



**Draft Environmental Management Plan for
proposed clearance of vegetation for agricultural
purposes, Boerlands 631-JT, near Barberton, City
of Mbombela, Mpumalanga Province**

Draft Environmental Management Plan

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CORE Environmental Services

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TABLE OF CONTENTS

TABLE OF CONTENTS 2

1. OVERVIEW OF THE PROJECT 3

 1.1 Introduction 3

 1.2 Location..... 3

 1.3 Details of the EAP 6

 1.4 Policy Legal and Administrative Framework 6

 1.5 Description of the project 8

2. DESCRIPTION OF IMPACT MANAGEMENT OUTCOMES 9

 2.1 Impact Management Outcomes 9

 2.2 Management Statement 9

3. IMPACT MANAGEMENT 10

LIST OF FIGURES

Figure 1: Locality map – Proposed project area on portion 3 of the farm boerlands 631-JT 4

Figure 2: Zoomed Locality Map of the proposed agricultural area, portion 3 of the farm Boerlands 361-JT 5

LIST OF TABLES

Table 1: Legislation applicable to the project..... 6

Table 2 | Mitigation measures required for activities associated with establishment and operational phase. 10

1. OVERVIEW OF THE PROJECT

1.1 Introduction

MS Teck Farming (Pty) Ltd is proposing to clear approximately 19.5 hectares of indigenous vegetation to establish an agricultural area for the purpose of macadamia or similar farming activities. In accordance with the National Environmental Management Act 107 of 1998, GNR 983 of 2014 (as amended in 2017), an Environmental Authorisation (EA) is required before any clearance activities can take place.

MS Teck Farming subsequently appointed Core Environmental Services to apply for the EA by means of conducting a Basic Environmental Authorisation process and compiling an Environmental Management Plan as regulated within General Notice Regulation 982, 2014 (as amended in 2017).

1.2 Location

The proposed site is located along the R38 between Barberton and Badplaas, on portion 3 of the farm Boerlands 631-JT, near Barberton, City of Mbombela, Mpumalanga Province.

Coordinates:

25° 45'58.20"S

30° 53'42.77"E

Surveyor General Code: T0JT0000000063100003

Please refer to the locality map below, Figure 1.

