

# **DRAFT SCOPING REPORT**

**THE CONSTRUCTION OF TWO DAMS ON,  
PORTION 3 OF THE FARM SUNNYMEAD 600JT IN BARBERTON.  
UMJINDI LOCAL MUNICIPALITY,  
MPUMALANGA PROVINCE.**

**DEDET REF: 17/2/3/E-275**

**WES REF NO: 14/30/07/04**

**AUGUST 2014**

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UMJINDI LOCAL MUNICIPALITY,  
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**DEDET REF: 17/2/3/E-275**

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**PROJECT INFORMATION**

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**REPORT TITLE:** *Scoping Report*

**REPORT STATUS:** *Draft*

**PROJECT TITLE:** *Construction of 2 dams on Portion 3 of the Farm Sunnymead, Barberton, Umjindi Local Municipality, Mpumalanga Province.*

**USER CLIENT (APPLICANT):** *LONG CREEK FARMING PTY (LTD)*

**CLIENT (DEVELOPMENT PLANNER):** *Mr DW Moller*

**ENVIRONMENTAL CONSULTANTS:** *Wandima Environmental Services*

**MDEDET REFERENCE NUMBER:** *17/2/3/E-275*

**WES REFERENCE NUMBER:** *14/30/07/04*

**REPORT COMPILATION RESPONSIBILITY**

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**REPORT COMPILED BY:**

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*(MSc Urban Ecology)*

*Environmental Assessment Practitioner*

**REVIEWED BY:**

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**Xolani Nkosi**

*(B.A Environmental Planning and Development)*

## EXECUTIVE SUMMARY

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The farm Sunnymead 600JT, Portion 3 is 30km from Barberton and 10km from Glenthorp turn off and falls in the Umjindi Local Municipal borders. The farm is neglected with *Eucalyptus* trees that grow in the existing stream, there are vacant agricultural fields and for the last 8 years alien vegetation has taken over the derelict areas. There is an existing registered dam with a capacity of 50m<sup>3</sup> on the farm that was used for sugarcane production under irrigation in the past. The dam is surrounded with eucalyptus and alien vegetation. It is silted up and can only store a capacity of 30m<sup>3</sup>. It is better to irrigate the Macadamia orchards from a dam than to pump water directly from the nearby stream and it is also economically viable, Long Creek Farming Pty (Ltd) saw it necessary to construct a dam of 300m<sup>3</sup> to provide sufficient irrigation water. Long Creek Farming Pty (Ltd) bought the farm in November 2012 and began with the rehabilitation of the areas that had overgrown with Eucalyptus trees. The farm has 30ha irrigation rights from the Suid Kaap River. To produce healthy and good quality macadamias, the irrigation process has to be managed with care. The most effective way to manage the irrigation process is to irrigate the trees with stored water.

The construction of the 2 dams will trigger listed activities under:

GNR 544, Listing Notice 1 of NEMA Regulations, 2010 (Activity 11 (iv)(x)(xi)) & Activity 18(i).

GNR 545, Listing Notice 2 of NEMA Regulations, 2010, (Activity 19)

GNR 546, Listing Notice 3 of NEMA Regulations, 2010, Activity 13(a).

The Applicant is required to conduct a **Scoping & Environmental Impact Assessment**, in terms of NEMA Regulations, 2010.

The proposed development area falls within the Savanna Biome of Southern Africa and the vegetation classification of the region is the **Legogote Sour Bushveld** (SVI 9) according to Mucina & Rutherford (2006). This vegetation community covers 352 314ha of which 74.9% remains untransformed, but it is considered poorly protected (Ferrar & Lötter 2007). Considering the extensive residential developments in the Nelspruit and Barberton district and the rapid transformation of the Legogote Sour Bushveld as vegetation community, is considered **Highly Endangered** (Ferrar & Lötter 2007). The ecosystem status is considered vulnerable on the basis that if habitat loss continues the ecosystem will be compromised. According to the Terrestrial Biodiversity Assessment in the MBCP (2006), the area is classified as of **LEAST CONCERN** (Lötter & Ferrar 2006). The biodiversity species score is **MEDIUM** (Lötter & Ferrar 2006) and the Mpumalanga Biodiversity communities are considered **MEDIUM to LOW** according to Biobase (Emery *et. al.* 2002).

A public participation process (PPP) will be followed in according with the 2010 EIA regulations, GNR543, section 54. This process will be executed as follows:

All possible Interested & Affected Parties (I&AP's) was contacted to register and will be given an opportunity to meaningfully participate in the process. Contacts were made with nearby property owners and key I&AP by handing out notices. The commenting period on the Draft scoping Report will be in August 2014.

### Impact statement

A basic environmental impact assessment, underpinned by an extensive Public Participation Process, was conducted. As per the DEAT Guidelines (2006), all relevant Interested and/or Affected Parties (I&APs) were identified, notified and every effort was made to ensure their involvement and participation in the process. Also, all relevant Authorities, notably the Local Municipality,

non-governmental organizations, service providers as well as key stakeholders, were notified and invited to participate in the process. See below tables with the impact assessment and possible

**Table: Potential direct or cumulative impacts**

		Nature of impact	
Construction	Soil & Geology - Topography		
	Surface & groundwater	Potential impact – Wetland assessment Disturbance of ecology of stream/existing dam Deterioration of water quality	
	Air Quality	Possible dust pollution	
	Generation of spoil material and general waste	Possible impact – civil engineer report	
	Ecology Loss of Fauna & Flora	Potential impact – Biodiversity report	
	Socio-economy	Temporary jobs	
	Heritage	No impact	
	Health & Safety	Dust	
Operational	Surface & groundwater	Biodiversity report Ecology of stream & dam will settle over time Deterioration of water quality	
	Agricultural	Improvement of crop production	
	Erosion	No or minimum	
	Visual impacts	No or minimum	
	Positive Social Impacts	Permanent work for farm workers	

**Table: Summary of Impact Assessment**

ALTERNATIVE S1 (PREFERRED ALTERNATIVE)							
Phase	Nature of Impact	Extent	Duration	Intensity/ Severity	Probability/ Certainty	Significance	
						Before	After mitigation
Planning	Topography	Site	Long term	Low	Improbable	Low	Low
	Land use	Site	Long term	Low	Definite	Low	Low
	Geology	Site	Long term	Low	Probable	Low	Low
	Locality	Site	Long term	Low	Definite	Low	Low
	Ecology	Site	Long term	Medium	Definite	Medium	Low
Construction	Soil & Geology - Topography	Site	Long term	Medium	Definite	Medium	Low
	Surface & groundwater	Site	Long term	Medium	Definite	Medium	Low
	Air Quality & Noise pollution	Site	Short term	Low	Improbable	Low	Low
	Generation of spoil material and general waste	Site	Long term	Low	Probable	Low	Low
	Ecology Loss of Fauna & Flora	Site	Long term	Medium	Definite	Medium	Low
	Socio-economy	Local	Long term	High	Definite	Medium	High
	Heritage	Site	Long term	Low	Probable	Low	Low
	Health & Safety	Site	Long term	Low	Probable	Low	Low
Operational	Surface & groundwater	Local	Long term	Low	Definite	Medium	Low
	Agricultural	Site	Long term	Medium	Definite	Medium	Low
	Erosion	Site	Short term	Low	Probable	Low	Low
	Visual impacts	Site	Long term	Low	Improbable	Low	Low
	Positive Social Impacts	Region	Long term	High	Probable	High	High

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**Definition of Terms**

**"Activity"** means an activity identified in Government Notice No. R. 544 and No. R. 545 of 2010 as a listed activity

**"Alternatives"**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to property, activity, design or technology.

**"Associated Infrastructure"** means any building or infrastructure that is necessary for the functioning of a facility or activity or that is used for an ancillary service or use from the facility.

**"Cumulative impact"**, in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

**"Environmental impact assessment"**, means the process of collecting, organizing, analyzing, interpreting and communicating information that is relevant to the consideration of that application.

**"Environmental management programme"** means a detailed plan of action prepared to ensure that recommendations for enhancing positive environmental impacts and/or limiting or preventing negative environmental impacts are implemented during the life-cycle of a project.

