean construction equipment and machinery to prevent the transfer of invasive seeds / plant material between sites.
- Train all staff to identify common AIS (black wattle) and hand remove as soon as detected
- Dispose small plants; large plants are addressed for operational phase
- Native plant species collected during site clearing activities to be used for site restoration and revegetation to outcompete invasive plants and restore ecological balance

6.2 AIS management plan

Alien invasive species management plan to include:

- Protected trees may not be impacted on by clearing activities
- Disturbed areas around dwellings must be cleared of invasives with the aim of rehabilitating the fynbos / thicket vegetation.
- When chemical treatments are necessary for the treatment of invasive plants, use targeted applications that minimize exposure to non-target species.
- Areas with new / small infestations should be targeted for alien clearing first, gradually moving to areas with denser & more established invasions.
- Target hilltops and upstream areas first for clearing.
- Native plant species should be used for site restoration and revegetation to outcompete invasive plants and restore ecological balance.

- New invasions to be promptly cleared on ongoing basis
- Set up collection areas for removed AIS materials – areas should be level and outside floodline
- Do not stockpile removed AIS materials / debris in watercourses within floodline of the river
- Alien invasive species must continue to be controlled along the river. Felled trees must be removed from the banks and must not be dumped in the active channel of the river.
- No burning of AIS is preferred; if AIS material is to be burnt it must not be burnt in watercourses / within floodline of the river
- Clear smaller areas at a time;
- Shred / chip cleared material (if no seeds) on site to create mulch to prevent erosion and suppress wattle regrowth and / or create windrows (long, narrow piles) of AIS material away from the river and position these on contour lines to reduce erosion and allow for natural decomposition
- Separate seed-bearing material from material that will be chipped and correctly dispose off site / alternatively cut prior to seed formation or implement biological control measures to prevent seed formation (seed-feeding weevils and gall-forming flies and wasps which prevent seed production by inducing the formation of galls instead of seed pods). This will increase the prospects for effective control through the combination of mechanical felling, fire, and seed reduction.
- Passive regeneration together with active planting of the riparian zone must be encouraged. Passive regeneration allows indigenous species to naturally re-seed and re-establish along the banks. This process must be encouraged wherever possible and vehicle access must be restricted to use of the road only so as to avoid disturbance to new seedlings. Recommended plant species for active planting provided in rehabilitation measures (Table 4)
- Combine mechanical felling, chemical control, and biological control. This measure is in place for Black wattle infestations along the valley edges where the Ruiterbos River meanders.
- Plant indigenous vegetation (such as carpobrotus or other thicket soil binding plants) on cleared sloped areas to encourage regrowth as per rehabilitation measures.
- Fire management should also include burning of dense AIS areas – where burning of wattle occurs prior to seed bearing stage of wattle and during seeds formation of fynbos (i.e. winter months)
- New invasions to be promptly cleared on ongoing basis
- Research shows that elephants have preference to Acacia mearnsii to fynbos vegetation; plan walks through areas with newly emerging A. mearnsii in attempt to allow elephants to remove these naturally. A. mearnsii which is cut on the property can also be used as feed for the elephants in combination with lucerne.

7. FIRE MANAGEMENT

- Fire management must comply with the National Veld and Forest Fire Act No. 101 of 1998, which mandates a 5m fire break where natural veld adjoins agricultural land or alien areas.
- All landholders must implement a fire management plan. A permit is required from the Fire Protection Association (FPA) to conduct controlled burns.
- Controlled burns must be planned with local fire authorities
- Recommended fire frequency: Every 10 to 15 years for mature calcrete and silcrete fynbos types as these fynbos types typically regenerate more slowly than sandstone fynbos. Too frequent fires could reduce seeds banks. Last fire occurred December 2016; controlled burns will be required between 2026 and 2031.

Recommended burning Strategy:

- Patch burns (mosaic burning): Recommended over blanket burns to reduce fire intensity, maintain habitat heterogeneity, and allow wildlife and livestock to move between burned and unburned areas.
- Target areas: Prioritize areas with dense alien growth or moribund vegetation for burning. Burning should occur before seed-set of alien species like Acacia mearnsii or Acacia cyclops.

- Post-burn recovery: Exclude livestock for 1 season post-burn using temporary fencing to allow vegetation recovery. Follow up with manual clearing to prevent alien species resurgence.
- Conduct burns late summer to early autumn (March–April) under mild conditions to reduce fire risk and align with the natural fire season, allowing early winter rains to stimulate regrowth.

Ongoing Management and Safety:

- AIS control: Ongoing clearing of alien invasive species (AIS) must be part of the fire management strategy.
- Fire safety: Designate areas for fire, ban open fires outside these zones, and install fire-proof hedges using indigenous species to reduce fire risk around built environments.
- Emergency measures: Ensure adequate fire-fighting measures, emergency water supply, and visible emergency numbers at all times. Key staff should have access to emergency contact information.
- Training: Provide job-specific fire management training for all individuals responsible for managing fires.

8. Aquatic ecosystem and biodiversity

9.1.1 Ongoing requirements

- Ongoing removal of alien invasive species (AIS) must be implemented within all drainage line areas across the property.
- Buffer Zones: A minimum buffer of 32 meters of intact riverine or thicket vegetation must be rehabilitated using flora species list provided and maintained along all drainage lines. These buffer zones must remain undisturbed and may not be used for any activities, including agriculture, except for:
    - Authorised road crossings
    - The existing dwelling located within 32 meters
    - AIS clearing activities and passive / active regeneration with indigenous vegetation
    - The in-stream dam (OGF2 dam)

9.1.2 Construction within watercourses – road crossing and rehabilitation at Area 4-16

- Rehabilitation: The disturbed area should be rehabilitated to restore thicket, riverine, or wetland vegetation, in accordance with the using flora species list provided in the rehabilitation plan.
- Hydrological Connectivity: A proper hydrological flow path (e.g. culvert or low-water crossing) must be installed at the road crossing. This road is anticipated to be retained long-term due to its role in accessing recommended agricultural areas 4-15 and 4-17.

9.1.3 Construction within watercourses – rehabilitation of gabion road structure and OGF 1 dam

- The existing dam must be rehabilitated as a condition of approval for the new larger dam using measures and accompanying flora species list provided in the rehabilitation plan.

9.1.4 Management of Construction of instream dam

- Construction of the dam must occur during the dry season (i.e. December to January or June to July);
- Working areas must be clearly demarcated and no vehicle access or disturbance must take place outside of demarcated areas;
- Rehabilitate and naturalise areas beyond the development footprint, which have been affected by the construction activities, using indigenous grass species;
- Vehicles must be restricted to travelling only on designated roadways to limit the ecological footprint of the proposed development activities;

- Restrict vehicle access to the river to single points that are clearly demarcated;
- Excavators and all other machinery and vehicles must be checked for oil and fuel leaks daily. No machinery or vehicles with leaks are permitted to work in the river;
- No fuel storage, refuelling, vehicle maintenance or vehicle depots to be allowed within 30 m of the edge of the river;
- Ensure that all stockpiles are well managed and have measures such as berms and hessian sheets implemented to prevent erosion and sedimentation. Stockpiles must be located more than 30 m from the edge of the river;
- Contractors used for the project should have spill kits available to ensure that any fuel or oil spills are cleaned and disposed correctly;
- Adequate sanitary facilities and ablutions must be provided for all personnel throughout the project area. Use of these facilities must be enforced (these facilities must be kept clean so that they are a desired alternative to the surrounding vegetation) and must be routinely serviced; and
- No dumping of construction or waste material is permitted. All construction and waste materials must be removed from the river valley and correctly disposed.

9. Water Management

Water use license application to include:

- Section 21(a): Taking water from a water resource
  Any additional abstraction from the Ruiterbos River must be subject to the formal surrender of existing borehole water use rights on RE/420 and RE/373 to ensure overall compliance with the lawful water allocation.
  Dam – irrigation, domestic, animal use, restaurant use
- Section 21(b): Storing water
  Dam and existing reservoirs on site
- Section 21(c): Impeding or diverting the flow of water in a watercourse.
  for infrastructure near or within mapped wetlands and drainage lines, including dwellings and roads.
- Section 21(i): Altering the bed, banks, course, or characteristics of a watercourse.
  construction within or adjacent to a wetland or drainage line, dwellings, roads, dam, rehabilitation and AIS clearing
- A Risk Assessment Matrix compiled by an SACNASP Professional (aquatic) must accompany the WULA to identify and evaluate the magnitude, likelihood, and consequences of each water use activity and its potential impact on the water resource.
  .