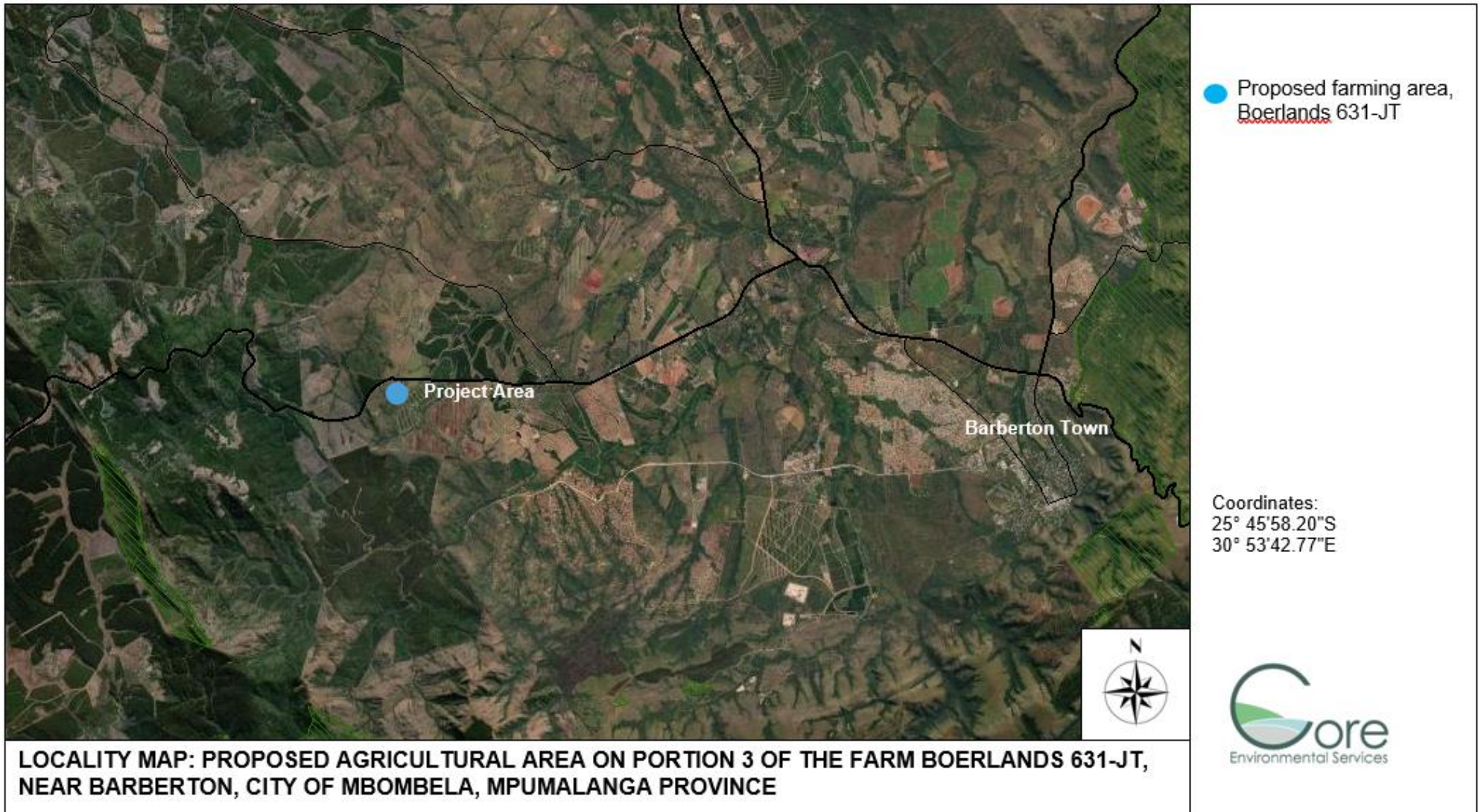


FIGURE 1: LOCALITY MAP – PROPOSED PROJECT AREA ON PORTION 3 OF THE FARM BOERLANDS 631-JT

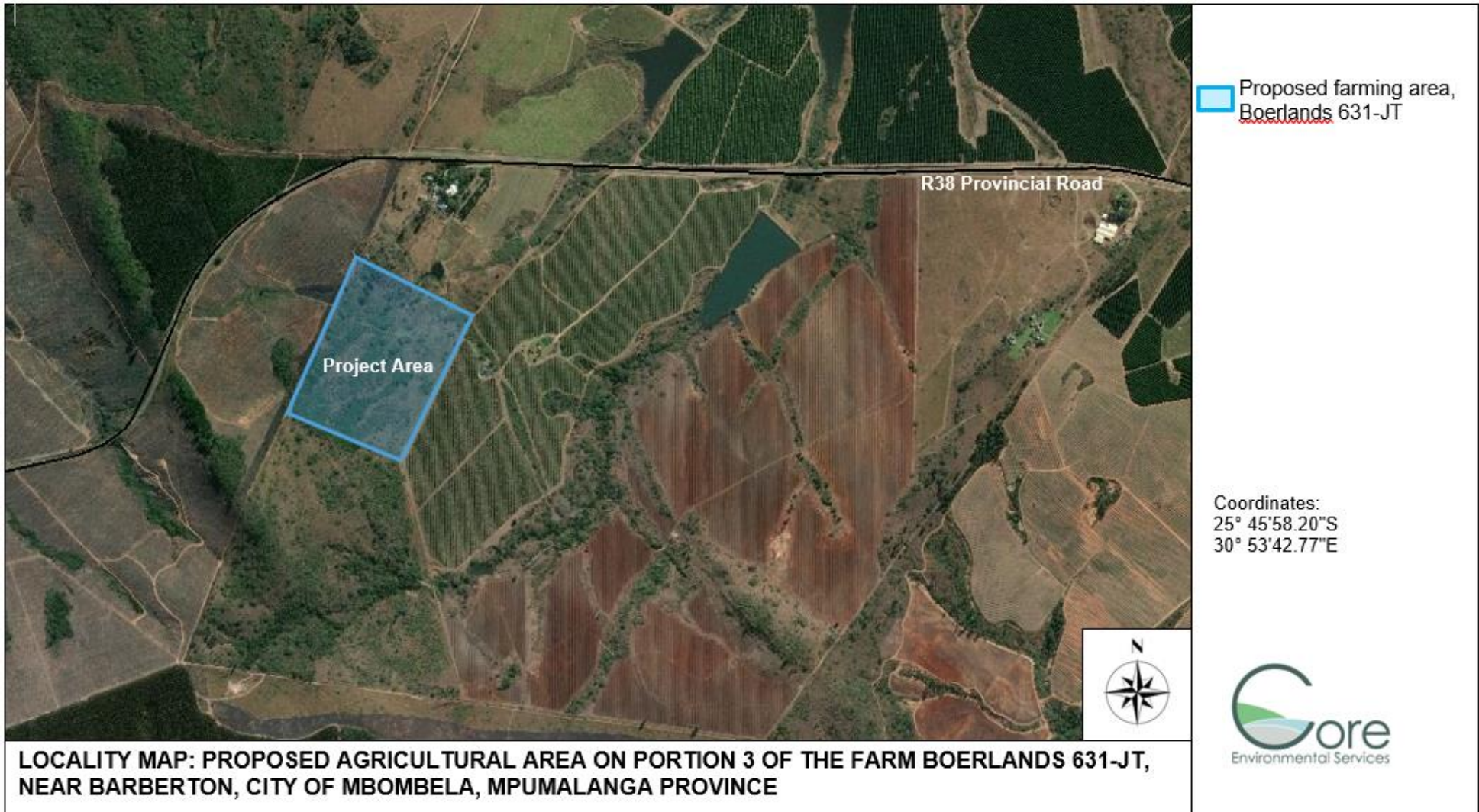


FIGURE 2: ZOOMED LOCALITY MAP OF THE PROPOSED AGRICULTURAL AREA, PORTION 3 OF THE FARM BOERLANDS 361-JT

1.3 Details of the EAP

Ms. Anne-Mari White, is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. White is registered with the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy Legal and Administrative Framework

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	<p>MS Teck Farming (Pty) Ltd will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented.</p> <p>As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.</p>
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation will subsequently be applied for by means of conducting a Basic Environmental Authorisation process as regulated within GNR982 of 2014 (as amended in 2017).
National Biodiversity Act, 2004 (Act No. 10 of 2004)	<p>The act provides for the management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998; the protection of species and ecosystems that warrant national protection; the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bioprospecting involving indigenous biological resource; the establishment and functions of a South African National Biodiversity Institute; and for matters connected therewith.</p> <p>The National Biodiversity Act, 2004, must therefore be considered prior to the clearance of vegetation</p>

	to minimise the impact on the terrestrial biodiversity.
Occupational Health and Safety Act, 1998 (Act No. 85 of 1998)	The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery. During establishment, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.
National Heritage Resources Act, 1999 (Act No 25 of 1999)	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations. The Heritage Specialist did not identify any artefacts which could be of historical or cultural importance, however, should any items of significance be discovered during establishment, a Heritage Specialist must be contacted immediately, and work must cease until confirmation from the Specialist is received. For this reason, the applicant must adhere to the regulations stipulated within the National Heritage Resources Act, 1999
