



**De Beers Consolidated Mines (Pty) Ltd
Venetia Limpopo Nature Reserve Lodge
Final Basic Assessment Report**

LEDET Reference Number: 12/1/9/3-V56

NEAS Reference Number: LIM/EIA/0001210/2021

March 2021

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March 2021
AVDE Project Ref: 141-002

Prepared by: Suzanne van Rooy



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VERSION CONTROL

Alta van Dyk Environmental Consultants cc

Version: Draft

Approved by: Alta van Dyk

Signed:

A handwritten signature in black ink, appearing to read "Alta van Dyk".

Position: Environmental Specialist

Date: March 2021

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ABBREVIATIONS

BAR	Basic Assessment Report
BID	Background Information Document
CBA	Critical Biodiversity Areas
DAFF	Department of Agriculture, Forestry and Fisheries
De Beers	De Beers Consolidated Mines (Pty) Ltd
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
HCAC	Heritage Contracts and Archaeological Consulting
LC	Least Concern
LEDET	Limpopo Department of Economic Development, Environment and Tourism
LSA	Later Stone Age
mamsl	metres above mean sea level
MAP	Mean Annual Precipitation
MAPE	Mean Annual Potential Evapotranspiration
MLM	Musina Local Municipality
MSA	Middle Stone Age
NEM:BA	National Environmental Management: Biodiversity Act
NEM:PAA	National Environmental Management: Protected Areas Act
NEM:WA	National Environmental Management Waste Act
NEMA	National Environmental Management Act
NWA	National Water Act
OUV	Outstanding Universal Value
SAHRIS	South African Heritage Resources Information System
SCC	Species of Conservation Concern
SS	Significance Score
VLNR	Venetia Limpopo Nature Reserve
WHS	World Heritage Site
WMA	Water Management Area



LIMPOPO

PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF ECONOMIC DEVELOPMENT, ENVIRONMENT & TOURISM

BASIC ASSESSMENT REPORT - EIA REGULATIONS, 2014

Basic Assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

File Reference Number:

12/1/9/3-V56

NEAS Reference Number:

(For official use only)

Date Received:

Due date for acknowledgement:

Due date for acceptance:

Due date for decision

Kindly note that:

1. The report must be compiled by an independent Environmental Assessment Practitioner.
2. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
3. Where applicable **tick** the boxes that are applicable in the report.
4. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the Department of Economic Development, Environment and Tourism as the competent authority (Department) for assessing the application, it may result in the rejection of the application as provided for in the regulations.
5. An incomplete report may be returned to the applicant for revision.
6. Unless protected by law, all information in the report will become public information on receipt by the department. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.

7. The Act means the National Environmental Management Act (No. 107 of 1998) as amended.
8. Regulations refer to Environmental Impact Assessment (EIA) Regulations of 2014.
9. The Department may require that for specified types of activities in defined situations only parts of this report need to be completed. No faxed or e-mailed reports will be accepted.
10. This application form must be handed in at the offices of the Department of Economic Development, Environment and Tourism:-

<p>Postal Address:</p> <p>Central Administration Office Environmental Impact Management P. O. Box 55464 POLOKWANE 0700</p>	<p>Physical Address:</p> <p>Central Administration Office Environmental Affairs Building 20 Hans Van Rensburg Street / 19 Biccard Street POLOKWANE 0699</p>
<p>Queries should be directed to the Central Administration Office: Environmental Impact Management:-</p> <p>For attention: Mr E. V. Maluleke Mobile: 082 947 7755 Email: malulekeev@ledet.gov.za</p>	

View the Department's website at <http://www.ledet.gov.za/> for the latest version of the documents.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

YES	NO
-----	----

If YES, please complete the form entitled “Details of specialist and declaration of interest” or appointment of a specialist for each specialist thus appointed:

Refer to Appendix D1 for the signed copies of Details of specialists and declaration interest forms.

Any specialist reports must be contained in Appendix D.

