



Draft Environmental Management Plan for Proposed Middelburg Dam Precinct Plan, Steve Tshwete Local Municipality Mpumalanga Province

Draft Environmental Management Plan

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CORE Environmental Services

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1. OVERVIEW OF THE PROJECT

1.1 Introduction

Steve Tshwete Local Municipality is proposing the development of the Middelburg Dam Precinct Plan. This development will require the clearance of approximately 18.7 hectares of vegetation on a portion of portion 87 of the farm Rondebosch 403-JS and a portion of portion 65 of the farm Rondebosch 403-JS. 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 for the proposed development.

Core Environmental Services was appointed to apply for the EA by means of conducting a Basic Environmental Authorisation process as regulated within General Notice Regulation 982, 2014 (as amended in 2017).

1.2 Location

The proposed site is located on a portion of portion 87 of the farm Rondebosch 403-JS and a portion of portion 65 of the farm Rondebosch 403-JS, approximately 10km East of Middelburg, within the Steve Tshwete Local Municipality, Mpumalanga Province.

Coordinates of portion 87 of the farm Rondebosch 403-JS:

25° 46'17.45"S

29° 33'05.07"E

Surveyor General Code: T0JS00000000040300087

Coordinates of portion 65 of the farm Rondebosch 403-JS

25° 46'22.46"S

29° 32'56.50"E

Surveyor General Code: T0JS00000000040300065

Please refer to the locality map below, Figure 1 and 2 below.