General

- Any leaks noted to be immediately repaired.
- Install rainwater tanks at all roofed structures to assist with catchment of water during high rainfall
- Make use of drip irrigation as far as possible.

9.2 Management of OGF2

9.2.1 Dam Design Requirements

- All irrigation and operational water demands must be clearly quantified to ensure abstraction and meets the water demand for the farm and remains within permissible limits. The catchment MAR (1.24 Mm^3) is sufficient to meet the proposed irrigation demands, provided this is managed efficiently.

- A comprehensive water balance must be developed, integrating inflows (from hydrological modelling), irrigation needs, and environmental flow releases. The dam must not be designed to store volumes exceeding the actual water demand
- Final design of dam to consider ecological water requirements and incorporate release flow infrastructure, either through a pipe-and-valve outlet system or via a bypass mechanism (e.g., weir and pipeline),
- Pumps used to abstract water from the dam must be fitted with calibrated flow meters with the purpose of ensuring that annual lawful water allocations are not exceeded, and abstraction volumes must be submitted to BOCMA bi-annually to ensure lawful water use.

9.2.2 Interim Release flow requirements (or comment form DWS)

Mean Annual Runoff (MAR): 1.24 million m^3/year

Proposed Dam Capacity: 150,000 m^3

Interim Environmental Water Requirement (EWR): ~9.5% of MAR ≈ 118,000 m^3/year

- A formal Reserve Determination has not yet been undertaken. However, based on the hydrological assessment of the dam catchment (MAR estimated at 1.24 million m^3/year) and considering the planned cessation of existing borehole abstractions on RE/420 and RE/373, it is reasonable to apply a precautionary approach and implement an interim EWR.
- A release allocation of approximately 118,000 m^3/year (9.5% of MAR) is proposed to simulate continuous environmental baseflows downstream of the dam. This estimate aligns with standard EWR ratios applied within the K10D catchment for similar river systems.

Dam Operation Requirements

- The dam must be operated to:
    - Maintain continuous baseflow release throughout the year,
    - Provide increased outflows during storm events or peak rainfall, and
    - Allow for adaptive management until a formal EWR is determined.
- A pipe-and-valve outlet system, preferred by the landowner, is recommended to accommodate controlled and adjustable releases. This infrastructure will enable:
    - A year-round trickle flow to maintain ecological connectivity downstream,
    - Temporary flow increases during and after rainfall events to mimic natural runoff patterns.
- This approach reflects the regional rainfall regime (~450 mm/year), with peak rainfall typically occurring during spring (September–November) and autumn (March–May), and dry conditions prevailing from December to February.

9.2.3 Compliance and Monitoring

- All pumps abstracting water from the dam must be equipped with calibrated flow meters to monitor water usage; abstraction volumes must be submitted to BOCMA bi-annually to ensure lawful water use.
- Additional abstraction from the Ruiterbos River must be conditional upon the formal surrender of borehole water use rights on RE/420 and RE/373 to ensure that cumulative abstraction remains lawful.
- Biomonitoring Plan: An aquatic biomonitoring programme, including at minimum SASS and IHI (Index of Habitat Integrity) assessments, must be implemented. This plan should monitor whether the dam's environmental flow releases are maintaining downstream aquatic ecosystem integrity at the Recommended Ecological Category (REC). The specific frequency, timing, and monitoring indicators must be informed by the EWR determination.

10. Soil Management

10.1 Restrictions

- Recommended agricultural areas are provided in Table 2, Table 3 and Table 1
- No planting on slopes steeper than 1:5 (20%) to prevent erosion
- Mulch bare areas – chip AIS material (without seed) for mulch material and place in windrows as per AIS management plan
- Minimize soil disturbance and compaction, such as using hand tools instead of heavy machinery. Use specialized equipment designed to reduce environmental footprint, like lightweight mowers or trimmers.

10.2 Soil Management

- Stabilize disturbed soils promptly with native vegetation or erosion control materials as per rehabilitation plan.
- Revegetate slopes where required using carpobrotus and other soil binding thicket plants as per rehabilitation plan
- Liming will be required, particularly on upper slopes and ridge crests, based on soil pH levels and crop requirements (especially for lucerne and fruit trees).
- Deep ripping to depths of at least 60 cm should be undertaken only where compacted soils are present, and not in sensitive areas such as fynbos zones or slopes prone to erosion.
- Ridging to a height of 40 cm is recommended on most sites for the establishment of citrus, avocado, or olive trees.
- Ridges should follow natural contours to reduce the risk of erosion and to assist with water retention.
- Apply organic mulch to all open areas between and around crops to:
    - Reduce water evaporation
    - Suppress weed growth
    - Improve soil structure and crop yields
- Cleared Alien Invasive Species (AIS) biomass (seed-free) may be used as mulch
- Maintain permanent organic ground cover on worked areas to prevent wind and water erosion and reduce dust emissions.
- Exposed areas between fruit trees should be permanently mulched and/or interplanted with low-growing, water-wise indigenous ground covers such as:
    - *Helichrysum cymosum*
    - *Pelargonium capitatum*
    - *Carpobrotus edulis*
- Where appropriate, interplant perennial indigenous crops for sustainable harvesting, such as:
    - *Artemisia afra (African Wormwood)*
    - *Origanum vulgare (Wild/Berg Oregano)*
    - *Salvia africana-lutea (Wild Sage)*
- Land clearing activities should be scheduled to avoid periods of heavy rainfall to minimize erosion risk.
- Avoid working with wet soils, as this will damage soil structure and compromise productivity.
- No heavy machinery is permitted within these areas.
- Access is limited to existing tracks or clearly demarcated low-impact routes; No off-track driving is allowed.

Area 4–18:

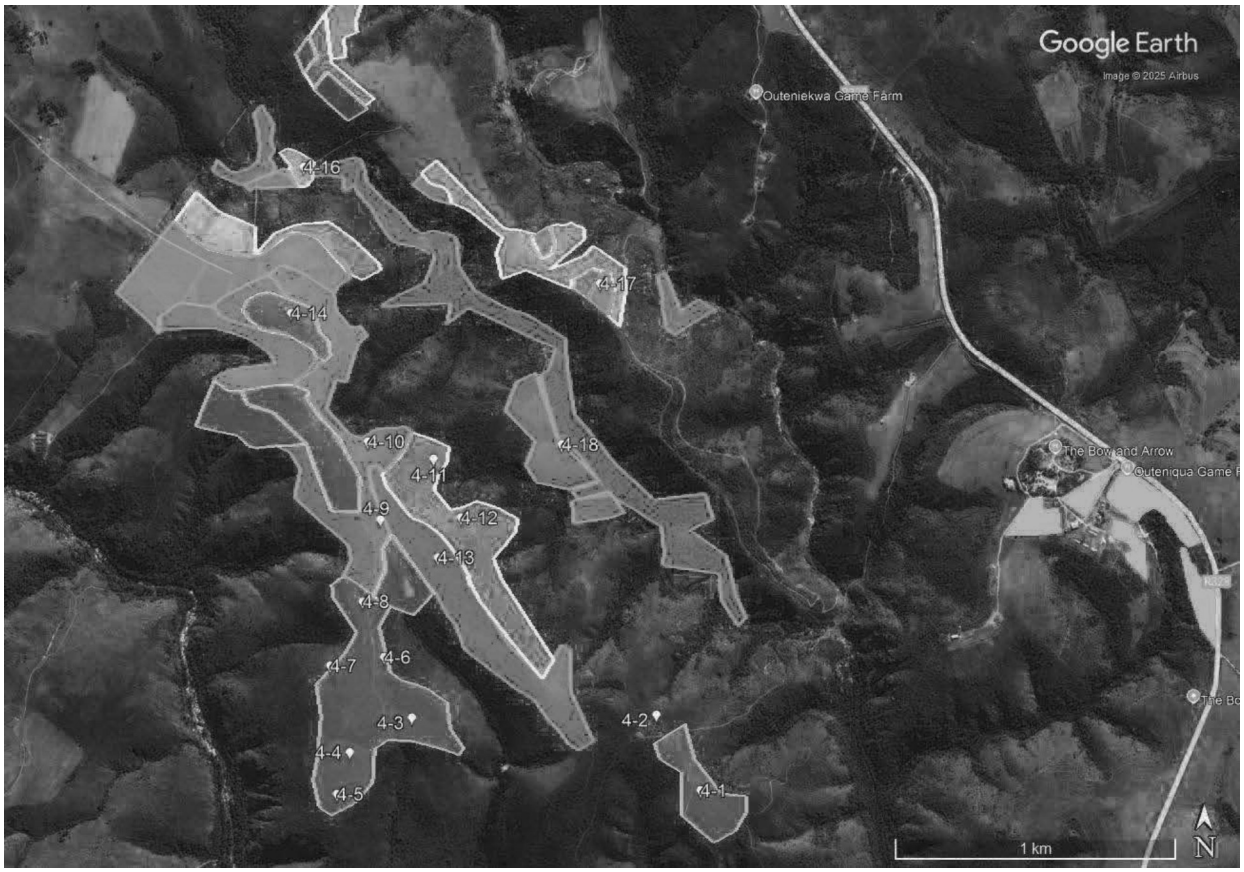
- Rehabilitation of AIS-cleared areas along drainage lines in accordance with alien invasive management plan and rehabilitation plan. Maintain a 10–15 m buffer from the drainage line, to be rehabilitated with locally indigenous riverine vegetation.