1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail¹:

Project Description

De Beers Consolidated Mines (Pty) Limited (De Beers) is the owner of the Venetia Limpopo Nature Reserve (VLNR), located near Alldays in the Limpopo Province. De Beers' Venetia Diamond Mine is located in the south of the VLNR, but does not form part of the VLNR. De Beers would like to develop a 12-room lodge on the reserve to house Tier 1 management employees of De Beers visiting Venetia Mine. Refer to Figure 1 for the location map.

The proposed VLNR Lodge will include the following:

- Gravel access road (existing access road to be utilised)
- 12 rooms (24 people maximum)
- Central building (kitchen and dining area)
- Swimming pool and lapa
- Storeroom
- Electrical boundary fence
- Potable water storage (ABECO tank)
- 12 carport parking bay
- Reception and administrative office
- General waste storage facility
- Sewerage package plant
- Staff quarters and locker room to accommodate a maximum of 4 staff members
- Bird hide

Access

Access to the lodge will be via an existing gravel road that runs from the VLNR's Luna Gate from the D1559 district road, running on the eastern side of the VLNR.

¹ Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

Energy and lights

The Lodge will make use of both Eskom electricity and solar panel systems.

A new 11kV or 22kV overhead line will be constructed from the existing Eskom line approximately 1.5 km north east of the proposed VLNR Lodge development. To minimise visual impact, it is proposed to install and underground cable to a ground mounted transformer. The proposed line does not trigger any additional listed activities.

It is proposed to install a grid tied solar photovoltaic installation without batter backup to provide additional power for fridges, lighting and reducing required load from the supply authority during daytime.

Water

The lodge's estimated water use will be 150 L/person/day. Assuming a maximum number of people of 26, it is calculated that the maximum quantity of potable water required is 1 423.5m³/a, or 3.9m³/day. The potable water will be sourced from a recently drilled borehole.

Sewage

It is proposed to construct a 10Kℓ package plant for the treatment of sewage generated at the lodge. The main process used in the package plant is a standard activated sludge system, where the biochemical oxygen demand is broken down using air and bacteria, which grow in this medium. The bacteria grow naturally, and no additional bio-chemicals have to be added in the process. Effluent will align with water quality limits as specified in the National Water Act. The treated effluent will be used to irrigate natural vegetation around the Lodge. Sludge will be stored in the anaerobic zone and will be removed by an external services provider every 2 – 3 months if inflow remains at high levels. In practice sewage inflow will vary and duration for sludge generation will be lengthy.

General waste

General waste generated on site at the accommodation facility will be segregated at source and will be removed frequently off-site by an approved waste management contractor. Household and solid waste collection is centralised at a location alongside the kitchen area where waste containers are provided. Waste from bedrooms will be deposited by occupants of the rooms into municipal type refuse bins which are conveniently located at all bedroom clusters and refuse collection and disposal will be done by facilities management staff. An external service provider will service and empty the containers and dispose of the waste at an approved municipal waste disposal site.

Environmental related permits required

Triggered listed activities in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA) 2014 Environmental Impact Assessment (EIA) Regulations (as amended in 2017) is shown in Table 1 below. Activities in Listing 1 and 3 are triggered by the proposed development, and therefore a Basic Assessment environmental authorisation process is followed.