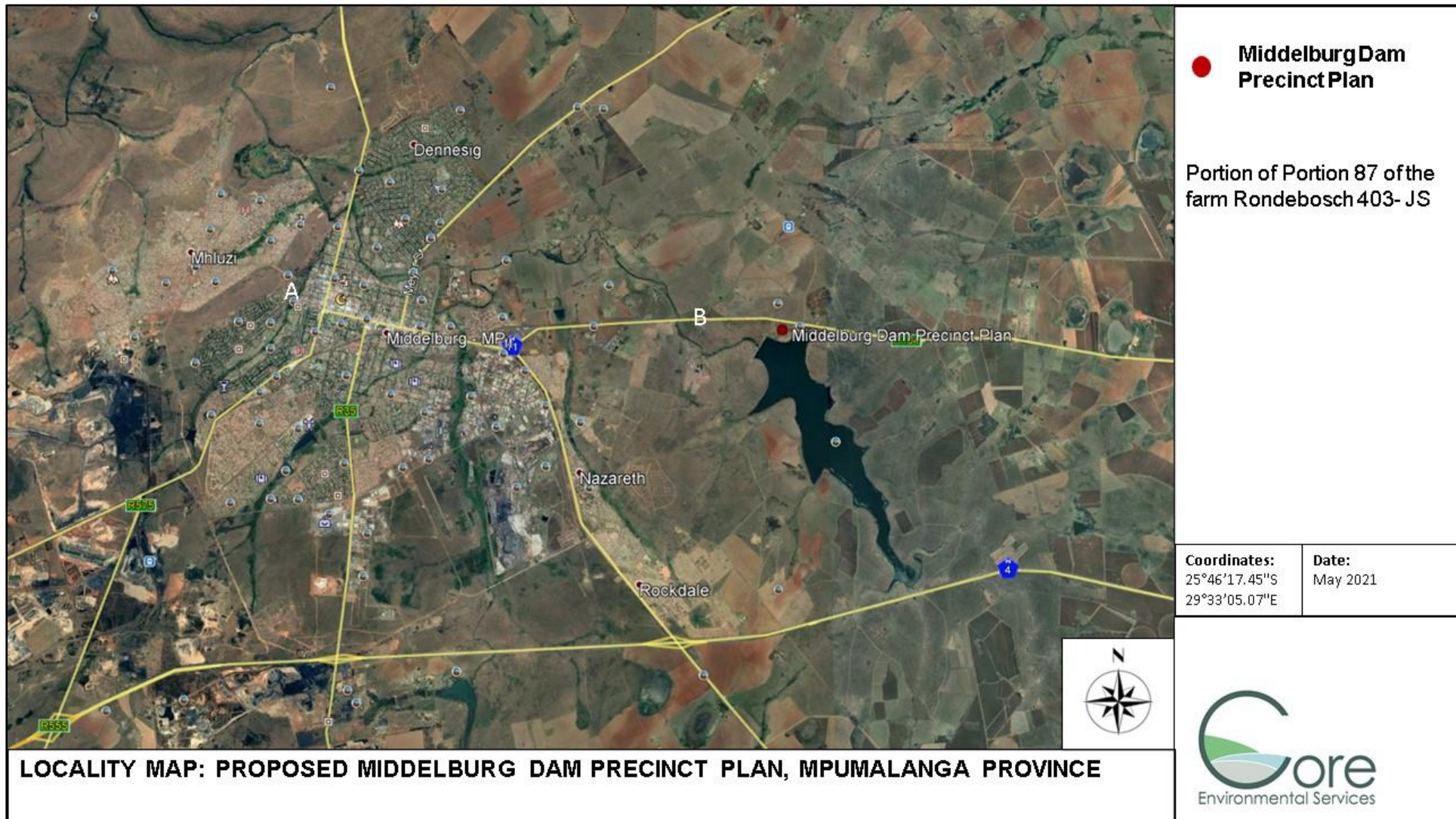


FIGURE 1: LOCALITY MAP – PROPOSED MIDDELBURG DAM PRECINCT PLAN

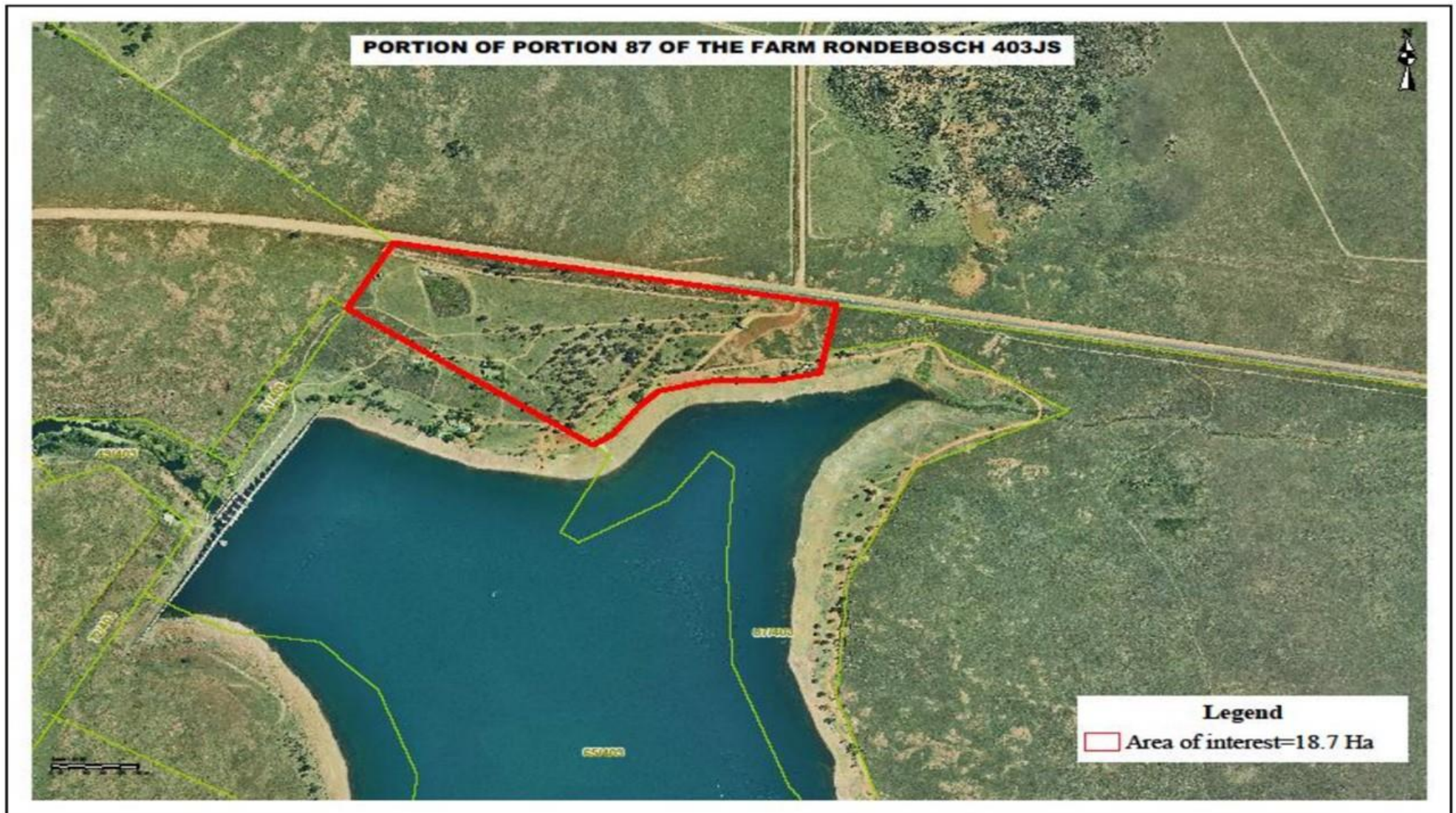


FIGURE 2: ZOOMED LOCALITY MAP PROPOSED STUDY AREA FOR MIDDELBURG DAM PRECINCT PLAN

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 Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as 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>Steve Tshwete Local Municipality 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)	<p>The Act provides for the health and safety of people at work and for the health and safety of people using plant and machinery.</p> <p>During establishment, work must be conducted with strict adherence to the Occupational Health and Safety Act 85 of 1998.</p>
National Heritage Resources Act, 1999 (Act No 25 of 1999)	<p>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.</p> <p>According to the National Heritage Resources Act 25 of 1999, a Heritage Impact Assessment is required when more than 5000m² are to be transformed. Accordingly, a Heritage Impact Assessment was conducted as part of the Environmental Assessment Process and the finding thereof are described in Section 4 and 7 respectively.</p>
Steve Tshwete Local Municipality Integrated Development Plan (IDP) (2017 - 2022)	<p>The primary objectives of the IDP are to foster economic growth that creates jobs and improve infrastructure within the province.</p> <p>Job opportunities will be created by the proposed tourism development which supports economic growth within the area.</p>

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 983, Activity 12, 2014 (as amended in 2017):

The development of infrastructure or structures with a physical footprint of 100 square meters or more;

Where such development occurs-

- (a) within a watercourse*

GNR 983, Activity 19, 2004 (as amended in 2017)

The infilling or depositing of any material of more than 10 cubic meters into, or the dredging excavation, removal or moving of soi, sand, shells, shell grit, pebbles of rock of more than 10 cubic meters from

(i) a watercourse

1.5 Description of the project