- No fertilisers, pesticide, herbicides, fencing, or irrigation is permitted in this area (unless for target clearing of AIS)
- *Agathosma recurvifolia* (Least concern) and *Cyclopia subternata* (near threatened) are included in the list of plants to use for rehabilitation. Sustainable harvesting of these could take place once the area is rehabilitated with the plants included in the rehabilitation plan. Access to this area to be primarily by foot, with wheelbarrows or hand-pulled carts for harvest transport. sustainably harvested (not uprooted), allowing natural regeneration to continue supporting erosion control, habitat provision, and water quality. Sustainable harvesting includes. No commercial varieties of *Agathosma recurvifolia* and *Cyclopia subternata* permitted due to interference with surrounding species. Permits will be required for *Cyclopia subternata*

10.3 Fertilizers and pesticides

- Do not apply any additional inputs outside of designated agricultural areas
- Potassium based (not sodium based) fertilizers recommended to prevent saline runoff form farming areas.
- Avoid over-application of fertilizers and apply the correct amount
- Rotate annual crops from different botanical families to reduce the risk of soil-borne diseases and pest build-up; example - Lucerne - Maize - Lucerne - Maize: Rotate between these two crops to allow for nitrogen fixation by lucerne to support maize growth. Lucerne will improve soil health, especially in terms of nitrogen content, benefiting maize crops.
- Avoid overuse of synthetic fertilizers. After growing a leguminous crop like lucerne, the soil will have increased nitrogen, reducing the need for nitrogen-based fertilizers in subsequent crops.
- Between crop rotations, consider using organic amendments such as compost or cover crops to build soil organic matter, improve microbial activity, and reduce the need for synthetic fertilizers and herbicides
- Use minimum tillage or no-till practices between crop rotations to protect soil structure, prevent erosion, and promote water infiltration. This also helps maintain beneficial soil organism
- Apply organic mulch after crop harvests to preserve soil moisture, prevent erosion, and reduce weed growth between rotations.
- Apply pesticides when absolutely necessary and follow application guidelines to minimize environmental impact.
- Use Integrated Pest Management techniques where practical, such as monitoring pest populations, introducing beneficial insects, and applying organic or low-toxicity treatments.
- Apply fertilizers and pesticides with the utmost caution.
- Investigate use of alternative fertilizers - manure, cakes of plant origin, vermicompost, microbial bio-fertilizers
- Keep all fertilizers and pesticides well labelled and locked away in a secure store room.
- If pesticides are to be used:
    - Make use of target-specific pesticides only.
    - Avoid persistent pesticides, rather using biodegradable types.
    - Understand how each pesticide works, and when its effects should become evident.
    - Ensure selection of the correct pesticide, and best method of application and dose.
    - Avoid indiscriminate aerial spraying at all times, and aerial spraying on windy days.
    - No spraying of pesticides if bees are present
    - The use of pesticides are regulated by the Department of Agriculture, Fisheries and Forestry. Ensure compliance with applicable legislation: Legislation applicable to pesticides and fertilizers includes:
- Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947)
- Agricultural Pest Act, 1983 (Act No 36 of 1983)
- Section 24 of the Constitution of the Republic of South Africa, (Act No. 108 of 1996)
- Medicines and Related Substances Control Act, 1965 (Act 101 of 1965)

- Hazardous Substances Act, 1973 (Act 15 of 1973)
- The Foodstuffs, Cosmetics and Disinfectants Act (FCDA), 1972 (Act No. 54 of 1972)
- The Occupational Health and Safety Act (OHSA), 1993 (Act No. 85 of 1993)
- Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983)
    - Ensure correct training in proper pesticide use is provided to workers.
    - Ensure the correct Personal Protective Equipment (PPE) is provided and used during pesticide applications.
    - Paraquat is not to be used due to its extreme toxicity to animals and humans.



- **Figure 1: Generalised soil potential of the study area (yellow: Low; medium: Orange; medium-high / high: green); agricultural area on area 5-1,2 on ptn 420 indicated in east**

Table 1: Summary of soil potential areas (areas 1 to 17) on ptn 373

Area	Size estimate	Soil unit	Limitations	Generalised Soil Potential	Dryland	Irrigated					Land use	Recommendation
					Pastures	Pastures	Avocado	Citrus	Maize	Olives		
1	4,98ha	Nk1	Gravel; restricted depth; low Water holding capacity	Medium	Medium						Past use /	Only dryland in 0.71 ha if required / Future use – not feasible
2	1.55 ha	Be 1	Stone; saprolite	High	Medium High	High	High	High	High	High	Past use	Only dryland grazing
3	2.01 ha	Hh1	Gravel; restricted depth; low Water holding capacity	Medium	ML	M	-	-	-	-	In use	Preferably not be used; if used, only dryland grazing
4	2.87ha	Hh1	Gravel; restricted depth; low Water holding capacity	Medium	ML	M	-	-	-	-	Past use	Only dryland grazing
5	0.5 ha	Hh1	Gravel; restricted depth; low Water holding capacity1	Medium	ML	M	-	-	-	-	Future use – not feasible Intact fynbos	Retain as fynbos; removal of dense wattles as per AIS management plan
6	6.79 ha	Hh1	Gravel; restricted depth; low Water holding capacity	Medium	ML	M	-	-	-	-	Past use Future use – not feasible	Retain as fynbos; removal of dense wattles as per AIS management plan
7	0.34 ha	Hh1	Gravel; restricted depth; low Water holding capacity	Medium	ML	M	-	-	-	-	Future use – not feasible	Retain as fynbos; removal alien trees as per AIS management plan
8	3.38 ha	Hh1	Gravel; restricted depth; low Water holding capacity	Medium	ML	M	-	-	-	-	Past use	Only dryland; removal alien trees in field and adjacent area as per AIS management plan
		Vf 1	Gravel; restricted depth; low Water holding capacity	medium high	Medium High	High	-	Medium	Medium	Medium		
9	3.56 ha	Vf 1	Gravel; restricted depth; low Water holding capacity	medium high	Medium High	High		Medium	Medium	Medium	In use	No further expansion this area. Manage agricultural area as per mitigation measures.
10	2.5ha	Vf 1									In use	Manage agricultural area as per mitigation measures.