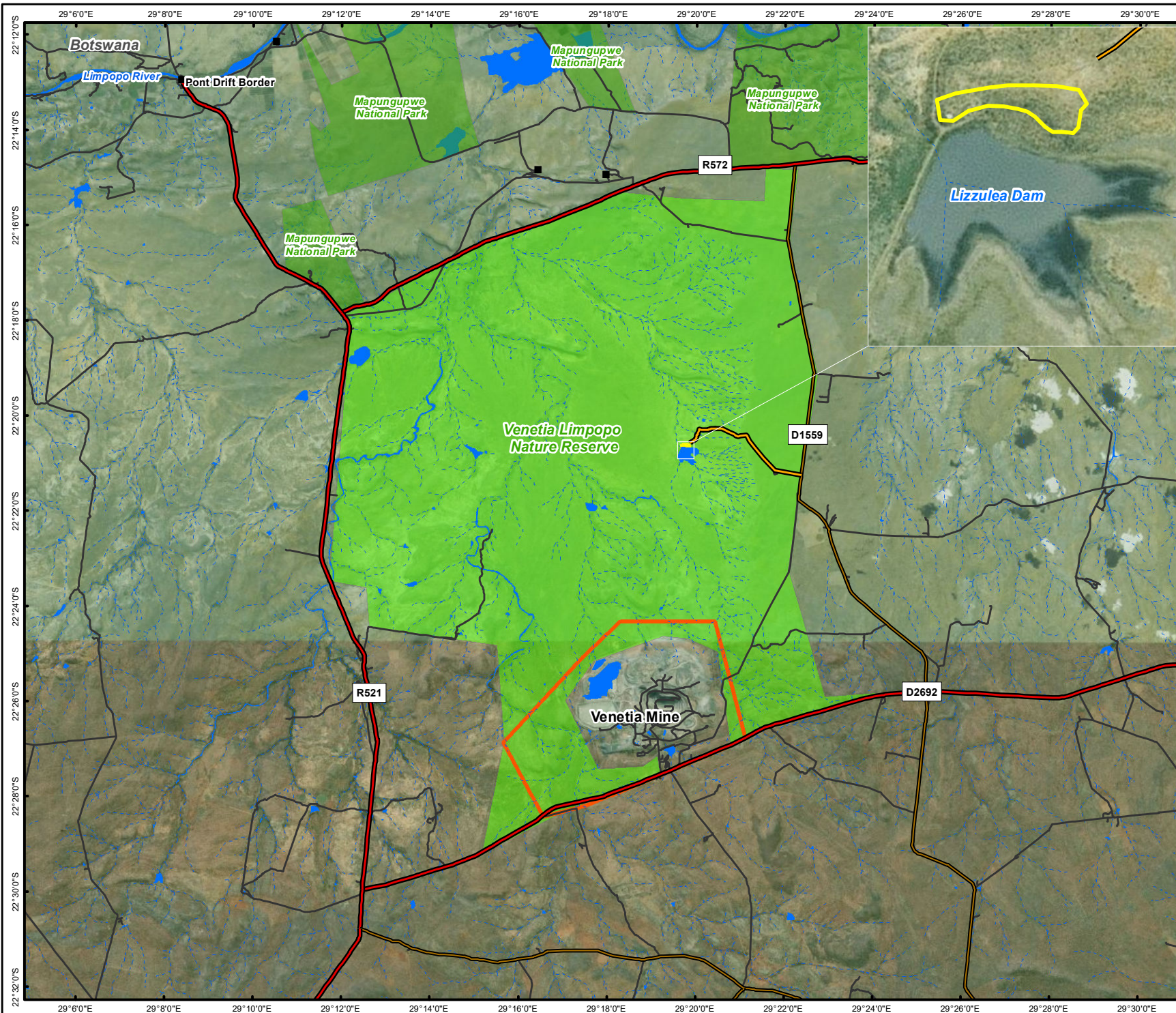
In addition, a Water Use Licence Application will be submitted in terms of the National Water Act (Act No. 36 of 1998) (NWA) as the following Section 21 water uses are triggered:

- (a) taking water from a water resource (abstraction of water from borehole)
- (c) and (i) impeding or diverting the flow of water in a watercourse, altering the bed, banks, course or characteristics of a watercourse (development of the lodge within 500m from a seep zone which created an artificial wetland area downstream from the Lizzulea Dam and development within 100m horizontal distance from the edge of the water course)
- (e) engaging in a controlled activity (irrigation with wastewater)

Table 1: Triggered Listed Activities for the VLNR Lodge

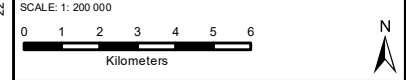
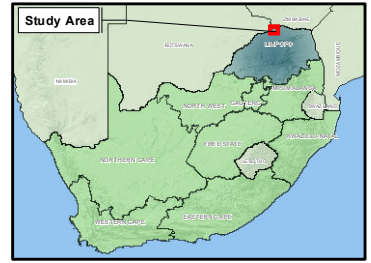
List and activity number	Listed activity	Description of activity
Listing 1, Activity 12 (ii)	The development of-	The proposed lodge will be partly located