**"Interested and Affected Party"** means any person, group of persons or organization interested in or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity;

**"Public Participation Process"** means a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters;

**"Significant impact"** means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment;

**"The Act"** means the National Environmental Management Act, 1998 (Act No.107 of 1998).



## Abbreviations

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BA	Basic Assessment
BID	Background Information Document
DEAT	Department of Environment, Agriculture and Tourism
DEDET	Department of Economic Development, Environment and Tourism
DAFF	Department of Agriculture, Forestry and Fishery
DWA	Department of Water Affairs
DWA&E	Department of Water Affairs and Environment
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Program
I&APs	Interested and Affected Parties
MAP	Mean Annual Precipitation
masl	meters above sea level
MBCP	Mpumalanga Biodiversity Conservation Plan
MDEDET	Mpumalanga Department of Economic Development, Environment and Tourism
MTPA	Mpumalanga Tourism and Parks Agency
NEMA	National Environmental Management Act, Act No 107 of 1998
NEM:WA	National Environmental Management: Waste Act, Act No 59 of 2008
SABS	South African Bureau of Standards
RoD	Record of Decision
WES	Wandima Environmental Services

## Assumptions & Limitations

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For the purpose of this report it has been assumed that all information received from the client has been correct. The information was submitted without a Geotechnical Engineering report and the information can change accordingly.

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## 1. BACKGROUND

### 1.1 Introduction

The farm Sunnymead 600JT, Portion 3 is 30km from Barberton and 10km from Glenthorp turn off. The farm is neglected invade by *Eucalyptus* trees that grow in the existing stream, there are vacant agricultural fields and for the last 8 years alien vegetation has taken over the derelict areas. There is an existing registered dam with a capacity of 50m<sup>3</sup> on the farm that was used for sugarcane production under irrigation. The dam is surrounded with eucalyptus and alien vegetation. It is silted up and can only store a capacity of 30m<sup>3</sup>. It is better to irrigate the Macadamia orchards from a dam than to pump water directly from the nearby stream and it is also economically viable, Long Creek Farming Pty (Ltd) saw it necessary to construct a dam of 300m<sup>3</sup> to provide sufficient irrigation water. Long Creek Farming Pty (Ltd) bought the farm in November 2012 and began with the rehabilitation of the areas that have Eucalyptus trees.

Mr Willem Moller from Long Creek farming is a well-known farmer in the Nkomazi area. The company decided to expand their operations in the Barberton area and bought Portion 3 of the farm Sunnymead to produce macadamia nuts. Portion 3 of the farm Sunnymead has 30ha irrigation rights from the Suid Kaap River. To produce healthy and good quality macadamias, the irrigation process has to be managed with care. The most effective way to manage the irrigation process is to irrigate the trees with stored water.

### 1.2 Applicant

<b>Project applicant:</b>	LONG CREEK FARMING PTY (LTD)		
<b>Trading name (if any):</b>			
<b>Contact person:</b>	WILLEM MOLLER		
<b>Physical address:</b>	PORTION 3 OF THE FARM SUNNYMEAD, BARBERTON		
<b>Postal address:</b>	P O BOX 856, MALELANE		
<b>Postal code:</b>	1320	<b>Cell:</b>	082 727 8202
<b>Telephone:</b>		<b>Fax:</b>	086 578 2127
<b>E-mail:</b>	<a href="mailto:dwmoller@lantic.net">dwmoller@lantic.net</a>		

### 1.3 Environmental Assessment Practitioner (EAP) Details

<b>Environmental Assessment Practitioner:</b>	WANDIMA ENVIRONMENTAL SERVICES		
<b>Contact person:</b>	RIA WILKEN		
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<b>E-mail:</b>	<a href="mailto:Ria.wilken@telkomsa.net">Ria.wilken@telkomsa.net</a>		
<b>Qualifications:</b>	MSC: ENVIRONMENTAL SCIENCE		
<b>Professional affiliations (if any):</b>	IAIAsa		

### 1.4 Terms of Reference

**Wandima Environmental Services Pty (Ltd)** was appointed as an independent Environmental Assessment Practitioner (EAP) by **Long Creek Farming Pty (Ltd)**, to conduct a **Scoping and Environmental Impact Assessment Process** for the project in accordance to the NEMA Regulations GN R543, 2010. Potential environmental impacts, direct and indirect, positive or negative, associated with a proposed project are to be identified, assessed and reported

on. These identified impacts are to be managed and mitigated through the environmental planning and control processes.

In terms of section 24 (2) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), the proposed construction of the 2 dams with a dam wall higher than 5m required to conduct a **Scoping & Environmental Impact Assessment** and trigger the following listed activities:

The construction of the 2 dams will trigger listed activities under:

GNR 544, Listing Notice 1 of NEMA Regulations, 2010 (Activity 11 (iv)(x)(xi)) & Activity 18(i).

GNR 545, Listing Notice 2 of NEMA Regulations, 2010, (Activity 19)

GNR 546, Listing Notice 3 of NEMA Regulations, 2010, Activity 13(a).

The Applicant is required to conduct a **Scoping & Environmental Impact Assessment**, in terms of NEMA Regulations, 2010.

### 1.5 Purpose of Scoping

The purpose of scoping is to determine the “scope” of the impact assessment that will be conducted in respect of the activities for which authorization is being applied for. The emphasis during scoping is to identify:

- Issues of concern
- Potential impacts
- Potential activity alternatives
- Determine additional information requirements, and
- Propose the method of impact assessment and specialist study requirements

This Scoping Report includes content as prescribed in Section 28 (1) of the EIA regulations as published in Government Notice R543 of 18 June 2010.

### 1.6 Regulating Authority

An application was lodged with the Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET), Ehlanzeni District. The Department acknowledged receipt hereof on the **30<sup>th</sup> of April 2014**. DEDET reference number is **17/2/3/E-275** and the responsible officer is **Ms Robyn Luyt**.

### 1.6 The Notification Procedure

Notification commenced on the **14<sup>th</sup> of May 2014** including the following:

- Fixing site notices on the property boundaries
- Distributing letters and background Information Documents (BID's) to adjacent property owners.
- Informing relevant authorities and departments about the proposed development
- Placing an advertisement in the local newspaper

### 1.7 Assumptions

For the purpose of this report it has been assumed that all information received from the developer and project manager has been correct.

## 2. PROJECT & PROPERTY DESCRIPTION

### 2.1 Location of the Project

The proposed two dams and agricultural fields are to be situated on Portion 3 of the Farm Sunnymead 600JT in Barberton, Umjindi Local Municipality in the Mpumalanga Province. The farm is located 30km from Barberton and 10km from Glenthorp turn off (See Figure 1).