Area	Size estimate	Soil unit	Limitations	Generalised Soil Potential	Dryland	Irrigated					Land use	Recommendation
					Pastures	Pastures	Avocado	Citrus	Maize	Olives		
11	2.48 ha	GS1	Stone and rock; restricted depth; low WHC	Low	Medium Low						Past use - invaded	Dryland grazing Manage as per AIS management plan
12	3.14 ha										Past use - invaded	Not suitable – Manage as per AIS management plan
13	2.85ha										Future - likely feasible (2.85)	Low ecological importance however soil potential is indicated as low for the corresponding area. Possible dryland
13	9.2ha	Be1	Stone;saprolite	High	Medium High	High	High	High	High	High	Remaining area 13 – not feasible	High ecological importance
14	3.6 ha	GK2	This section on Area 4-14 is where supporting infrastrucutre and dwellings are in place. Area is recommended for supporting strucutrures, storage faiclities and compost areas.	High and medium High (in use) Medium potential (past use)	M	M	-	-	M	-	In use Past use	Maintain as irrigated agricultural area; use past use area for additional irrigated area and required dwellings, storage.
14	30 ha	GK1	Gravel; sub-optimal WHC	MH	M	MH	-	-	MH	-		Existing agricultural area suitable for combination of maize, olives, avocados and citrus.
		Be2	Gravel & stone;	MH	M	H	M	M	H	MH		
		Be3	Gravel; dense lower subsoil	H	M	H	MH	H	H	H		
		Vf1	Restricted depth; low WHC	MH	MH	H	-	M	M	M		
	6.6ha	Gs1	Stone and rock; restricted depth; low WHC	L	**L**	ML	-	-	-	-		No agricultural expansion in this area
		GS2		L	L	-	-	-	-	L		
15	0.33ha	HH1	Gravel; restricted depth; low WHC	Medium	ML	M	-	-	-	-	Future use – not suitable	Retain as fynbos No agricultural expansion permitted.
16	0.89ha	Kd1	Poor drainage	Medium	M	MH	-	-	-	-	In use	Area surrounding dam should be mulched and planted.
17	30.73 ha	Be2	Gravel & stone;	Medium high	M	H	M	M	H	MH	Past use	Recommended for irrigated mixed cropped farming.
		CV1	Gravel; restricted depth	medium	MH	M	-	-	M	-		
		Tu1	Variable soils; drainage areas	High	H	H	H	H	H	H		

Area	Size estimate	Soil unit	Limitations	Generalised Soil Potential	Dryland	Irrigated					Land use	Recommendation
					Pastures	Pastures	Avocado	Citrus	Maize	Olives		
		Tu2	Restricted depth	Medium	M	M	-	-	-	-		Manage as per agricultural measures.
		Se1	Dense structured clay subsoil; soil wetness	Medium low	M	M	-	-	-	-		
		Gs1	Stone and rock; restricted depth, low WHC	Low	**L**	ML	-	-	-	-		
		GS2		Low	**L**	L	-	-	-	-		
18	5ha	Tb1	Steep slopes; variable soils	Medium high	MH	H	M-H	M	-	MH	Fynbos with high AIS	Steep areas not recommended (1:5 gradient or more)
	15.5ha	TU1	Variable soils; drainage areas	High	H	H	H	H	H	H	Thicket / riverine with high AIS	Area runs along drainage line; drainage lines are invaded; low impact, water wise indigenous crops (e.g buchu and honey bush), with 10-15 m buffer areas, could be considered on approximately 10 ha.

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11. Land Use Recommendations

- Avoid additional clearing activities that will result in fragmentation of habitats. Patch connectivity must be maintained and maximised to allow for movement of pollinators
- Low impact agricultural activities such as bee-keeping / honey production and organic poultry farming can be integrated into crop areas. Bee-keeping supports the pollination of crops such as avocados, citrus, and other fruit trees, improving yields and supporting ecosystem health. - Care should be taken to ensure that beehives / chickens are placed in areas that do not disturb sensitive ecosystems or wildlife habitats. Consider chicken tractors.
- Consider olive trees due to lower water requirements
- Consider sustainable harvesting of *Agathosma recurvifolia* and *Cyclopia subternata* once AIS clearing combined with rehabilitation is underway in accordance with permit requirements and sustainable harvesting guidelines.
- Owl boxes are recommended for natural rodent control, supporting ecological balance.

11.1 Energy management

The following measures are recommended to be incorporated:

- Use of solar-powered pumps for irrigation and domestic water supply.
- Energy-efficient lighting and appliances in all new dwellings and hospitality facilities.
- Limited night lighting to reduce disturbance to wildlife and minimize energy demand.

Table 2: overview of land use areas on portion 373

Area	Extent (ha)	Recommendation
1, 2, 3, 4, 8, 11, 13 (2.8ha)	11.4ha	dryland grazing
14, 9, 10	36ha	irrigated farming
17	30 ha	mixed dryland / irrigated as per soil condition
5,6,7,11,12,13 (9.2ha), 15, 16	21.19 ha	retain / rehabilitate as fynbos / riverine as required
18	11.6 ha	Potential sustainable harvesting– identified as having high agricultural potential; the area is along the non-perennial drainage line is infested with wattle species. Consider sustainable harvesting of *Agathosma recurvifolia* and *Cyclopia subternata* once AIS clearing combined with rehabilitation is underway in accordance with permit requirements and sustainable harvesting guidelines. No formal crop areas or cultivars recommended.
Total natural remaining area (proposed / preferred)	789 – (89 ha)	700 ha
Total natural remaining area – past use	789 – (99 ha)	690 ha

Table 3: overview of land use areas on portion 420

Area	Extent (ha)	Recommendation
Area 1 / 5.5+6	2 ha	Additional dwellings and roads Past use (6ha);

Area 2	3 ha	5 dwellings (Past use – none)
5 - 1, 2	10 ha	Mixed irrigated / dryland grazing (Past use – 30 ha)
	5.5 ha	restaurant, old quarry, structures
	1 ha	Elephant enclosure
5-3	-	Past use - 6.5 ha
5.-4	10.4 ha	Predator enclosure (Past use – 10.4 ha)
Area 7	1 ha	Past use (26 ha); structures (current) 1 ha
Area 8	-	Past use (11 ha)
Total natural remaining (proposed / preferred)	489 ha – (33)	456 ha
Total natural remaining area – past use	489 ha – (78.9)	410 ha