List and activity number	Listed activity	Description of activity
	(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii) <u>infrastructure or structures with a physical footprint of 100 square metres or more;</u> where such development occurs- (a) within a watercourse; (b) in front of a development setback; or (c) <u>if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;-</u>	within 32m of a watercourse (Setoka River) and dam (Lizzulea Dam).
Listing 1, Activity 19	The infilling or depositing of any material of more than 10m ³ into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10m ³ from a watercourse;	Earthworks for lodge development near river/dam, development of a bird hide at Lizzulea Dam. Continual maintenance activities of the Lizzulea Dam wall and spillway.
Listing 1, Activity 27	The clearance of an area of 1 ha or more, but less than 20ha of indigenous vegetation, except where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Clearance of indigenous vegetation for development of the lodge (~1.8 ha).
Listing 3, Activity 6	The development of resorts, lodges, hotels, tourism or hospitality facilities that sleep 15 people or more.	Development of a lodge to sleep a maximum of 24 guests and 4 service staff.



Legend

- Venetia Mine
- Lodge area
- VLNR Lodge Access Road
- Main Road
- Secondary Road
- Other Road
- Perennial River
- Non-Perennial River
- Hydrological Areas
- National Park
- Venetia Limpopo Nature Reserve



TITLE:
VLNR Lodge Locality Map

CLIENT:
De Beers Consolidated Mines (Pty) Ltd

DATE: October 2020	PROJECT: VENETIA MINE
DRAWN: THURLLOW MAPPING	APPROVED: KP
MAP Venetia_Lodge_Locality_Map.mxd	REV: 0

Alta van Dyk Environmental Consultants cc (2011/059764/23)

VAT No: 4630259952
Tel: 012 940 9457
Fax: 086 634 3967
Cet: 061 403 2462

Projection: Transverse Mercator or CM: 29 Datum: WGS 84
Source: Chief Directorate National Geo-Spatial Information, DWA - NGA Geosites Inset: ESRI Data and Maps

SIZE:
A4

2. FEASIBLE AND REASONABLE ALTERNATIVES

“**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—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. The determination of whether site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the Department may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Paragraphs 3 – 13 below should be completed for each alternative.

Location alternatives

Various sites within the VLNR were considered by De Beers for the proposed location of the lodge. Refer to Figure 2 for an indication of the Lodge location options. A comparison table of the locations options is provided in Table 2. Only the proposed Lizzulea Dam site was further investigated in terms of specialist studies and an impact assessment, as this is the developer’s preferred site. All sites are located on De Beers’ property.

Table 2: Comparison table on VLNR Lodge location options

Advantages	Disadvantages
Van Zyl’s House	
<ul style="list-style-type: none"> • Close proximity to Venetia Diamond Mine • Good access road with no watercourse crossings • Availability of Eskom electricity • Existing borehole for potable water supply • Cellular network coverage 	<ul style="list-style-type: none"> • Limited space available for development • Currently forms part of Diamcor Mining accommodation agreement, but it has not been used in the past two (2) years • Situated down-wind of Venetia Diamond Mine operations
Rugen Area – located within mine boundary	
<ul style="list-style-type: none"> • Cellular network coverage • Close proximity to Venetia Diamond Mine 	<ul style="list-style-type: none"> • Operational noise from the Venetia Mine audible • Area ear-marked for 100-person accommodation facility planned by De Beers

Advantages	Disadvantages
Faure Base Camp	
<ul style="list-style-type: none"> • Cellular network coverage • Access to Eskom electricity • Access to Venetia Diamond Mine pipeline water for potable water supply • Access road via Musina/Ponddrift tar road 	<ul style="list-style-type: none"> • 50 – 60 minute travel time from Venetia Diamond Mine
Lizzulea Dam (preferred alternative)	
<ul style="list-style-type: none"> • Aesthetically pleasing spot for development • Area is sufficient for placement of individual units for privacy, yet in close proximity to one another • Existing access road • Close proximity to Venetia Diamond Mine (30 minute drive) • Cellular network coverage • Opportunity to use re-usable energy sources (solar panels) 	<ul style="list-style-type: none"> • Eskom power line – 1.5km from site • Access road to be upgraded