City of Mbombela Integrated Development Plan (IDP) (2017 - 2022)	The primary objectives of the IDP is to foster economic growth that creates jobs and improve infrastructure within the Province. Job opportunities will be created by the proposed agricultural activities which supports economic growth within the area.

In accordance with the National Environmental Management Act 107, of 1998, the following listed activities will be triggered by the proposed development and will require approval prior to commencement:

GNR 983, Activity 27, 2014 (as amended in 2017):

The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for –

- (i) The undertaking of a linear activity; or*

Maintenance purposes undertaken in accordance with a maintenance management plan.

GNR 985, Activity 12, 2014 (as amended in 2017):

The clearance of an area of 300 square meters or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan:

Within (f) Mpumalanga, (ii) within a Critical Biodiversity Area identified in bioregional plans

1.5 Description of the project

MS Teck Farming is proposing to clear approximately 19 hectares of indigenous vegetation to establish an agricultural area for the purpose of macadamia farming activities. The larger portion of the proposed project area is heavily invested with alien invasive species and it is evident that the areas was previously disturbed.

In terms of water use, it is estimated that one hectare of full-grown macadamia trees will require 7200 m³ of water per annum in addition to natural rainfall for this area. Thus, with a total of 19 hectares, approximately 136 800m³ of water per year will be required for irrigating purposes. Water will be abstracted from a borehole located on the property. The borehole was tested to deliver a sustainable yield of 432m³ per day, which equates to 157 680m³ per year, which is more than the water requirement of 136 800m³ per year.