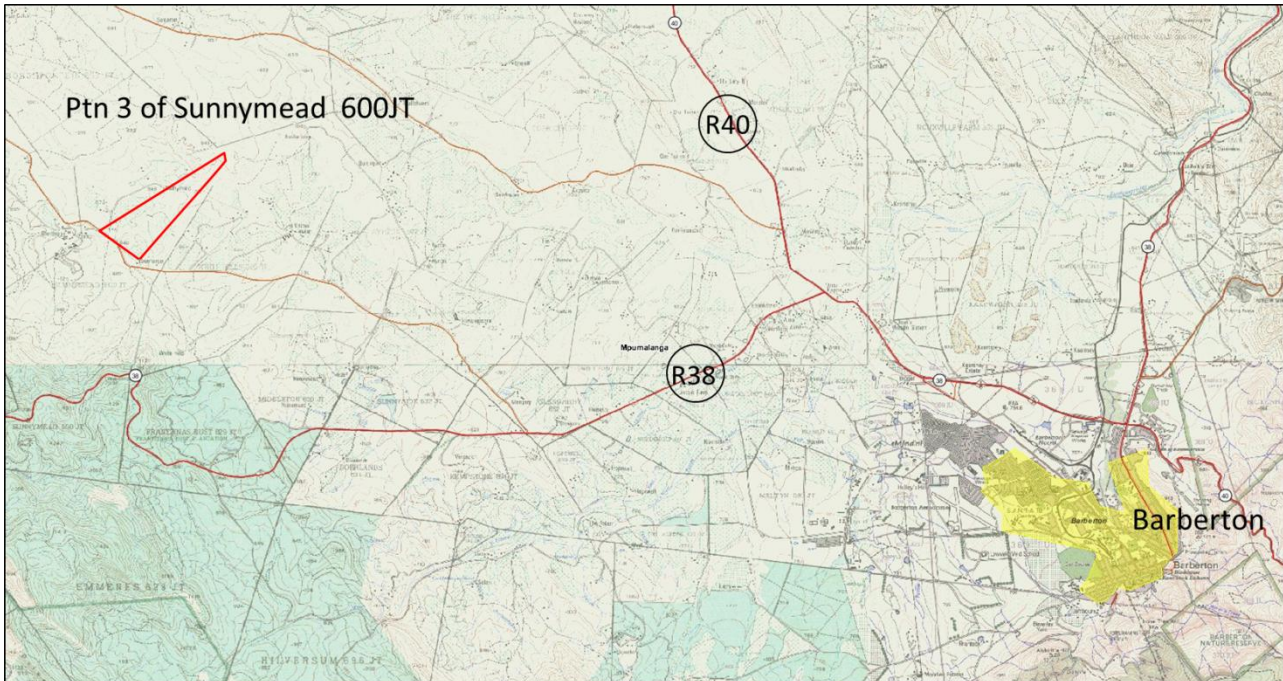


Fig 1. Locality of ptn3 of the Farm Sunnymead.

### 2.2 Description of the Property/Size

Portion 3 of the farm Sunnymead is 92.244ha with eucalyptus plantations, neglected agricultural fields with remains of sugarcane, virgin land and cultivated grass. There is an existing dam with a capacity of 50m<sup>3</sup> that was used to irrigate the sugarcane.

The farm belongs to Long Creek Farming of which Mr DW Moller is a shareholder of the company. See attached Appendix D for the legal registration documentation.

### 2.3 Project Motivation

The economy of Umjindi Local Municipality is driven mainly by mining, agriculture, tourism and forestry production. The agriculture industry produces food for the country, provide job opportunities and create an economy in small towns like Barberton. Portion 3 of the farm Sunnymead laid barren for 5-7 years. Jobs were created with the start of the nursery and more jobs, temporary and permanently will be created with the construction of the dam, preparation of the agricultural fields and during the maintenance and operation of the macadamia orchards.

The impact of the 2 proposed dams will be insignificant or minimum on the natural (virgin land) because it will cover 16ha of previous eucalyptus plantations and 12 ha of agricultural fields. There is an existing electrical pole of Eskom available for the irrigation pump. Existing access and internal roads will be used for this project.

## **2.4 Need and Desirability**

### **2.4.1 Need for the Activity**

The proposed development of the 2 dams is on a farm zoned for agricultural activities and therefore is these projects in line with the objectives of the Umjindi Municipality SDF and IDP. The proposed development and associated operational activities are in line with the Provincial priorities and will contribute to the identified priorities. The farm was not in production for 5-7 years and the Department of Agriculture will support activities that will make use of good agricultural soil for the production of food. The existing agricultural fields will be planted within the next year (after EA approval) and will be in production within 7 years. It will not be necessary to create access roads as the existing access and internal roads will be used for the activity.

### **2.4.2 Desirability for the Activity**

The proposed area for the 2 dams and new macadamia orchards was previously used for agricultural purposes and for *Eucalyptus* plantation. The proposed development will not impact human health and wellbeing or cultural areas negatively. The construction of the 2 dams is in a stream that is a sensitive area, but most of the area that will be covered by the dam is existing *Eucalyptus* plantations or agricultural fields. The proposed developments will not have cumulative impacts on the environment.

## **2.5 Project alternatives**

### **2.5.1 Activity / site alternatives**

The farm belongs to the owner which intent to produce macadamia nuts under irrigation. To produce healthy and good quality macadamia nuts for the national and international market, the owner have to constructed a dam for irrigation of the macadamia orchards.

### **2.5.2 No Go Alternatives**

High potential agricultural soil and irrigation rights are available to produce good quality crops. With the new agricultural development and proposed activities, more farm workers can be appointed. If the project is not approved the existing workers will lose their jobs, the potential new farm workers will not have a job and the municipality will have a loss of tax income from the farm. The people that work on the farm spend money in Barberton and it can hamper the economy of Barberton town.

### 3. STUDY APPROACH AND METHODOLOGY

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#### 3.1 Methodology

The regulating authority for this project is the **Department of Economic Development, Environmental and Tourism** (DEDET). The DEDET is commissioned to do the final decision making and authorization for this EIA application. The process is followed according to the regulations as published as R GN 543, in the Environmental Impact Assessment Regulations (2010). After the application for an EIA has been submitted, the application is acknowledged by DEDET and a reference number is allocated for administration.

The Scoping Process entails the project description and assessment of the project including its alternatives. It is aimed at addressing the following:

- Description of the project;
- Assessment of alternatives;
- Description of the property on which the activity is to be undertaken and the location of the property,
- Description of the environment that may be affected;
- Identification of potential environmental issues and impacts;
- Details of the participation of public process (PPP) in terms of regulation 27(a)/ 54
- Description of the need and desirability;
- Plan of Study for Scoping.
- Identification of relevant legislation and authorities;
- Selection of specialist studies to be incorporated in the EIA phase;

The scoping report aims to identify all possible impacts and issues that will be assessed in the EIA phase. The draft Scoping report is then compiled and distributed to all registered I & AP's as well as the authorities for review and comment before the submission of the final scoping report to DEDET.

#### 3.2 Draft Scoping Phase:

After the project has been registered at the MDEDET, a Public Participation Process (PPP) started according to section 54 of Regulation 543. The public was invited on the **14<sup>th</sup> of May 2014** to register as Interested and Affected Parties (I&AP) and the Draft Scoping Report will be available for comments during **August 2014**. The report included the description of the proposed project, an assessment of the environmental impacts and a draft EMPr.

## 4. LEGISLATIVE CONTEXT OF A SCOPING STUDY

### 4.1 Legislation and Methodology

Other legislation, plans and policies that are related to this proposed project will be used in the compilation of the reports and is listed in table 1.

**Table 1: Other legislations related to the proposed development.**

LEGISLATION	IMPLICATIONS
Nature Conservation ordinance, 1974 (Act no 19 of 1974)	The protection of fauna and flora.
Conservation of Agricultural Resources Act, 1983 (Act no 43 of 1983)	To provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.
Environmental Conservation Act, (Act no 73 of 1986)	Conservation of natural areas
Occupational Health and Safety Act, 1993 (Act no 85 of 1993)	The protection of the health and safety of workers in the construction and operational phase of the development.
The Constitution of the Republic of South Africa, 1996 (Act No 108 of 1996)	Section 24 of the Constitution provides for the environment that is not harmful for the health and people's wellbeing. The proposed development should be done following environmental impact assessment procedures to ensure a sustainable environment for all.
National Environmental Management Act 1998 - NEMA (Act No 107 of 1998)	The development must be socially, environmentally and economically sustainable.
Mpumalanga Conservation Act, 1998 (Act 10 of 1998)	Provides for the management and conservation of Mpumalanga's biodiversity.
National Forest Act, 1998 (Act No 84 of 1998)	Protection of endangered trees according to the list mentioned in the act.
National Water Act, 1998 (Act No 36 of 1998)	Legislation which gives a mandate to DWAF to maintain good water quality.
National Heritage and Resources Act, 1999 (Act no 25 of 1999)	The protection of heritage areas.
Promotion of Access to Information Act, 2000 (Act No2 of 2000)	Legislation that allows the public access to information about activities that influence their well-being and to make contributions to decision making
National Health Act, 2003 (Act No 61 of 2003)	The development must be developed and operate according this regulations.
National Environmental Management : Biodiversity Act, 2004 (Act no 10 of 2004)	The protection of the national biodiversity.
NEMA (Act 107 of 1998 and GN R385 (Regulations of NEMA, Chapter 5) and GN 543-546, 2010	Gives the Department of Environment a chance to evaluate possible impacts and the management there off.
Spatial Development Framework (SDF), 2013	Sound future municipal planning. The development has to be part of the future planning of MLM.

### 4.2 Policies & Guidelines

- **EIA Regulations as listed in Government Notices No's R543, R544, R545 and R5436.**

The S&EIR has been undertaken in accordance with the requirements of the EIA Regulations, 2010 and the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998).