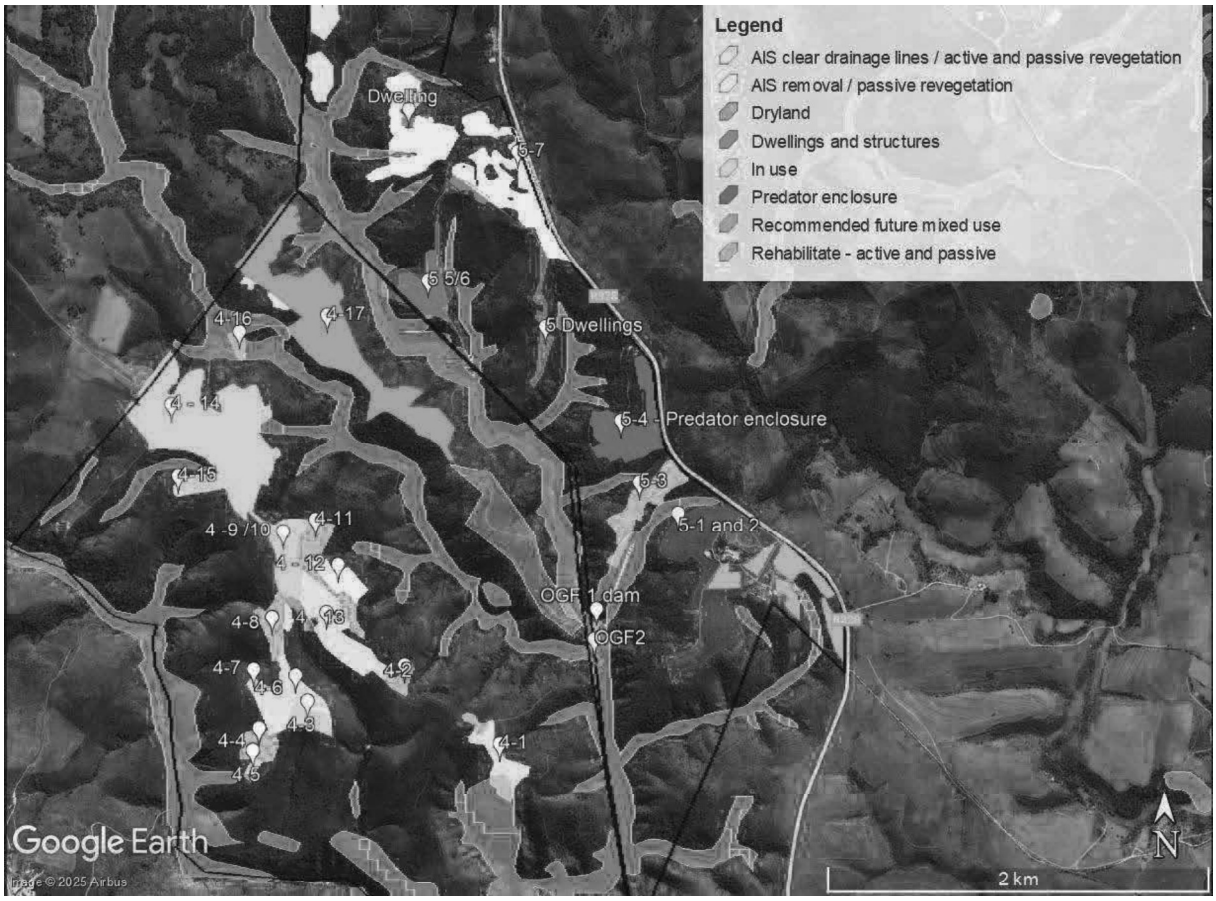

Figure 2: Recommended land uses

12. Management of Local opportunities

- Encourage employment of local persons
- Use local suppliers for required materials and services (e.g. transport, recycling, solar requirements)
- Consider incorporation of sustainable agricultural products into tourism
- Consider incorporation of agricultural produce into restaurant

13. Management and Training of staff

- Ensure all operational managers have read the EMPr and communicate measures to the staff through training
- Work specific training must be provided to those dealing directly with AIS removal and revegetation of areas. This will include familiarising themselves with all alien invasives identified on the property as well as all the plants listed in the rehabilitation plan.
- Work specific management must be provided to those working in game farm area with regards to natural SCC deemed likely to occur on the property as well as identification of snares etc.

14. Waste management

Waste Stream Identification

- All waste streams must be identified and documented (e.g., organic waste, AIS biomass, recyclables, e-waste, hazardous waste).
- Note that Argentine ants (Linepithema humile) are known to be invasive in fynbos ecosystems and can disrupt balance by outcompeting native ant species. Careful waste management is required to prevent the introduction and spread of Argentine ants

AIS material

- Cleared AIS material (no seed) not chipped on site, must be stockpiled and processed as mulch at designated areas: Area 4-15, 4-17, 5-1.

Waste separation

- Provide facilities for the separation and temporary storage of recyclable waste items:
- plastic, glass, metal, paper
- e-waste (batteries, small electronics
- food scraps
- Waste facilities must be equipped with sealable lids and labelled
- These facilities will likely be required at the operational farm area on ptn 373 and at the restaurant area on ptn 420
- Food waste should not be mixed with recyclables to avoid contamination of the waste streams
- Train staff in waste sorting and ensure adequate signage and infrastructure.
- Identify and partner with a registered recycling facility for regular off-site removal.
- Any waste that cannot be reused or recycled must be disposed of at a licensed, registered waste disposal site.

General

- No dumping or burial of waste to take place

- General Waste receptacles should be emptied on a regular basis.
- No littering; ensure good housekeeping of the site (i.e. no litter) at all times.
- Service machines and vehicles regularly to prevent unnecessary fumes and leaks.

Food scraps

Recommended management system

- Food scraps is recommended to be managed using a combination of bokashi (microorganisms) and red wriggler composting worms.
- The first step is a 30-day fermentation in sealed container under anaerobic conditions. This takes place in sealed containers and will prevent attraction to Argentine ants.
- The second step is further 30-day process in aerobic conditions using a worm farm. The worm bin must be covered with lid or cover / shade cloth. The worm farm must be equipped with drainage and catchment of the worm tea (e.g an old bath / container can be used)
- All food scraps can be thrown into fermentation container; once full it is sealed for 30 days. The fermented waste is then buried in the worm farm. The composting process will take a further 30 days and can then be used.
- Each dwelling can be provided with 2x25liter bokashi digesters (one for active use; one for 30-day fermentation)
- Restaurant and agricultural area can be provided with 2x250 liter digesters (one for active use; one for 30 day fermentation)
- Dwellings worm farm – recommended 1 kg initial input of Eisenia foetida, thereafter the red wrigglers will sustain themselves as per fermented waste input
- Restaurant and agricultural area – recommended 10 kg, thereafter the red wrigglers will sustain themselves as per fermented waste input

Note:

Bokashi tea is the liquid that drains from the sealed fermentation process in the bokashi container, rich in microorganisms.

Worm tea is the liquid produced by the worms during the composting process, which is rich in nutrients.

- The fermented tea, at a 1: 10 ratio can be added to all drains and toilets on a monthly basis to assist with overall sewage management.
- The worm tea can be used as a natural fertilizer
- The compost can be used in soft landscaping at dwellings / agricultural areas
- Required Bokashi and digesters and red wrigglers and are available from local suppliers.

Hazardous Waste & Fuel Management

- All generators must be fitted with drip trays to catch fuel or oil leaks.
- Spill kits must be accessible near all machinery and generator areas.
- A designated hazardous waste bin must be provided for the safe containment of any contaminated materials (e.g., fuel-soaked rags, used oil).

Concrete, cement, plastering, and painting:

- Mixing areas be clearly defined on the site and must be surrounded by an impermeable material (i.e. create a temporary coffer dam with sandbags and thick plastic sheeting) to prevent any runoff and absorption into the surrounding soils.

- The designated mixing areas should be limited to areas that will become future hard surfaces on the site. No concrete and cement mixing is allowed in areas outside of the proposed hardened surfaces of the camping block.
- Cleaning of cement, plastering & paint equipment must be done into a designated, bunded, & lined slurry sump or container to avoid contaminating the environment.

Sewage

- Ensure tanks are properly sealed and maintained to prevent leakage or groundwater contamination.
- Conservancy tanks are preferred over septic tanks and soakaways as these can be pumped out and desludged (every 2–5 years depending on use).
- If conservancy tanks not feasible, consider adding microbes (example bokashi tea diluted 1 part to 10 parts water) to sewage systems to accelerate the breakdown process.
- Use water-saving fixtures in buildings to reduce load on the system.
- Consider reuse of grey water (e.g. sinks, showers, laundry water) where feasible (e.g. for irrigation).
- Consider composting toilets or biogas digesters. Local suppliers (e.g.Biogas SA) provide affordable solutions for domestic and community-based biogas systems.
- Avoid future installations on steep slopes or highly permeable soils near watercourses; ; tanks should be located downslope and outside of any 1:100 floodline, at the maximum feasible distance from wetlands and watercourse.
- Include relevant water uses in the water use license application for dwellings and accompanying sewage treatment (within 100 m of watercourse / 500 m wetland) - Section 21 c and i

15. **Rehabilitation:**

15.1 Restrictions

- No kikuyu grass may be planted. This is a listed and recognised invasive species.
- Protected trees may not be impacted on by rehabilitation activities

15.2 **Structures and dwellings:**

- Dwelling disturbance and invaded areas between the dwellings should be rehabilitated and ongoing alien clearing effort should be prioritised in these areas.
- Initial graminoid ground covers that could be considered include members of the families Restionaceae, Cyperaceae, and Poaceae.
- Examples of species that could be planted includes *Aristida diffusa, Aristida junciformis, Cynodon dactylon, Ehrharta erecta, Elegia tectorum, Eragrostis capensis, Eragrostis curvula, Ficinia truncata (near the watercourse), Ischyrolepis subverticillata, Pentameris macrantha, Pentameris pallida, Restio festuciformis, Restio quadratus, Schoenoxiphium lanceum (*riparian zone*), Stipa dregeana, Tetraria bromoides, Thamnochortus insignis,* and, *Themeda triandra.*

15.3**Roads and river crossings**

- Active restoration will need to take place at the rehabilitated road and associated river crossing in order to minimise further erosion and sediment transport. Introduce hardy, fast-growing native ground cover plants that are well-adapted to local conditions.
  Grasses that can be considered include *Themeda triandra, Eragrostis capensis, Eragrostis curvula,* and *Stenotaphrum secundatum*. *Osteospermum moniliferum* (Bietou), *Diospyros dichrophylla, Searsia glauca,*

Pterocelastrus tricuspidatus (Candlewood), *Grewia occidentalis* (Crossberry), *Carissa bispinosa,* and *Euclea racemosa* (Gwarrie) are also appropriate for this illegal road section.