2. DESCRIPTION OF IMPACT MANAGEMENT OUTCOMES

2.1 Impact Management Outcomes

The impact management measures described in this section have been informed by the independent environmental assessment of the activities conducted and to be conducted on the farm. These measures have been proposed to mitigate negative impacts and enhance the positive benefits of the project and to, ultimately, achieve the impact management outcomes:

1. MS Teck Farming is operated in an environmentally and socially responsible manner;
2. The EMPr prescribes practical measures for the mitigation of impacts;
3. Roles and responsibilities for the environmental management and monitoring of the proposed activities are defined;
4. All employees and its contractors are aware of the environmental impacts of the activities, thus enabling them to take timeous precautions against environmental damage;
5. Pollution or similar events are mitigated effectively; and
6. Regulatory requirements are complied with throughout.

MS Teck Farming has a legal obligation to comply with the EMPr and to ensure compliance by its workers and agents, where applicable.

The EMPr describes mitigation measures designed to minimise or eliminate the significant adverse impacts that may be caused by the operational activities. It shall form the basis for environmental management at the company. This EMPr should be considered dynamic, as it should be amended if conditions change or more information becomes available.

2.2 Management Statement

A commitment is required from the management in that they shall:

- Take into consideration the surrounding environment and neighbours;
- Always behave professionally on and off site;
- Ensure quality in all work done, both technical and environmental;
- Resolve problems and claims arising from damage immediately, to ensure an uninterrupted flow of operations;
- Read and understand this EMPr and use it for the benefit of all involved;
- Preserve the natural environment by limiting destructive actions on site and by using resources efficiently; and
- Continually improve their environmental management strategies.

3. IMPACT MANAGEMENT

This section forms the core of the EMPr as it provides a description of the proposed impact management actions by identifying the manner in which the impact management outcomes contemplated in section 2 will be achieved. These actions, outlined in Table 2, are shown for the establishment and operational phase throughout. It is the responsibility of the owner of the farm to ensure that adequate resources are allocated to the achievement of these actions. It is the responsibility of the site manager to ensure that these actions are implemented on a day-to-day basis and to verify compliance to the EMPr. The time period for the implementation of the EMPr will be throughout the lifetime of the farming activities, or until such time as the EMPr is amended as a result of an environmental audit or if significant activity-changes take place.

TABLE 2 | MITIGATION MEASURES REQUIRED FOR ACTIVITIES ASSOCIATED WITH ESTABLISHMENT AND OPERATIONAL PHASE.

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
Biodiversity	Establishment and operational	Spreading of invasive plant species Clearing additional vegetation	Clearance of vegetation for footprint of the agricultural area	<p>Objective(s):</p> <ul style="list-style-type: none"> • Elimination of invasive plant species. • Protection of indigenous vegetation of surrounding areas • Protection of fauna <p>Target(s):</p> <ol style="list-style-type: none"> a) Where possible, large trees must be retained on site; b) No activities are to take place on within the ephemeral drainage lines or within the 10m buffer imposed. c) Spoil material may not be pushed into the drainage lines (on the adjoining properties) 	Visual Inspection and yearly external environmental audit	On-going, continuous monitoring by farm manager during establishment and operation. Yearly external audit by an external environmental auditor	No invasive plant species within the perimeter of the site. No additional clearance of vegetation besides the footprint of the agricultural area

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
				<ul style="list-style-type: none"> d) Workers to be discouraged from killing animals and birds for relish; e) No staff member may be allowed to collect firewood or any other plant resources from surrounding vegetation. Any evidence of this must be followed up with prosecution and penalties levied on the company responsible for the establishment. Trees removed within the footprint of the agricultural area may be sold or donated during the establishment phase. f) Where alien invasive plants occur, they must be uprooted, cut and /or chemically treated. (Use only approved chemicals); g) Implement an alien vegetation control programme; h) No wild animal may under any circumstance be handled, removed or be interfered with 			
Air Quality	Establishment phase	Dust generation	Clearance of vegetation	<p>Objectives: To minimise the impact of dust generated, on neighbouring land users</p>	Visual inspection and complaints received from neighbouring land users.	On-going, continuous monitoring by farm manager.	No complaints from neighbouring land users