Activities identified in terms of the 2010 Regulation, R543 may not commence without environmental authorization from the competent authority, MDEDET and in respect of which the investigation, assessment and communication of activities must follow the EIA procedure as described in section 28. An application has been lodged at the MDEDET according to section 26 of R543 of the EIA regulations, 2010.

The following activities are registered under **GN R544 (LN1), 2010**:

**GNR 544, Listing Notice 1 of NEMA Regulations, 2010.**

- **Activity 11 (iv)(x)(xi):** *The construction of 2 dams where such construction occurs within a watercourse, where the building of 2 dam walls will cover more than 50m<sup>2</sup> and the construction of other infrastructure such as a pump station that will cover more than 50m<sup>2</sup> within 32m of the Suid Kaap River.*
- **Activity 18(i):** *The infilling or depositing of any material of more than 5m<sup>3</sup> into, or the dredging, excavation, removal or moving soil, sand, pebbles or rock from a watercourse.*

**GNR 545, Listing Notice 2 of NEMA Regulations, 2010.**

- **Activity 19:** *The construction of 2 dam walls with the highest of the dam wall as measured from the outside toe of the wall to the highest part of the wall is 5m or higher.*

**GNR 546, Listing Notice 3 of NEMA Regulations, 2010.**

- **Activity 13(a):** *The clearance of 16,588 ha vegetation of indigenous vegetation for the preparation for the use of agricultural field – macadamia orchard.*

- **DEAT Guideline 4: Public Participation (2006)**

DEAT has released a guideline for the implementation and management of the public participation process in support of the Environmental Impact Assessment Regulations, 2006. The guideline presents an approach to the public participation process, which is considered as an integral part of the EIA process.

- **DEAT Guideline 5: Assessment of Alternatives and Impacts**

DEAT released a guideline for the assessment of alternatives and impacts in support of the Environmental Impact Assessment Regulations. The guideline presents an approach to the assessment of alternatives and impacts, which are considered an integral part of the EIA process. Alternatives that will be considered in this proposed development include site, activity and technology alternatives.

- **International Perspective**

There are no international agreements and conventions that are relevant to the proposed project.



## 5. DESCRIPTION OF THE ENVIRONMENT

### 5.1 Climate

The proposed area is in a summer rainfall area with an average rainfall of 700mm per year and has with dry winters. Frost is infrequent and the mean monthly maximum and minimum temperatures are 36°C and 0.8°C for October and June respectively (Mucina & Rutherford, 2006).

### 5.2 Topography

The Umjindi municipal area is situated in the Lowveld escarpment with an average elevation of 637 meters above sea level (masl) and varying between 766masl at the Suid Kaap River and 877masl at the northern entrance of the property. The slope at the proposed development area is gentle to moderate and varying between 8-9%. No excessive erosion is expected. The property is situated in the landscape type **Dry Undulating/Flat Lowlands** that is considered of **MEDIUM – LOW** importance for conservation (Emery *et. al.* 2002).

### 5.3 Geology & Soils

Most of the soils are underlain gneiss and migmatite of the Nelspruit Suite, but in the southern part, in Barberton area, occurs on the potassium-poor rocks of the Kaap Valley Tonalite. Archaean granite plains with granite inselbergs and large granite boulders occur. Soils are of Mispah, Glenrosa and Hutton forms which is shallow to deep, sandy or gravelly and well drained. Diabase intrusions are common, given rise to Hutton soils. Land types Ab, Fa and Ae. Soil erosion is very low to moderate in this area (Mucina & Rutherford, 2006).

### 5.4 Surface and groundwater

The property is situated within the Crocodile River Catchment. The Suid Kaap River is an east flowing river that comprises a major stem of sub-catchments in the iNkomati Water Management System that is an international drainage basin, lying across the southern Lowveld and the southern Mozambique region.

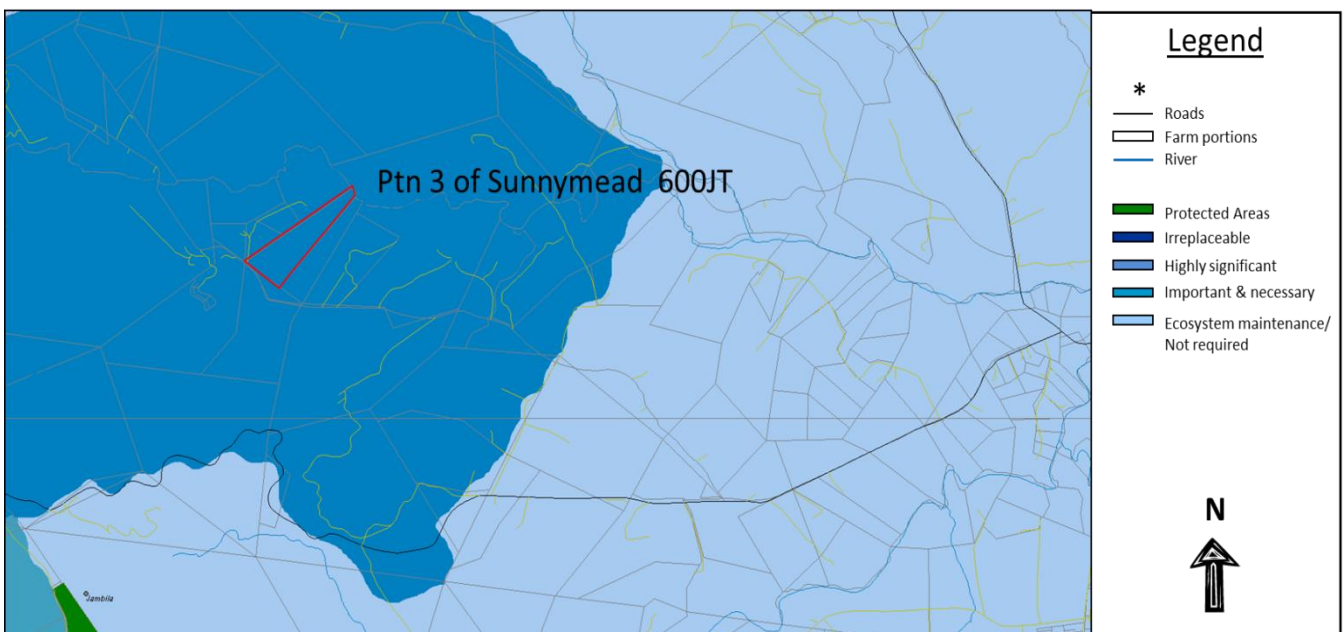


Fig. 2: Illustration of the aquatic sensitive area with the position of the farm.

The proposed development area falls in an aquatic sensitive area, rated as "Important & Necessary" (See Fig 2). A drainage line runs through the property from Southwest to Northeast into the Suid Kaap River. There is an existing dam in the drainage line that was used for irrigation purposes. Thirty (30) ha irrigation rights for agricultural uses were included in the purchases agreement when the owner bought the farm in 2012.

## 5.5 Flora

The proposed development area falls within the Savanna Biome of Southern Africa and the vegetation classification of the region is the **Legogote Sour Bushveld** (SVI 9) according to Mucina & Rutherford (2006). This vegetation community covers 352 314ha of which 74.9% remains untransformed, but it is considered poorly protected (Ferrar & Lötter 2007). Considering the extensive residential developments in the Nelspruit and Barberton district and the rapid transformation of the Legogote Sour Bushveld as vegetation community, is considered **Highly Endangered** (Ferrar & Lötter 2007). The ecosystem status is considered vulnerable on the basis that if habitat loss continues the ecosystem will be compromised.

According to the Terrestrial Biodiversity Assessment in the MBCP (2006), the area is classified as of **LEAST CONCERN** (Lötter & Ferrar 2006). The biodiversity species score is **MEDIUM** (Lötter & Ferrar 2006) and the Mpumalanga Biodiversity communities are considered **MEDIUM to LOW** according to Biobase (Emery *et. al.* 2002). The main threats to the biodiversity of the area are urban expansion, which eventually leads to the loss and fragmentation of available habitat for many species thus decreasing biodiversity. Other threats on the ecology and biodiversity include the risk of fire, invading alien vegetation and the increased pressure of harvesting of vegetation.