- Passive regeneration together with active planting of the riparian zone must be encouraged. Passive regeneration allows indigenous species to naturally re-seed and re-establish along the banks. This process must be encouraged wherever possible and vehicle access must be restricted to use of the road only so as to avoid disturbance to new seedlings. Recommended plant species for active planting provided in Table 4

15.4 OGF1 dam

Removal of Sediment Previously Excavated from the Riverbed

- An excavator may be used to remove sediment from river;
- The sediment must be removed from the watercourse as soon as possible and stockpiled well outside of the floodline for use in rehabilitation of the river channel once the dam wall has been removed. The stockpile must be covered and protected from rainfall and erosion to prevent loss of material;
- Care must be taken not to widen or deepen the channel during the removal of the dumped material. The depth of the bed and width of the channel must be continuous with the channel further downstream.

OGF1 dam - Removal of Dam Wall

- An excavator may be used to remove the dam wall;
- Dam removal must take place during the dry season (generally June to July or December to January) so as to minimise the potential of flooding whilst working in the watercourse. Weather forecasts must be consulted with aim of the ensuring a minimum 3-day window of low (< 10 %) percent likelihood of rainfall.
- The water level must be drawn down as much as possible prior to removal of the dam wall. A single opening must be made in the wall to allow water to drain out in a controlled manner.
- Once the water level has receded, the gabion wall can be removed using common excavation methods and earth-moving equipment. The wall must be removed in a systematic fashion, with the excavator operating from the surface of the existing road crossing, moving backwards along the road as material is removed from the watercourse.
- All gabion and road materials, including rock, wire baskets and concrete/cement structures MUST be removed from the site and disposed of at an appropriate waste disposal facility. No road materials or gabion baskets may be dumped in the watercourse or stockpiled adjacent to the watercourse.
- Removal of the dam wall must be overseen by and appropriately qualified Environmental Control Officer (ECO) or an aquatic ecologist.

OGF1 dam - Replacement and Stabilisation of Soil

- The channel must be reshaped such that the embankment slopes gently towards the channel and is consistent with the natural channel of the river.
- Stockpiled sediment can be used to reshape the banks
- Precautions
- Construction vehicle parking and equipment stores must be located at least 100 m from the demarcated area to prevent fuel and material spills from entering the watercourse;
- Access by vehicles must be in and out on one road only to reduce the area of disturbance;
- The wetland areas upstream of the dam must be demarcated as 'No-go Areas' for people and vehicles.
- The banks must be reshaped and sloped to the natural site contours, avoiding the creation of ditches and cuts which channel water flow and cause erosion. The shape/contours/dimensions of the banks must be continuous with the undisturbed section of wetland upstream of the dam.
- Reshaping of the channel must take place during the dry season (generally June to July or December to January) so as to minimise the potential of flooding whilst working in the watercourse. Weather forecasts

must be consulted with aim of the ensuring a minimum 3-day window of low (< 10 %) percent likelihood of rainfall

- The final reshaped channel must be independently assessed by an ECO or aquatic ecologist and signed off as complete.

OGF1 dam - Revegetation

- Seed the slopes and stream bed with an indigenous fynbos grass mix and cover with a light mulch;
- Nail in overlapping soil saver matting to protect the soil (see Appendix 5);
- Revegetated slopes must be actively monitored to ensure a dense cover of > 80% of grass. Gaps should be actively re-seeded;
- A combination of active and passive revegetation must take place in the 10 m buffer zone: Active = planting recommended indigenous species, and Passive = not disturbing indigenous plants that naturally germinate (See Table 4 for suitable plant species);
- Alien vegetation must be actively removed before it becomes established when it can either be hand-pulled or removed with a tree popper. NO heavy machinery can be used for the purpose of alien removal;
- Eroded areas of the steep banks must be refilled with topsoil, reseeded with grass mix, covered with a light mulch and protected with soil saver mats; and

15.5 Area 4-16 and drainage lines

- Ongoing removal of alien invasive species (AIS) must be implemented within all drainage line areas across the property.
- Area 4-16 (0.89ha) is recommended to be rehabilitated with thicket / riverine/ wetland vegetation. Modify dammed area to allow for drainage.
- Hydrological Connectivity: A proper hydrological flow path (e.g. culvert or low water crossing) must be installed at the road crossing. This road is anticipated to be retained long-term due to its role in accessing recommended agricultural areas 4-15 and 4-17.
- Alien Invasive Species Management:
- Buffer Zones: A minimum buffer of 10 meters of indigenous vegetation (Table 4) must be maintained through active (planting of vegetation) and passive (existing indigenous vegetation left intact) along all drainage lines. These buffer zones must remain undisturbed and may not be used for any activities, including agriculture, except for:
    - Authorised road crossings
    - The existing dwelling located within 32 meters
    - AIS clearing activities
    - The in-stream dam
    - Sustainable harvesting (5-year plan)

Table 4: Flora species identified for active rehabilitation of disturbed / AIS cleared areas

Species Name	Common Name	Planting density guide / 75 m2
Trees		
Ekebergia capensis	Cape Ash	1
Halleria lucida	Tree fuchsia	3
Osteospermum moniliferum	Bitou	3
Searsia undulata	Kuni-bush	1
Protea neriifolia	Pink ice	1
Buddleja salviifolia	Sagewood	1
Tarchonanthus littoralis	Coastal camphorbush	2
Virgilia oroboides	Keurboom	1
Shrubs		Per 75m2
Agathosma recurvifolia	Boegoe	2

Cyclopia subternata	Vleitee	5
Helichrysum petiolare	Licorice plant	5
Phylica ericoides	Hardeblaar	2
Psoralea axillaris	Violet-flash fountainbush	1
Watsonia angusta	Narrow watsonia	2
Watsonia fourcadei	Forked watsonia	2
Watsonia pillansii	Orange watsonia	2
Selago corymbosa	Stiff bitterbush	2
Otholobium acuminatum	Longsepal dottypea	1
Pelargonium cordifolium	Heartleaf storksbill	3
Grass		Per m2
Themeda triandra	Red grass	2
Eragrostis capensis	Heart-seed love grass	2
Eragrostis curvula	Weeping love grass	2
Pennisetum macrourum	Riverbed grass	2

10. Monitoring Plan

Monitoring at rehabilitated OGF1 dam site

Monitoring should also take place by the land-owner following heavy rainfall to identify and proactively address erosion before it can progress too severely;

Monitoring of the site is recommended to ensure that rehabilitation efforts are successful and that problematic areas are attended to effectively and pro-actively.

Revegetation of the buffer and previously excavated area must be monitored 6-monthly by an ECO or Aquatic Ecologist until such time that revegetation of the banks is considered satisfactory;

Roads and crossings

- Regular monitoring of tracks must be undertaken to assess signs of degradation.

Revegetation

- Ensure there is adequate vegetative cover to prevent erosion in riparian buffer zones, especially during months when higher rainfall is expected;
- Where temporary vegetation has been planted, follow up to determine whether indigenous vegetation is establishing, and begin active revegetation with indigenous plants if necessary. This should be done following one growing season; and
- Fixed point photography of sites where revegetation has been implemented should be used to track ground cover.

Alien clearing

- In order to maintain the integrity of the channel and riparian habitat it is important that alien invasive plant species are not allowed to re-establish along the channel:
- Routine inspection of the channel banks must take place (every six months) to do follow-up control of the establishment of alien invasive plant species. Frequent inspection should allow alien plants species to be removed by hand pulling; and
- In the event that hand-pulling is not possible, the cut and stump method is recommended.

River Channel

- Subsequent to the reinstatement of the channel, frequent spot checks should be carried out after rainfall events to ensure that the stability of the channel bed and bank is such that erosion is prevented;
- Regular maintenance such as removal of debris in the channel should be carried out to ensure there is no flow blockage or constriction which could cause erosion or washout. Debris removal should be carried out by hand to prevent destabilization of the channel; and
- Any bank sections which have become exposed and appear vulnerable to erosion should be immediately protected in an appropriate manner so as to prevent or arrest the erosive process before further damage to the channel can occur.
- Long-term monitoring plan for the kikuyu grass at the jeep track along the Ruiterbos River to ensure that it doesn't invade into the Ruiterbos River drainage line.