The following land use activities are proposed for the Middelburg Dam Precinct Plan and are subject to amendment as part of the refinement of the precinct plan layout:

- Lodge and/or accommodation
- Conferencing facilities
- Caravan Park
- Mini golf and/or country estate.

Currently, the project area is utilised as a resort and subsequently a portion of the current camping facilities will remain.

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 property. 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. The Middelburg Dam Precinct Plan 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.

The Steve Tshwete Local Municipality 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 Steve Tshwete Local Municipality 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 CONSTRUCTION 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	Construction	Spreading of invasive plant species Clearing additional vegetation	Clearance of vegetation for footprint of Middelburg Dam Precinct Plan	Objective(s): a) Elimination of invasive plant species. b) Protection of indigenous vegetation of surrounding areas as well as fragmented grassland of medium sensitivity which must be protected from development. c) Protection of fauna Target(s): a) Where possible, large trees must be retained on site; b) Areas demarcated as fragmented grassland of	Visual Inspection and yearly external environmental audit	On-going, continuous monitoring by The Steve Tshwete Local Municipality 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 township

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>medium sensitivity must be protected from development. No buffer zone is however required.</p> <p>c) Spoil material may not be pushed unto adjoining properties</p> <p>d) Workers to be discouraged from killing animals and birds for relish;</p> <p>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.</p> <p>f) Where alien invasive plants occur, they must be uprooted, cut and /or chemically treated. (Use only approved chemicals);</p> <p>g) Implement an alien vegetation control programme;</p> <p>h) No wild animal may under any circumstance be handled, removed or be interfered with</p> <p>i) Spoil material may not be pushed into the natural habitats.</p>			