During the site investigation on 17 April 2014, it was found that the area is highly disturbed with a neglected Eucalyptus plantation that expanded into the stream. Relatively low vegetation diversity was found on the site with a large amount of alien plant species on the area where the Eucalyptus trees were removed. The alien plant species includes *Tagetes munita*, *Solanum sisymbriifolium*, *Solanum mauritianum* and regrowth of pine trees. Wetland plant species were found in the drainage line that includes grass and sedges species, rushes (Juncaceae) and bulrushes. The agricultural fields were covered with grass species that are used for fodder. Remains of the sugarcane fields were found in some areas.

## 5.6 Fauna

The Savanna Biome supports a rich and diverse number of animals due to large variations in soil types and topography, creating suitable habitats for various plants and animals. The transformed nature and the agricultural fields make the occurrence of larger mammals highly unlikely. Possible terrestrial fauna in this area would be small non-habitat specific species in the form of small mammals, birds, reptiles and amphibians. Several species of small to medium sized mammals will utilize the natural habitats on the property (Appendix 3, Table 4). The largest species expected to be present are common duiker, red duiker and bushbuck.

### **5.7 Visual**

Due to the agricultural activities and existing dam, no or insignificant visual impact is foreseen for the proposed development of the 2 dams.

### **5.8 Cultural & heritage sites**

The possibility of cultural and heritage sites are very low due to the existing activities on the proposed development area. It is recommended that an archaeology assessment has to be done by an registered archaeologist.

### **5.9 Socio-economic condition**

The proposed development of the dams will create temporary jobs and the availability of irrigation water for the planned macadamia orchards will create temporary and permanent jobs. It will also improve the economy of Barberton.

## 6. ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

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### 6.1 KEY ISSUES IDENTIFIED

Key issues identified within the proposed project were:

- Environment
- Social issues

### 6.2 ANTICIPATED IMPACTS AND RECOMMENDATIONS

#### 6.2.1 ENVIRONMENT

#### 6.2.2 Topography

- **Anticipated impacts:**

Currently the proposed development area is vacant and is situated on an area previously used for agricultural activities. The area occupies a northeast facing valley slope that constitutes a valley bottom and valley foot slope to mid slope within the broader landscape. Although it is expected that the erosion potential is low, the short inclines with the gentle to moderate slope of 8-9% can be prone to erosion if the area is cleared. The possibility of erosion is **LOW** during the construction phase if areas to be developed are cleared and left bare for more than 7 days.

- **Recommendations:**

Sensitive areas such as the valleys and the riverine areas should be rehabilitated after the development of the dam. Only the planned developed areas may be cleared from vegetation. If needed, sandbags can help stabilize the possible eroded areas.

#### 6.2.3 Geology & Soils

- **Anticipated impacts:**

The proposed project will have a potential to encourage avenues for erosion in the footprint of the site during the construction and post construction phases. Intensive utilisation of service and access roads by construction vehicles may cause loss of stability of road surfaces which will result in soil erosion through wind and surface water run-off. Occasional deviation from the access and service roads by heavy construction machinery might result in most of the road-side vegetation being trampled thereby disabling the roots in their binding effect on the soil. This will enable surface run-off to cut the edges of the roads into undesired and uneven slopes. Newly created access roads might encourage erosion if not properly designed especially if located on slopes.

- **Recommendations**

It is imperative that movement of equipment and machinery be restricted to designated roads to access the site. Newly established access roads during the construction phase should be designed in such a way that steep slopes are avoided. If unavoidable, surface run-off humps should be made to direct the flow into the river, drainage lines and vegetated surfaces in mitigation against soil erosion.

Unused/abandoned roads or disturbed terrains should be tilled and re-seeded with local vegetation during rehabilitation. Excavated areas should be backfilled to avoid unnecessary accumulation of surface water and high velocity overflow. Disturbed steep slopes should be supported with surface rock gladding or vegetation. Stipulations of the Environmental Management Programme (EMPr) should be adhered to during the construction phase of the project until decommissioning.

#### **6.2.4 Flora and Fauna**

- **Anticipated impacts:**

The main conservation concern is the loss of flora and fauna, especially wetland vegetation and protected species, during construction of the dams. Vegetation removal will also be required for the purpose of construction. Impacts on both fauna and flora will be inevitable and this will result in habitat fragmentation and ultimate loss of a fair amount of vegetation and displacement of faunal species surviving in that particular habitat. A variety of bird species, reptiles and mammals are nomadic in the area and during construction displacement of terrestrial animals, insects and reptiles might occur. Also, the construction crew will be tempted to kill animals (snakes and reptiles) when they come across them, to hunt down birds and mammals, as well as felling trees to make firewood. Construction of the dams will have an impact on the vegetation. Deviation of heavy machinery from designated access roads might account for most of the vegetation being trampled thereby destroying the habitat of smaller faunal species. Due to the existing agricultural fields, the dam and eucalyptus plantation on the proposed development area, the loss of vegetation will be minimal or insignificant. An ecologist will still assess the area for possible rare and endangered species.

- **Recommendations:**

The owner should stick to the civil engineer's designs and recommendations. There is a variety of reptiles, amphibians, insects, mammals and birds that occur in this type of habitat. Vegetation removal should be restricted to areas where the development is to take place and undesired tree felling or vegetation removal should be avoided at all costs. Construction workers should be discouraged from killing of animals and birds for relish as this might interfere with the livelihood of the ecosystem and will encourage poaching. Activities associated with the construction should have an element of conservation through avoiding undesired destruction of wildlife within the site.

#### **6.2.5 Surface and Ground Water Quality**

- **Anticipated Impact:**

The proposed development is in an unnamed stream that crosses the proposed site from the south-western high lying area of the property in a north-eastern direction towards the Suid Kaap River. Although the proposed development will be in an area that is an existing *Eucalyptus* plantation and agricultural fields, development in and across watercourses may pose an impact on the hydrological function of the watercourse and may also be affected by flooding. Agricultural activities can impact the water quality of the stream, dam and Suid Kaap River. Waste has a negative impact on the surface water.

- **Recommendations:**

A storm water management plan will mitigate all possible negative impacts. A fertilizer program will minimize the impact on the water quality of the stream and Suid Kaap River. Waste management must be part of the management of the agricultural activities to prevent waste blowing into the stream, dam or Suid Kaap River or any other water bodies.

### **6.2.6 Air Quality**

- **Anticipated impacts:**

Construction activities on site will lead to noise and dust from construction vehicles when they move in and out of the development site for excavation, loading, hauling and dumping of construction materials. Because of the temporary nature of site clearance, the impact is **LOW or INSIGNIFICANT**.

- **Recommendations**

There are no recommendations.

### **6.2.7 Noise Pollution**

- **Anticipated impacts:**

Current noise levels of the area are typical of agricultural areas and the sources noises are mainly agricultural equipment, traffic and household noise, etc. Noise levels will not be affected from what they are at present, the noise from construction activities will only be present during that phase, and however, it will be minimal.

- **Recommendations**

Construction vehicles should be serviced regularly and be kept in a good working condition at all times to prevent them from making high pitched roaring sounds. Construction has to be during working hours – 8:00 until 17:00. If it is necessary that construction has to be done after working hours, neighbours have to be notified and permission has to be given by the neighbours.

### **6.2.8 Visual Impact**

- **Anticipated impacts**

The area where the proposed activities will take place is largely agricultural; therefore no negative impacts on the visual aesthetics are anticipated.

- **Recommendations**

Fast growing indigenous trees can be planted to mitigate any possible negative visual impact on the borders of the property.

### **6.2.9 SOCIAL ISSUES**

- **Anticipated impacts:**

It is anticipated that the development will have far reaching positive impacts to the local society and community such as availability of temporary and permanent job creation during the construction phase.

A summary of the key issues that were identified in the Draft Basic assessment phase is summarised in Table 3. It includes the potential impacts and if specialist investigations were needed.