Flow Monitoring:

- Pumps used to abstract water from the dam must be fitted with calibrated flow meters with the purpose of ensuring that annual lawful water allocations are not exceeded, and abstraction volumes must be submitted to BOCMA bi-annually to ensure lawful water use.
- Biomonitoring Plan: An aquatic biomonitoring programme, including at minimum SASS and IHI (Index of Habitat Integrity) assessments, must be implemented. This plan should monitor whether the dam's environmental flow releases are maintaining downstream aquatic ecosystem integrity at the Recommended Ecological Category (REC). The specific frequency, timing, and monitoring indicators must be informed by the EWR determination.

AIS and rehabilitation

- Annual audit recommended to determine level of rehabilitation, extent of AIS and population levels of *Agathosma recurvifolia* and *Cyclopia subternata* to inform sustainable harvesting.

11. EMP Targets

The following is a summary checklist that can be used to ensure compliance to mitigation measures for planning and construction phase:

Targets:

- ✓ EM file in place and consist of EA, EMPr, WULA, soil permit, required Cape Nature permits, and protected trees permits
- ✓ Detailed dam design
- ✓ Required construction method statements in place
- ✓ Search and rescue carried out as required
- ✓ Waste management measures in place
- ✓ Site control officer for daily inspections
- ✓ ECO for monthly audits
- ✓ Specialist input as required
- ✓ Necessary training provided as per scope of work and records kept i.e., toolbox talks
- ✓ No disturbance of indigenous plants outside development footprint
- ✓ No AIS in construction footprint
- ✓ No disturbance to heritage artefacts
- ✓ No disturbance to fauna

Aspect: Operational Activities

- ✓ EM file in place and consist of EA, EMPr, WULA, soil permit, required Cape Nature permits and protected trees permits
- ✓ AIS clearing carried out and indigenous revegetation carried out; annual audit
- ✓ Rehabilitation implemented as per EMPr; monthly audits (OGF2)
- ✓ Game management plan in place in line with EMPr
- ✓ Fire management plan in place in line with EMPr - Fire prevention and response measures in place / fireproof hedge / firebreak in place as required / controlled burns
- ✓ Operations and monitoring of dam in line with DWS requirements
- ✓ No feeding of wildlife
- ✓ Rainwater tanks
- ✓ Solar Panels
- ✓ Effective Waste management measures in place
- ✓ No additional paths / tracks / roads created

Project Apects to be completed by construction team / maintenance team

Activity:	**Description of activity (i.e. AIS clearing, construction of road, maintenance activity)**			
Responsible person:				
Aspect	**Nature / Description**	**Required**		**Notes**
		✓	✘	
Scope of work	Description of scope of work and accompanying method statement / s	✓		
Site office	Required? Location if required?			
Designs / Plans completed	As required for scope of work			
Environmental Training	Environmental training required (i.e. excavations – archaeology; ongoing – litter; AIS)			
Health and safety	As required – HS File, first aid etc.			
Workforce	Number of workers required?			
	Required environmental management training (i.e. waste, soil management etc)			
	Community engaged with to source local labour			
Transport and traffic	Transport required for site workers?			
	Access and parking requirements			
Site clearing	Area to be cleared			
	Permits on hand; Plants removed and transplanted elsewhere in resort			
Vegetation management	No disturbance to vegetation outside footprint	✓		
	Remove alien invasive from footprint as required	✓		
	Pegs / screening material for designating footprint			
Topsoil management	Top 300 mm soil with indigenous vegetation intact			
	Stockpile separately			
	Compost separately as mulch elsewhere in landscaping / public open space area			
Earthworks and subsoil management, erosion control	Area and depth to be excavated			
	Volume of material to be excavated per component			
	Duration of earthworks component			
	Where will excavated material be stored on site; subsoils covered; Rocks for landscaping; excess for landfill;			
	Shade cloths / water cart – dust control			
	Nature of required materials and equipment			

Activity:	Description of activity (i.e. AIS clearing, construction of road, maintenance activity)			
Responsible person:				
Aspect	Nature / Description	Required		Notes
		✓	✘	
Building material and equipment	Storage requirements / laydown areas for materials / equipment			
	Hazardous materials / substances – sealed containers, bunded area, non-permeable flooring, secure, equipped with roof.			
Waste management	Ablution facilities – Required? Number? Service Provider? Record of service to be kept	✓		
	General waste bins			
	Drip trays, cement mixing trays, plastic liners,			
	Spill kits, hazardous waste bins			
	Skip			
	Service providers			
	Construction rubble – designated area / skip as required			
	General waste – General waste bins with lids and labelled / storage area			
	Hazardous waste – drip trays / spill kits / storage area			
Drinking water and lunch area	Quantity required? Lunch area provided? Source of drinking water?			
Existing structures	Location of existing structures / infrastructures that may be in construction footprint			
Working hours	Working hours – no Sundays, no public holidays, no night time.			

12. COMPLIANCE WITH THE EMPr

6.1 Monitoring and Compliance

The monitoring and compliance of the development should take place as follows:

- The ECO has the authority to instruct the Applicant to cease a particular operation causing or liable to cause significant environmental damage, and issue fines or penalties for non-compliance of the Environmental Management Programme/ EMPr.
- During construction phase an Environmental Control Officer (ECO) must audit the site and compile an audit report on a monthly basis until rehabilitation is successful.
- During operational phase, the site must be audited annually to determine level of AIS and rehabilitation
- The holder of the environmental authorisation (the Applicant) is responsible to ensure that an environmental audit report is submitted to the Department of Environmental Affairs and Development Planning (DEA&DP) as per the timeframes stipulated in the Environmental Authorisation (EA).

6.2 Auditing Process

The terms of reference for the audits must comprise the following:

- Develop a checklist against which the criteria can be referenced during the audit.
- During the audit process, key individuals involved with the management of the project are to be given the opportunity to comment on issues being audited and will be invited to accompany the auditor during the site inspection.
- Compile an audit report on the implementation of the EMPr and compliance to the Environmental Authorisation and submit this report to the competent authority (DEA&DP).

Compliance ratings against which the listed criteria are assessed are as follows:

Symbol	Rating	Interpretation
Y	Yes	Evidence of compliance
P	Partial	Evidence of partial compliance
N	No	Evidence of non-compliance
NR	Not Relevant	The condition or commitment is not relevant at this stage of the development or it is inappropriate
NA	Not Audited	Not audited

6.3 Non-Compliance

Definition

The non-compliance is defined as, and will be issued for:

- Any deviation by the Applicant from the environmental conditions and requirements as set out in the EA and EMPr, or;

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- Any contravention by the Applicant of environmental legislation, or;
- Any unforeseen environmental impact resulting from direct or indirect actions or activities on site that would be considered as a significant impact. Significance will be determined by the Environmental Control Officer (ECO) but will be informed by geographic extent, duration, lasting effects of the impact and extent of remediation to the impact.

Types of non-compliances issued

Two types of non-compliances may be issued:

A. Stop Works Non-Compliance

Stop Works Non-Compliance will require that all works as described in the non-compliance will stop immediately and may only continue on a formal written permission from the ECO.

Stop Works Non-Compliance will be issued under the following conditions:

- Total disregard by the Applicant to the environmental conditions and requirements listed in the EA and EMPr;
- An activity that if left unattended will escalate the degree, severity or extent of the environmental impact.

B. General Non-Compliance

A general non-compliance will allow work and activity by the receiving party to continue while the corrective action takes place.

6.4 Issuing a Non-Compliance

Non-compliance may be issued to:

- The Applicant
- Any representative of the Applicant

6.5 Process of Issuing Non-Compliance

The appointed Environmental Control Officer (ECO) may issue a formal non-compliance to the Applicant. A copy of the non-compliance issued will be placed in the EMPr file. The Applicant will be responsible for returning a formally signed off corrective action (as per template) to the ECO to be placed in the EMPr file. The ECO will be required to sign-off on the corrective action, indicating that it has been completed within the timeframes and to the satisfaction of the ECO.

In the event of damage being caused, the contractor will be responsible for the cost of cleanup, repair and / or rehabilitation as necessary, as well as being liable for the fine. Where there is erosion damage, pollution to the environment, or contravention of the no-go policy, the contractor is required to reinstate the conditions to normal as determined by the ECO. Spot fines up to a maximum value of R10 000 per offence can be instituted at the discretion of the ECO for any breach or non-compliance in terms of the EMPr. Fines issued will increase exponentially for repeat offences.