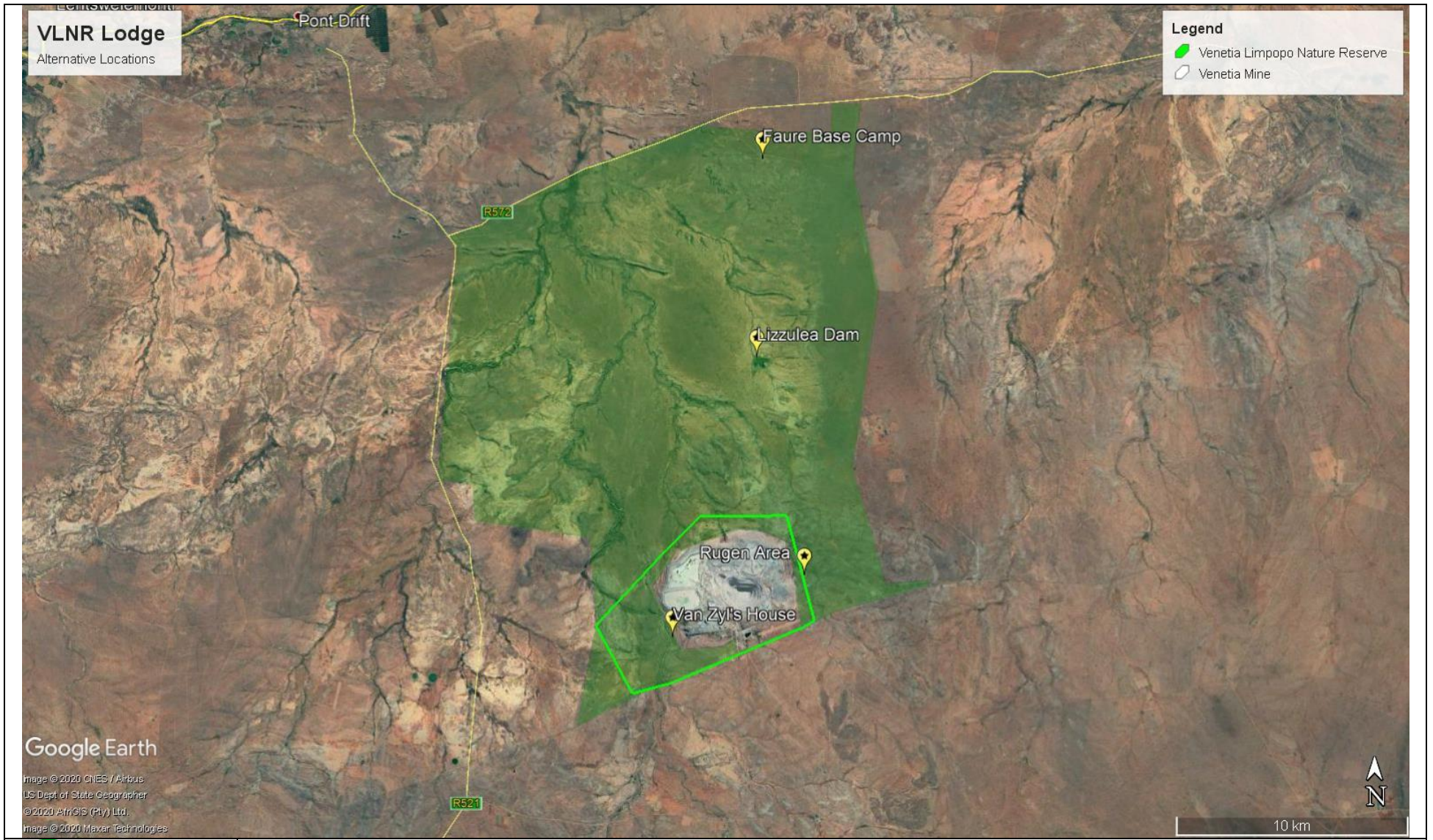


Figure 2: VLNR Lodge – Location of alternatives sites



Technology alternatives – sewage treatment and disposal

Two options were considered for sewage treatment and disposal, namely a septic tank and package plant.