**Table 2: Issues identified, their potential impacts and recommendations for specialist studies**

ISSUE	POTENTIAL IMPACT	RECOMMENDATIONS
<b>Topography</b>	Gentle to moderate slope (8-9%). Soil erosion very low Erosion possibility is higher if areas to be constructed are cleared and left bare for more than 7 days.	Only development areas may be cleared from vegetation. Cleared areas have to be constructed on within 7 days and/or have to be re-vegetated within 7 days to prevent erosion of bare areas. <u>Recommended Specialist assessments</u> <ul style="list-style-type: none"> <li>• Civil Engineer &amp; dam stability</li> <li>• Geotechnical Investigations.</li> </ul>
<b>Geology and soils</b>	Soil erosion very low Erosion possibility is higher if areas to be constructed are cleared and left bare for more than 7 days.	It is imperative that movement of equipment and machinery be restricted to designated roads to access the site. Newly established access roads during the construction phase should be designed in such a way that steep slopes are avoided. If unavoidable, surface run-off humps should be made to direct the flow into the Crocodile river and vegetated surfaces in mitigation against soil erosion. <u>Recommended Specialist assessments</u> <ul style="list-style-type: none"> <li>• Civil Engineer &amp; dam stability</li> <li>• Geotechnical Investigations.</li> </ul>
<b>Surface &amp; Ground Water quality</b>	Storm water can change the banks of the stream and has a negative impact on the aquatic life. Polluted surface water can have a negative impact on the aquatic life. Waste can impact the water quality of the stream and river. Over fertilising of agricultural fields can have a negative impact on the stream, dam or river	A storm water management plan, a waste management plan and a fertilizer program needs to be finalised to incorporate possible mitigations. <u>Recommended Specialist assessments</u> <ul style="list-style-type: none"> <li>• Wetland Delineation.</li> <li>• Ecology.</li> </ul>
<b>Flora</b>	The main conservation concern is the loss of flora especially protected species, during development and operational phase.	A Biodiversity assessment was conducted. <u>Recommended Specialist assessments:</u> <ul style="list-style-type: none"> <li>• Wetland Delineation.</li> <li>• Ecology.</li> </ul>
<b>Fauna</b>	High levels of human activity will be associated with the development these activities pose several different risks to the fauna of the site, including collisions with vehicles, fires, collecting and disturbance. These risks will be very high during the construction phase and decrease during the operational phase.	All construction and maintenance vehicles must stick to properly demarcated and prepared roads. Off-road driving should be strictly prohibited Fauna must have 'right of way' on the roads. Littering should be strictly forbidden and waste generated by staff or at the compound should be disposed of in an appropriate manner, preferably off-site. <u>Recommended Specialist assessments</u> <ul style="list-style-type: none"> <li>• Wetland Delineation.</li> <li>• Ecology.</li> </ul>
<b>Visual</b>	Indigenous trees can be planted to mitigate any possible negative impact. No significant impact is anticipated.	<b>No additional studies required.</b>
<b>Air quality</b>	Dust can be created during the construction phase. No significant impact is anticipated.	<b>No additional studies required.</b>
<b>Noise pollution</b>	Noise can be created during the construction period.	Noise levels will not be affected from what they are at present, the noise from construction activities will only be present

ISSUE	POTENTIAL IMPACT	RECOMMENDATIONS
		during that phase, and however, it will be minimal. <b>No additional studies required.</b>
<b>Cultural &amp; heritage sites</b>	The possibility of cultural and heritage sites are very low due to the existing activities on the proposed development area. It is recommended that an archaeologist do an assessment.	<u>Recommended Specialist assessments</u> <ul style="list-style-type: none"> <li>• Heritage</li> </ul>
<b>Socio-economic</b>	The project will have a positive impact, it will create work opportunities and housing facilities.	<b>No additional studies required</b>

It is important to note, however, that the EIA Team has identified five specialist assessments, which should be undertaken to provide the EAP with the required level of information to undertake an integrated assessment. The proposed specialist studies are as follows:

- Wetland Delineation.
- Ecology.
- Heritage
- Civil Engineer & dam stability
- Geotechnical Investigations.



## 7. PUBLIC PARTICIPATION PROCESS

### 7.1 Background

The public participation process was followed according to Chapter 56 of the EIA Regulations, 2010. Potential interested and/affected parties were informed of the proposed development by;

1. Placing an advertisement in the local newspaper.
2. Fixing site notices on the property boundaries,
3. Distributing letters and background Information Documents (BIDs) to adjacent property owners.
4. Informing relevant authorities and departments about the proposed development.

The public participation process is being undertaken in accordance with the EIA Regulation R543, 2010 section 54 - 57. The involvement of I&AP encourages them to comment during the Draft BA phase of the project. This process also identifies issues in order to enhance the social and environmental benefits, whilst minimizing social and ecological costs to the project.

Public participation gives I&AP's the opportunity to raise their concerns regarding the proposed development. In terms of EIA Regulations, R543, 2010, section 55, a register of all I&AP has to be kept. According to Section 56(1) a registered I&AP is entitled to comment in writing on all written submissions including draft reports that was made available to the competent authority by the applicant. I&AP were informed and involved from the initiation to promote participation and transparency.

### 7.2 Methodology

#### 7.2.1 Identification of Interested and Affected Parties (I&AP's)

The key I&AP's were identified and registered. The key I&AP's includes different Government Departments, the District Municipality and the neighbouring land owners (100 m from the proposed project). See Figure 3.

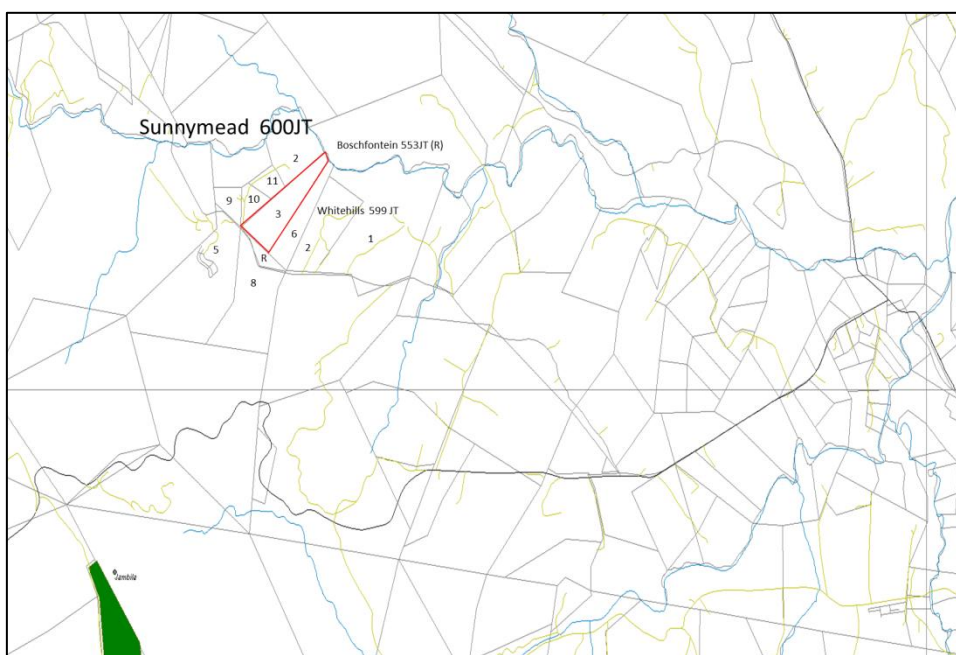


Fig 3: Landowners 100m from the proposed activity.

Table 3: Persons register as I&amp;AP.