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
			Disturbance of soil Vehicle movement on and off site	Targets: a) Speed limit must be enforced in all areas to reduce the levels of dust pollution. b) No refuse waste or vegetation are to be burned on the premises or on surrounding premises			No excessive dust generated during establishment activities
Water	Establishment and operational phase	Water pollution and siltation of the watercourse Irresponsible water use	Clearing of vegetation Use of pesticides Irrigation	Objectives: To minimise the impact on water resources and minimise water consumption Targets: a) Conserve the riparian zone with a 10m buffer zone; b) Use pesticides and fertilizer with care and according to specifications and prevent such materials from entering the watercourse; c) Ensure that there are no leaking water pipes or taps on the property. d) Provide water to Macadamia trees according to their	Visual inspection and monthly monitoring of water abstraction by installing a meter to the borehole pump	Monthly by the farm manager	Riparian area is protected and water use within the allocation

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
				requirements and ensure that it is not exceeded.			
Sanitation and waste disposal	Establishment and operational phase	Soil pollution Environmental pollution	Personnel conduct	<p>Objectives: To prevent pollution caused by improper sanitation and waste storage and disposal</p> <p>Targets:</p> <p>a) Littering on site and the surroundings areas are prohibited.</p> <p>b) Waste must be disposed, as soon as possible and not be allowed to stand on to decay, resulting in bad odours and attracting vermin.</p> <p>c) All waste removed from site must be disposed at the municipal/permitted waste disposal site.</p>	Visual inspection	Daily by the farm manager	No littering on site or pollution caused by improper storage and disposal of waste
Soil	Establishment and operational phase	Soil erosion Soil contamination	Heavy rain/storms increasing the possibility of erosion	<p>Objective(s): To minimise soil erosion and soil contamination with the use of pesticides.</p> <p>Target(s):</p> <p>a) Measures must be taken to prevent soil erosion. This can</p>	Visual inspections	Continuous site inspections, especially after heavy rainfall.	No erosion and soil contamination present on site

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
			Use of pesticides during establishment	<p>be achieved by means of using sandbags as a temporary measure or gabions on areas prone to erosion during the operational phase;</p> <p>b) Clearance of vegetation must be limited to the footprint of the agricultural area only. Areas cleared of vegetation must be rehabilitated immediately after the establishment phase is complete</p> <p>c) Alternatives for the management of pests must be investigated. Only approved pesticides and herbicides may be used for the management of pests</p>			
All environmental aspects Health and safety	Establishment	Various environmental, Health and safety impacts.	Personnel conduct	<p>Objective:</p> <ul style="list-style-type: none"> To ensure that personnel adhere to EMPr requirements; To ensure the health and safety of employees and surrounding landowners <p>Target:</p> <p>a) Ensure that inductions are conducted, and all personnel have records that are up to date;</p>	Visual inspection and inspection of records	On-going, continuous monitoring by farm manager.	No incidents recorded or reported.

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
				<ul style="list-style-type: none"> b) Ensure that all training includes requirements of the EMPr. c) Take adequate precautions to ensure that fires are not started as a result of works on site. d) Do not permit any fires or open flames, especially during the dry season. e) Ensure that the site is equipped with adequate firefighting equipment. Take immediate steps to extinguish any fire, which may break out. f) No open trenches are permitted without the use of demarcation tape. g) Secure storage of materials on site particularly hazardous material e.g. chemicals and fuels. h) Do not store any fuel or chemicals under trees. i) Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area. 			
Heritage	Establishment phase	Disturbance of heritage resources or artefacts	Possible excavation activities	<p>Objective:</p> <ul style="list-style-type: none"> • Protection of heritage resources 	Visual inspection during excavation	Prior and during excavation	Protection of heritage resources if any is observed

Aspect	Phase	Potential Impact	Activity	Actions to avoid, modify, remedy, control or stop action, activity or process causing pollution or environmental degradation	Recommended Monitoring Method	Frequency of Monitoring	Performance Indicator
				<p>Target: Work in areas where artefacts are found must cease immediately. The excavation must be examined by an archaeologist as soon as possible. All necessary actions to that delays are minimized must be taken.</p>			
Social	Establishment and operational phase	Employment	Employment opportunities	<p>Objectives: To ensure that employment opportunities and social benefits are maximised.</p> <p>Targets: a) Unskilled job opportunities should be afforded to local communities where feasible. b) Payment should comply with applicable labour legislation in terms of minimum wages.</p>	As and when basis.	Whenever new labour is hired.	Job and contracting opportunities are afforded where feasible.