Septic tank:

Septic tank systems are a type of simple onsite sewage facility. It is an underground chamber made of concrete, fiberglass, or plastic through which domestic wastewater flows for basic treatment. Settling and anaerobic processes reduce solids and organics, but the treatment efficiency is only moderate. These are ideal in areas that are not connected to a sewerage system, such as the proposed VLNR Lodge. The treated liquid effluent is commonly disposed in a septic drain field, which provides further treatment. Nonetheless, groundwater pollution may occur and can be a problem. These types of systems are not supported by the Department of Human Settlement Water and Sanitation.

Package plant:

Package plants are self-contained, movable units used for relatively small-scale treatment (500kl/d) of sewage and are not constructed as permanent structures. Package plants are pre-assembled and transported to site or can be assembled on site. Package plants are compact and contain few moving parts and is therefore easy to maintain. Sludge is stored in the anaerobic zone and is removed by a vacuum truck every few months. No sludge is disposed of on site. A package plant is the preferred alternative for sewage treatment.

No-go alternative

The no-go alternative is the option of not undertaking the proposed activity or any of its alternatives. Should the proposed Lodge development not go ahead, any potential environmental impacts, associated with construction and operation of the Lodge, would be avoided.

However, if the Lodge is not developed, the long-term potential positive impacts will also not be realised, such as environmental awareness, proper upkeep and maintenance of the reserve and potential for eco-tourism. The positive impact expected from the Lodge, the associated environmental awareness and funds generated towards conservation, creates a scenario that if conducted correctly, the positives of the lodge outweigh the negatives of its construction.

3. ACTIVITY POSITION

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the Hartebeeshoek 94 WGS84 spheroid in a national or local projection.

List alternative sites, if applicable.

Latitude (S):

Longitude (E):

Alternative:

Alternative S1 ² (preferred or only site alternative) (Lizzulea Dam)	22°	20'	37.45"	29°	19'	41.88"
Alternative S2 (if any) (Van Zyl's House)	22°	27'	6.74"	29°	17'	34.37"
Alternative S3 (if any) (Rugen Area)	22°	25'	41.00"	29°	20'	52.16"
Alternative S4 (if any) (Faure Base Camp)	22°	16'	2.91"	29°	19'	49.37"

In the case of linear activities:

² "Alternative S.." refer to site alternatives.
LEDET BA Report, EIA 2014: VLNR Lodge: _____

Alternative:

Latitude (S):

Longitude (E):

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

°	'	"	°	'	"
°	'	"	°	'	"
°	'	"	°	'	"

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

Alternative:

Size of the activity:

Alternative A1³ (preferred activity alternative)

18 000m ²
m ²
m ²

Alternative A2 (if any)

Alternative A3 (if any)

or,

for linear activities:

Length of the activity:

Alternative:

Alternative A1 (preferred activity alternative)

	m
	m
	m

Alternative A2 (if any)

Alternative A3 (if any)

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

³ "Alternative A.." refer to activity, process, technology or other alternatives.

Size of the site/servitude:

Alternative:

Alternative A1 (preferred activity alternative)

	m ²
--	----------------

Alternative A2 (if any)

	m ²
--	----------------

Alternative A3 (if any)

	m ²
--	----------------

5. SITE ACCESS

Does ready access to the site exist?

YES	NO
-----	----

If NO, what is the distance over which a new access road will be built

m	
---	--

Describe the type of access road planned:

The existing access road (gravel road) to the proposed VLNR Lodge will be utilised. No additional roads will be created. General maintenance on existing roads will be required and will form part of the development. This includes general grading and stormwater management.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

Refer to Figure 1 (site location) which indicates the position of the access road.

6. SITE OR ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

Refer to Appendix A for detailed site plans. The following plans/maps are included:

- Figure 1: Locality map
- Figure 2: Property boundary map
- Figure 3: Areas with indigenous vegetation
- Figure 4: Vegetation sensitivity map (including plant Species of Conservation Concern (SCC))
- Figure 5: 1:100 year flood lines
- Figure 6: Recorded archaeological sites in relation to the study area

The site or route plans must indicate the following:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;

- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
 - rivers;
 - the 1:100 year flood line (where available or where it is required by Department of Water Affairs);
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

7. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Refer to Appendix B for colour photographs of the site.