Neighbouring Farm	Contact Person	Contact details
Sunnymead 600JT (Ptn 2)	Mashinini Mijwayeli Foughbran	T: C: E:
Sunnymead 600JT (Ptn 5)	Sappi Southern Africa LTD	T: C: E:
Sunnymead 600JT (Ptn 6)	Etindziweni Communal Prop Association	T: C: E:
Sunnymead 600JT (Ptn 8)	Bedrock Mining Support PTY LTD	T: C: E:
Sunnymead 600JT (Ptn 9)	MRB Ondernemings PTY LTD	T: C: E:
Sunnymead 600JT (Ptn 10)	Entindziweni Communal Prop Association	T: C: E:
Sunnymead 600JT (Restant)		T: C: E:
Boschfontein (Ptn 85)		T: C: E:
Whitehills 599JT (Ptn 1)	Ntaba Mhlophe Communal Trust	T: C: E:

Table 4: Register of Government Departments

Department	Person	Contact details
Department of Economic Development, Environment and Tourism (EIA Section)	Robyn Luyt	C: E: <a href="mailto:rluyt@mpg.gov.za">rluyt@mpg.gov.za</a>
Department of Agriculture, Forestry and Fishery (DAFF)	Love Shabane	T: 013 754 0734 C: 082 4284480 E: <a href="mailto:loves@nda.agric.za">loves@nda.agric.za</a>
Department of Water Affairs (DWA)	Sampie Shabangu	T: 013 759 7419 C: E: <a href="mailto:shabagus2@dwaf.gov.za">shabagus2@dwaf.gov.za</a>
Umjindi Local Municipality		T: C: E:
Ehlanzeni District municipality (EDM)	Louw Winterbach	T: 013 759 8500 C: E: <a href="mailto:lwinterbach@ledc.gov.za">lwinterbach@ledc.gov.za</a>
MTPA	Camilla	T: C: E:

### **7.2.2 Background Information Document (Bid)**

The main objective of the BID is to inform and introduce the proposed project to any affected and interested parties. A BID was distributed to all neighbours within a 100m radius. See attached appendix C for the BID

### **7.2.3 Advertisement**

An advertisement was placed in the **Barberton Times on Wednesday, 14 May 2014** to announce the proposed development and to provide the public the opportunity to register as I&AP. See attached appendix C

### **7.2.4 Site Notices**

Laminated site notice (60 X 42 cm) were placed at key points along the proposed development site on the 14 May 2014. See attached appendix C and appendix B

### **7.2.5 Issues and Responses**

Environmental issues associated with the proposed project will be recorded and those which have to be considered a risk will be addressed.

## 8. PLAN OF STUDY FOR EIA

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The plan of study for EIA process has been developed as per EIA Regulations guidelines. This Plan of Study for the EIA process outlines the manner in which the various activities will be undertaken in accordance with the EIA Regulations promulgated in terms of NEMA. Specifically, the plan provides:

- A description of the activities that will be undertaken as part of the EIA process, including any specialist reports or specialized processes, and the manner in which such tasks will be undertaken.
- An indication of the stages at which the competent authority will be consulted.
- A description of the proposed method of assessing the environmental issues and alternatives, including the option of not proceeding with the activity.
- Details of the public participation process that will be undertaken during the impact assessment.

### 8.1 Tasks to be performed:

This section provides a description of the tasks that will be undertaken as part of the EIA process, including any specialist reports or specialised processes and the manner in which such tasks will be undertaken. The EIA process will be undertaken in 5 main stages which include.

#### 8.1.1 Approval of the Plan of Study for the EIA

The Plan of Study will be submitted for approval by MDEDET.

#### 8.1.2 Specialist Assessments

Five specialist assessments were identified, which should be undertaken to provide the EAP with the required level of information to undertake an integrated assessment. The proposed specialist studies identified are as follows:

- Wetland Delineation.
- Ecology.
- Heritage
- Civil Engineer & dam stability
- Geotechnical Investigations.

#### 8.1.3 Impact assessment evaluation

The following was done to determine possible impacts:

- determine the current environmental conditions (i.e. baseline) against which to assess impacts;
- determine the future changes in the receiving environment baseline if the project does not proceed;
- an understanding of the proposed activity in sufficient detail; and
- all findings from the Basic Assessment process was taken into account.

The classification of an issue as a '**key issue**' during the Basic Assessment phase does not necessarily imply that an impact of high significance will result. The significance of the impact can only be ascertained once a specialist

assessment has been conducted. After such an assessment, it is possible that a **key issue** may turn out to have an impact of **low** or **no** significance.

The methodology for assessing impacts and assigning significance to the key issues is according to “Guideline 5: Assessment of alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006” published by DEAT in June 2006. See Table 5 for the description and prediction of the impacts.

Table 5: The description and prediction of the impacts include the following components

<b>Nature of impact</b>	<b>Describes the type of effect that a proposed activity would have on the environment (“what would be affected and how?”)</b>	
	indicates whether the impact is direct, indirect or cumulative;	
	indicates whether the impact occurs during the construction, operations or decommissioning phases of the project.	
<b>Magnitude / Intensity of the impact</b>	<b>Low</b>	where no environmental functions and processes are affected
	<b>Medium</b>	where the environment continues to function but in a modified manner
	<b>High</b>	where environmental functions and processes are altered such that they temporarily or permanently cease
<b>Extent / location</b>	<b>whether the impact would be site specific and limited to the immediate area of the development site</b>	
	<b>local</b>	limited to within approximately 5km of the site
	<b>regional</b>	Limited to the region
	<b>National/ international</b>	National impact
<b>Duration</b>	<b>the lifetime of the impact, whether the impact is permanent or reversible</b>	
	<b>short-term</b>	(0 – 5 years),
	<b>medium-term</b>	(5 - 15 years),
	<b>long-term</b>	(>15 years but where the impacts would cease after the operation of the site); and/or whether the impact is intermittent or continuous.
<b>Probability</b>	<b>considers the likelihood of the impact occurring</b>	
	<b>improbable</b>	low likelihood
	<b>probable</b>	distinct possibility
	<b>highly probable</b>	most likely
	<b>definite</b>	impact would occur regardless of prevention measures
<b>Significance</b>	Based on a synthesis of the above predictions, the significance of the impact shall be evaluated as follows:	
	<b>Low</b>	Where the impact would not have an influence on the decision or require to be significantly accommodated in the project design.
	<b>Medium</b>	Where it could have an influence on the environment which would require modification of the project design or alternative mitigation.
	<b>High</b>	Where it could have a ‘no-go’ implication for the project unless effective measures are taken to avoid or mitigate the impact.

The degree of confidence with respect to the assessment of significance in the prediction of the impacts is based on the availability of information. The significance of impacts was evaluated **before** mitigation was suggested (“as predicted” impacts). Most impacts are mitigated or will have a low impact after mitigation. The predicted impacts before mitigation were analysed and summarised in Table 4. Also summarised is if the impacts will be positive or negative impacts.

### 8.1.4 Public Participation

The Draft Scoping report is available for 6 weeks (40 days). Any relevant comments from the I&AP's will be incorporated in the Final Scoping Report for the DEDET to review.

### 8.1.5 Authority involvement in the EIA Process

The EIA process has an open participatory approach which means all available information has to be assessable and available for any person that may be impacted by the proposed development. All information must be communicated in such a way that stakeholders could understand the information and give comments on the information. Sufficient time for comment must be allowed. The EIA process comprises of 4 phases which is set out in Figure 4. Take note of the authority involvement as indicated in orange.