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
Air Quality	Construction phase	Dust generation	Clearance of vegetation Disturbance of soil Vehicle movement on and off site	Objectives: To minimise the impact of dust generated, on neighbouring land users 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	Visual inspection and complaints received from neighbouring land users.	On-going, continuous monitoring by The Steve Tshwete Local Municipality	No complaints from neighbouring land users No excessive dust generated during establishment activities
Water	Construction and operational phase	Irresponsible water use Water resource pollution	Construction activities near the Middelburg Dam Operation of leisure activities	Objectives: To minimise the impact on water resources and minimise water consumption Targets: a) Ensure that there are no leaking water pipes or taps on the property. b) Water use must be monitored and used sparingly; c) No activities, except for water-related recreational activities may take place within the 1:200-year flood line	Visual inspection and monthly monitoring of water usage.	Monthly by The Steve Tshwete Local Municipality	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
				<ul style="list-style-type: none"> d) Water-wise practices should be listed and recommended to visitors and staff e) No material and especially hazardous material may be stored or located within a 100m from the edge of the watercourse; f) No machinery may be washed within the Middelburg Dam; g) Temporary sanitation facilities must be provided during construction and such facilities must be located at least 100m from the edge of the dam; h) Management activities be focused on maintaining water quantity and quality and the integrity of natural habitat in the sub-catchment. 			
Flood events	Operational phase	Impact on infrastructure due to flood events	Operation of leisure activities	<p>Objectives:</p> <p>To prevent impacts on infrastructures due to flood events</p> <p>Targets:</p> <p>The Safety Evaluation Flood for the Middelburg Dam under worst case scenario where all the radial gates are closed, and the dam wall is overtopped will be the most</p>	Visual inspection	Annually by the site manager	No infrastructures below 1517.36m

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>conservative flood elevation for the proposed precinct development</p> <p>This elevation is 1517.36m and shown on the following flood line map. It is recommended that no development or infrastructure should be constructed below this level.</p>			
Sanitation and waste disposal	Construction and operational phase	Soil pollution Environmental pollution	<p>Personnel and tourist conduct</p> <p>Disposal of general waste</p> <p>Treatment of sewage</p>	<p>Objectives:</p> <p>To prevent pollution caused by improper sanitation and waste storage and disposal</p> <p>Targets:</p> <p>a) Littering on site and the surrounding area is prohibited.</p> <p>b) Adequate sanitary and ablutions facilities must be provided for construction workers – The facilities must be regularly serviced to reduce the risk of surface or groundwater pollution.</p> <p>c) General waste should be placed in water tight containers and disposed of on a regular basis</p> <p>d) Records of all waste taken off site and disposed of must be kept as evidence.</p>	Visual inspection	Daily by the site manager	No littering on site or pollution caused by improper storage and disposal of waste

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"> e) Building rubble must be re-used, where possible. f) Excess rubble must be disposed of at an appropriate site. g) Burning of waste material will not be permitted. h) Spillages of hazardous substances must be cleaned up using absorbent material provided in spill kits on site, and must be disposed of together with other hazardous material at a hazardous waste landfill i) Absorbent materials used to clean up spillages should be disposed of in a separate hazardous waste bin. j) The storage area for hazardous material must be concreted, bunded, covered, labelled and well ventilated. k) Employees to be provided with appropriate PPE for handling hazardous materials l) The sewage system must be properly managed, maintained and operated throughout the life of the project. m) During the operational phase there should be periodic inspections of the sewage systems to identify any system 			