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6.6 Failure to complete corrective actions

In the event that the Applicant fails or refuses to complete the corrective action, either at all or within the allocated timeframe, the ECO shall,

- Inform DEA&DP in writing that a condition of approval for the project is not being met.

The DEA&DP office is responsible for resolving the impasse with the Applicant.

The Applicant is deemed not to have complied with the EA and EMPr if:

- Within the boundaries of the site and site extensions there is evidence of contravention of clauses;
- Environmental damage occurs due to negligence; inappropriate actions taken by the Applicant or any of his staff.

On receiving a notice of non-compliance the Applicant is required to swiftly address the issue/s taking all corrective actions required to rectify the situation. Penalties will be applied for non-compliant situations. Penalties/fines are advocated to ensure corrective measures are successfully undertaken and the necessary standard of rehabilitation is achieved.

The penalty associated with a chemical spill is not a set amount but will depend on the nature and extent of the spill; the cost of any soil and /or groundwater monitoring and any soil and /or groundwater remediation required by authorities will be to the Applicant's account.

The imposition of such a penalties / fines shall not preclude the relevant competent authority from applying an additional penalty in accordance with statutory powers.

Failure to redress the cause shall be reported to the relevant authority for them to deal with the transgression as deemed fit.

6.7 Unlawful Activity/ies

NEMA and its Regulations entitle environmental authorities to administer a fine not exceeding R 5 million or 10 years imprisonment and/or a fine and imprisonment for a person guilty of an unlawful activity. The Act makes allowance for the rectification of unlawful activity and may charge up to R1 million administration fees over and above the remediation costs.

NEMA makes provision for damages to be awarded by the courts where loss or damage has occurred as a result of a contravention of other environmental statutes. Importantly, NEMA provides for the liability of conviction of employees, managers, agents and directors for any offences resulting from the failure to take all the reasonable steps that were necessary under the circumstances to prevent the commission of an offence.

13. AMENDMENTS TO THE EMPr

This EMPr outlines the environmental practices and mitigation measures to be adhered to during the construction, operational phases, and rehabilitation in order to curtail and/or minimise potential negative impacts and promote sound environmental practises.

Any major issues not covered in the EMPr as submitted, will be addressed as an addendum to this EMPr, and submitted for approval. The EMPr is a living document and is subject to change from time to time in consultation with the DEA&DP. Any amendments to the EMPr will require approval from the DEA&DP.

14. ENFORCING THE EMPr

The holder of the Environmental Authorisation (EA) has a responsibility to ensure that all those people involved in the project are aware of and familiar with the environmental requirements for the project (this includes casual labour, etc.). The EA and EMPr shall be part of the terms of reference for all stakeholders. All senior and supervisory staff members shall familiarise themselves with the full contents of the EA and EMPr. They shall know and understand the specifications of the EA and EMPr and shall be able to assist other staff members in matters relating to the EA and EMPr.

TABLE OF RESPONSIBLE PARTIES BELOW:

Responsibility	Name of Responsible Party
Applicant	
Town Planner	
Engineer/s	
Contractor/s	
Site Environmental Control Officer	
External audits	
Game farm manager	
Farm manager	
Operational manager	

15. DRAFT STAFF / RESIDENT CONDUCT CONTROL AND INFORMATION SHEET

ALL STAFF MUST OBEY THE FOLLOWING RULES:	
1	**DO NOT** tamper with or destroy nesting sites, lairs or any other form of animal shelter.
2	**DO NOT** feed the native animals.
3	**DO NOT** leave the project site untidy and strewn with rubbish that will attract pests.
4	**DO NOT** bring any pets onto the construction site.
5	**DO NOT** trespass onto private properties not linked to the project.
6	**DO NOT** carry a weapon onto the project site or in the vehicles transporting workers to and from the site.
7	**DO NOT** set fires.
8	**DO NOT** cause any unnecessary disturbing noise
9	**DO NOT** drive a vehicle under the influence of alcohol.
10	**DO NOT** exceed the national speed limits on public roads or exceed the recommended speed limits in this management plan (where applicable)

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11	**DO NOT** drive a vehicle that is generating excessive noise / leaking / excessive fuels (such vehicles must be reported and repaired as soon as possible).
12	**DO NOT** litter along the roadsides, including both public and private roads.
13	**DO NOT** remove or destroy vegetation around the site without the prior consent of the Applicant and Environmental Control Officer.
14	**DO NOT** tamper with, destroy or remove vegetation from any areas that have been fenced off or marked.
17	**DO NOT** operate critical items of mechanical equipment without having been trained and certified.
18	**ALL** employees must undergo the necessary safety training and wear the necessary protective clothing at all times.
19	**NO** unsocial behaviour will be permitted e.g., excessive shouting, hooting etc.
20	**NO** ad-hoc activities are to be undertaken e.g. fires for cooking, the use of surrounding bush as a toilet facility is strictly forbidden
21	**NO** trespassing on private / commercial properties adjoining the site is forbidden.
22	**NO** worker may be forced to do work that is potentially dangerous or for what he / she is not trained to do.

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16. RESPONSIBILITIES

The "Responsibility" column is merely a guide and does not relieve the Applicant of his responsibilities in terms of overall compliance with the EA and EMPr.

FUNCTION	RESPONSIBILITY
Applicant / Holder of EA (if attained)	• The Applicant is ultimately responsible for the ensuring compliance with all the requirements associated with the construction, operation, rehabilitation and decommissioning phases of the project. • The Applicant is responsible to ensure that all necessary communication and submission of required documentation concerning this project is submitted to the relevant authorities.
Contractor / s / Subcontractor/s	• The Contractor is required to adhere to the EMPr and is responsible to ensure that all staff appointed also adhere the EMPr. • Ensures that all staff are made aware of the need to conduct activities in an environmentally responsible manner. • (Contractor) On instruction by the ECO, ensures that storm/surface water controls are established. • Ensures prompt remediation of any sewage spills. • Stockpiles are protected from aeolian effects, stormwater effects, or being driven over by workers. • Ensures that a "clean-site" policy is applicable at all times. • Ensures that all complaints by residents are dealt with promptly. • Is responsible for any contravention/s by staff or any non-compliance with the EMPr.
Site ECO	• On site ECO is required to carry out daily requirements of the EMPr • The sensitive vegetation, sensitive fauna and possibility of archaeological materials as well as ongoing waste, soil, and stormwater management requires an on-site ECO for this development
Environmental Control Officer (ECO)	• An external ECO is to have access to the site at all times, for the purpose of inspections to ensure that the environmental conditions of the EMPr as well as the conditions stipulated to in the EA and the recommendations made in the EIR are being implemented and adhered to. • The ECO to carry out monthly audits to ensure compliance with EMPR and EA (if attained) and submit the reports to project team and relevant authorities • The need for any deviations or variations in the environmental conditions must be reported to the DEDEAT for approval prior to these being undertaken. • The ECO must be fully cognisant with the contents of the Environmental Authorisation as well as this EMPr and any other applicable legislation
Competent Authority - DEADP	• The Compliance Officer appointed by the Competent Authority is responsible for the ensuring that the Applicant, Contractor, and ECO are compliant with the provisions of the EA and EMPr.
Cape Nature	• Responsible for issuing any SCC permits for fauna and smaller plants
Department of Forestry	• Responsibility for issuing permits for protected trees
Heritage WC	• Responsible for issuing of permits required for any discovered artefacts during excavation / site clearing activities

ACKNOWLEDGEMENT FORM

Record of signatures providing acknowledgment of being aware of and committed to complying with the contents of this Environmental Management Programme (EMPr), which relates to the environmental mitigation measures for the project outlined below, and the environmental conditions contained in all other contract documents.

PROJECT NAME:

PROPOSED residential DEVELOPMENT on Erf 2074, Marine Drive, Plettenberg Bay, Bitou Local Municipality, Western Cape

DEA&DP REF:

APPLICANT:

Signed: …….. Date: …….....

CONTRACTOR:

Signed: …….. Date: …….....

SITE ENVIRONMENTAL CONTROL OFFICER

Signed: …….. Date: …….....

EXTERNAL ENVIRONMENTAL CONTROL OFFICER

Signed: …….. Date: …….....