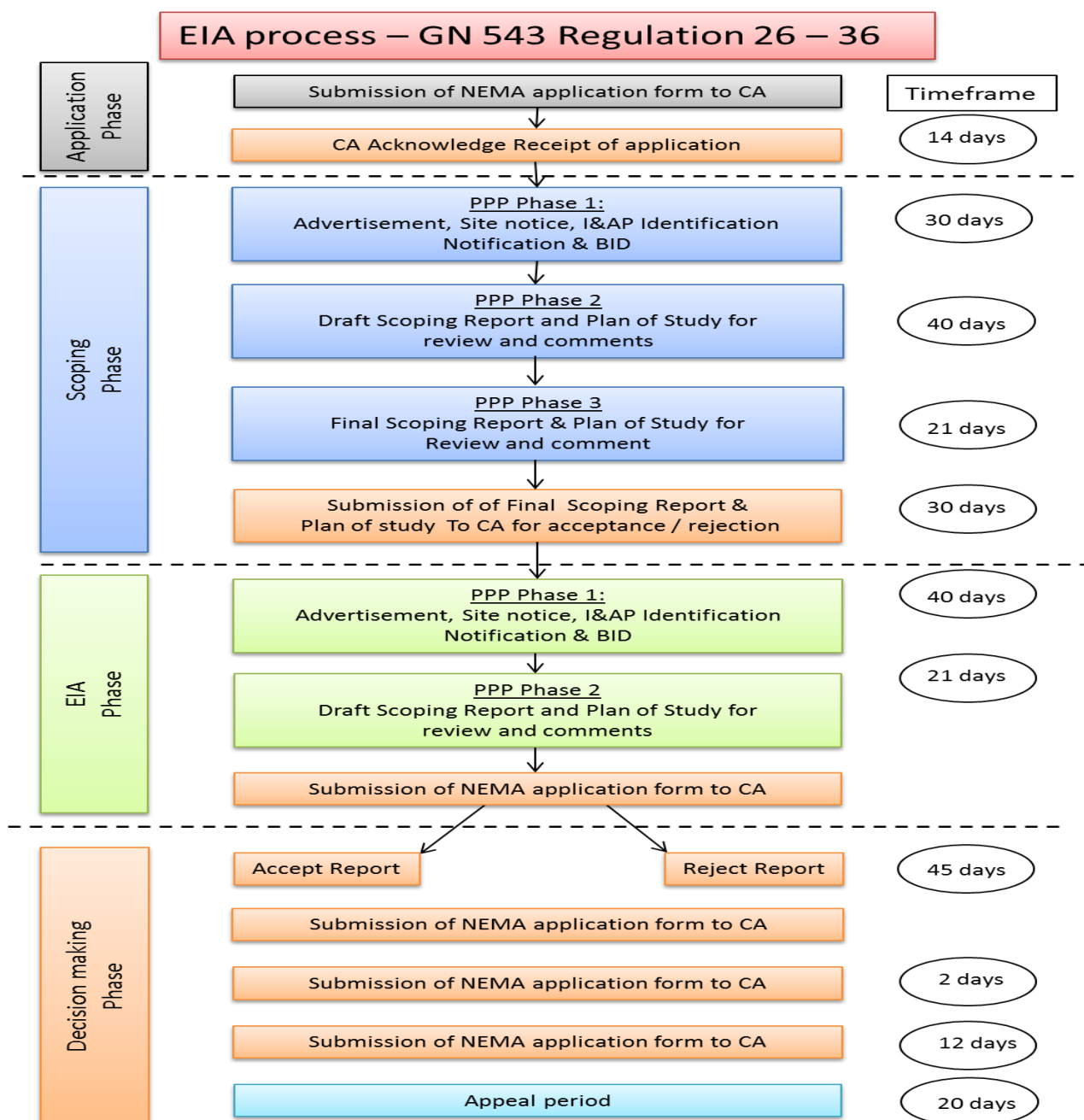


Fig 4 Schematic flow diagram of the EIA Process

## 9. CONCLUSIONS AND RECOMMENDATIONS

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From the analysis of site impact assessments, the proposed development will have the minimal impacts ecologically and socially. More clarity of the environmental impacts and the management and mitigations thereof will be addressed by the specialists. The negative impacts that have to be considered a risk are:

1. Impact of areas that are not rehabilitation and lay barren for more than 7 days after construction.
2. Erosion.
3. Storm Water and waste Management plan have to be compiled as well as a fertilizer program of the macadamia orchard.
4. Protection of natural/pristine vegetation and fauna species in the natural areas.
5. Mitigate visual impact by planting indigenous vegetation.
6. Prevent noise pollution in the construction and operational phase.
7. Surface and Groundwater pollution.

This project could have a positive social and social-economic impact on the community with minor negative impacts on the environment if mitigations are implemented. This project can have positive impacts on the natural, social and social –economic environment and is highly recommended by the EAP. Mpumalanga, Mbombela Local Municipality and local communities will benefit from this project. The positive impacts are:

1. The economic benefits for the people in and around Mbombela Local Municipality.
2. Job opportunities.
3. The proposed development will be developed on previous agricultural fields and minimum impact on the flora and fauna are foreseen.
4. Biodiversity can be improved if indigenous vegetation will be used for landscaping of the development.
5. An extra income for some of the households involved with the project during the construction phase.

## 10. REFERENCES

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## **APPENDIX A**

### **Locality map and Site Plans**

**APPENDIX B**  
**Site Photographs**

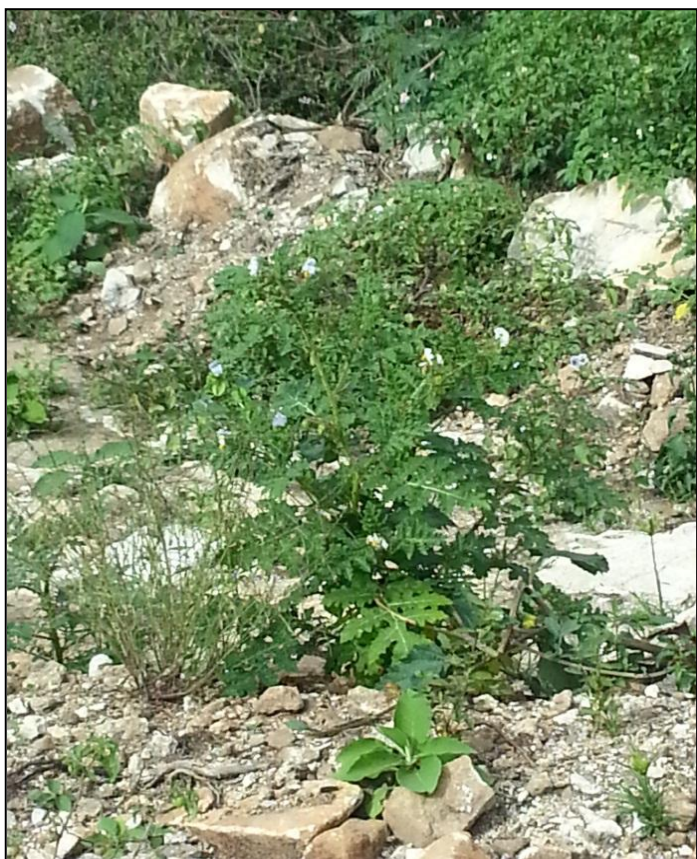




*Eucalyptus* trees & *Pteridium* spp  
in the stream



Removed *Eucalyptus* trees in the  
stream



*Solanum* *sisymbriifolium* and  
*Solanum* *mauritanium*

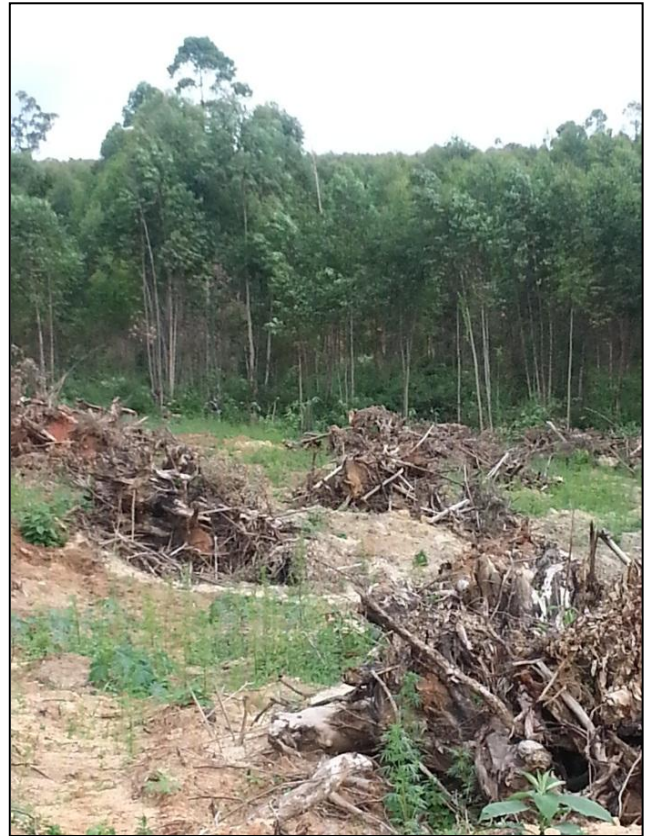


*Tagetes* *munita* on disturbed area





The area where the Eucalyptus trees were removed



The area where the Eucalyptus trees were removed



Remains of the sugarcane fields



The Eskom electrical pole for the pump station at the dam





Eucalyptus trees next to dam



Alien vegetation in the drainage line



Existing dam

## **APPENDIX C**

### **Public Participation Process**

Site notices

Newspaper advertisement: 14 May 2014

Copy of BID

**APPENDIX D**

**Other Information**

Title Deeds