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>failure which could lead to contamination of the surrounding environment.</p> <p>n) A waste management plan must be in place to ensure appropriate collection, processing and disposal of solid waste</p> <p>o) Reuse, recycling and separation-at-source of waste must be promoted</p>			
Soil	Construction and operational phase	<p>Soil erosion</p> <p>Soil contamination</p>	<p>Heavy rain/storms increasing the possibility of erosion</p> <p>Use of pesticides during establishment</p>	<p>Objective(s): To minimise soil erosion and soil contamination.</p> <p>Target(s):</p> <p>a) Measures must be taken to prevent soil erosion. This can 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 development. Areas cleared of vegetation must be rehabilitated</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 Monitoring	of	Performance Indicator
				<p>immediately after the establishment phase is complete</p> <p>c) Access roads used during the removal of vegetation, must be adequately rehabilitated after the establishment phase;</p> <p>d) Measures to reduce the velocity of water, must be taken on areas prone to erosion.</p> <p>e) Should there be any spillage of hazardous substances during the construction phase, soil must be removed up to a depth of 300mm and be disposed of at a registered hazardous waste disposal facility. Proof of such disposal must be kept on file.</p> <p>f) Topsoil to be stored separately and protected for rehabilitation purposes and for use in the landscaping.</p> <p>g) Sewage infrastructure must be inspected and</p>				

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
				maintained on a regular basis.			
All environmental aspects Health and safety	Construction	Various environmental, Health and safety impacts.	Personnel conduct	Objective: <ol style="list-style-type: none"> To ensure that personnel adhere to EMPr requirements; To ensure the health and safety of employees and surrounding landowners Target: <ol style="list-style-type: none"> Ensure that inductions are conducted, and all personnel have records that are up to date; Ensure that all training includes requirements of the EMPr. Take adequate precautions to ensure that fires are not started as a result of works on site. Do not permit any fires or open flames, especially during the dry season. Ensure that the site is equipped with adequate firefighting equipment. Take immediate steps to 	Visual inspection and inspection of records	On-going, continuous monitoring by The Steve Tshwete Local Municipality	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
				<p>extinguish any fire, which may break out.</p> <p>h) No open trenches are permitted without the use of demarcation tape.</p> <p>i) Secure storage of materials on site particularly hazardous material e.g. chemicals and fuels.</p> <p>j) Do not store any fuel or chemicals under trees.</p> <p>k) Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area.</p> <p>l) All necessary signage and traffic measures, such as speed limits, must be implemented for safe movement of vehicles to and from the site</p> <p>m) The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act, 1993 (Act No.85 of 1993) and the National Building Regulations</p> <p>n) Unauthorised access to high-risk areas must be restricted</p>			

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"> o) Dust suppression will need to be when and where required p) Ensure that the hazardous handling of equipment and materials is supervised and adequately instructed; and q) Adequate facilities must be available on site for the emergency treatment of staff and members of the public 			
Heritage	Establishment Phase	Disturbance of heritage resources or artefacts	Possible excavation activities	<p>Objective: Protection of heritage resources</p> <p>Target:</p> <ul style="list-style-type: none"> a) In the unlikely event that fossils are uncovered during construction then construction must cease within the immediate vicinity, a buffer of 30 m must be established, and a palaeontologist called in to inspect the finds. The palaeontologist must obtain a section 35(4) permit in terms of NHRA and Chapter IV NHRA Regulations, 	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 Monitoring	of	Performance Indicator
				<p>before any fossils are collected.</p> <p>b) If there are any new heritages resources are discovered during construction and operation phases of the proposed development, then a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the findings at the expense of the developer.</p> <p>c) If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required at the expense of the developer. Mitigation will only be carried out after the archaeologist or palaeontologist obtains a permit in terms of section 35 of the NHRA (Act 25 of 1999).</p>				

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
Traffic	Construction and operational phase	Traffic	Increase in Traffic	Objectives: To ensure that the increase in traffic does not affect the safety of residents Targets: <ol style="list-style-type: none"> Clear signs should be displayed along Von Brandis Street and entrance to the site indicating that it is a construction site. All necessary signage and traffic measures, such as speed limits, must be implemented for safe movement of vehicles to and from the site Caution to be taken to ensure construction vehicles are not parked in such a way as block through/passing traffic. Proper and adequate lanes to allow for ingress/egress to be provided. 	Visual inspection	On-going, continuous monitoring by The Steve Tshwete Local Municipality	No incidents recorded or reported.
Social	Establishment and operational phase	Employment	Employment opportunities	Objectives: To ensure that employment opportunities and social benefits are maximised. Targets:	As and when basis.	Whenever new labour is hired.	Job and contracting opportunities are afforded where feasible.

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
				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.			