8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

Refer to Appendix C for a concept illustration of the proposed VLNR Lodge. Once detailed illustrations are available, this will be submitted to the Limpopo Department of Economic Development, Environment and Tourism (LEDET).

9. ACTIVITY MOTIVATION

9(a) Socio-economic value of the activity

What is the expected capital value of the activity on completion?

R 40 000 000

What is the expected yearly income that will be generated by or as a result of the activity?

R0

As the proposed Lodge will not be operated a commercial facility for the first thirty years, it will not be a revenue generating asset.

Will the activity contribute to service infrastructure?

YES	NO
-----	----

Is the activity a public amenity?

YES	NO
-----	----

How many new employment opportunities will be created in the development phase of the activity?	74
What is the expected value of the employment opportunities during the development phase?	R4.9m
What percentage of this will accrue to previously disadvantaged individuals?	85%
How many permanent new employment opportunities will be created during the operational phase of the activity?	4
What is the expected current value of the employment opportunities during the first 10 years?	R20.16m
What percentage of this will accrue to previously disadvantaged individuals?	85%

9(b) Need and desirability of the activity

Motivate and explain the need and desirability of the activity (including demand for the activity):

De Beers Consolidated Mines has an existing Mining Right (area approximately 3 000 ha) for Venetia Mine. The mine is located on various farms, including the farm Venetia 103MS, Krone 104MS, Rugen 105MS and Drumsheugh 99MS, approximately 80km west of Musina and 40km north-east of Alldays in the Limpopo Province.

Mining operations at Venetia currently consist of a fully operational open pit and an underground mining solution which is being constructed i.e. sinking of two vertical shafts and developing a decline from the surface. Upon completion of the shaft sinking and decline development works, the rest of the underground mine must be built. The underground operation is expected to be in full production circa. 2023 and will extend the life of Venetia Mine up to about 2047.

Venetia Mine currently has no accommodation available at the mine (a 1000-person Temporary Accommodation Facility is approved for a period of 6 years. Application has been made to LEDET to amend this facility to a 100-person Permanent Accommodation Facility for life of mine). Presently, Tier 1 personnel visiting the mine are accommodated at the De Beers guest house in Musina, approximately 80 km from the mine. De Beers intends to develop the Lodge for visiting Tier 1 personnel who would like to reside close to the mine during their visit.

The lodge development will result in the temporary employment of approximately 74 people (including planners and builders). The lodge development will contribute to the upkeep and management of the VLNR that currently employs 14 staff members. The staff are predominately from the surrounding area. In addition, the Lodge will employ an addition four (4) full time staff members. Building material will be purchased from local companies. The capital investment into the development of the property will be approximately R 40 000 000.

NEED:			
i.	Was the relevant municipality involved in the application?	YES	NO
ii.	Does the proposed land use fall within the municipal Integrated Development Plan?	YES	NO
iii.	<p>The Musina Local Municipality Integrated Development Plan (MLM, 2018) indicates that the economic growth and development of the Limpopo Province is anchored around three major competitive advantages that are mining, agriculture and tourism. The plan further states that Musina Local Municipality is a home to several formal protected areas in the form of nature reserves, conservation areas and national parks. These protected areas play a significant role with respect to conservation as well as tourism.</p> <p>The Lodge development therefore falls within the ambit of the municipal Integrated Development Plan.</p>		

DESIRABILITY:			
i.	Does the proposed land use / development fit the surrounding area?	YES	NO
ii.	Does the proposed land use / development conform to the relevant structure plans, Spatial development Framework, Land Use Management Scheme, and planning visions for the area?	YES	NO
iii.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	NO
iv.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
v.	Will the proposed land use / development impact on the sense of place?	YES	NO
vi.	Will the proposed land use / development set a precedent?	YES	NO
vii.	Will any person's rights be affected by the proposed land use / development?	YES	NO
viii.	Will the proposed land use / development compromise the "urban edge"?	YES	NO
ix.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		

BENEFITS:			
i.	Will the land use / development have any benefits for society in general?	YES	NO
ii.	<p>The benefits of the proposed Lodge development to society in general include the following:</p> <ul style="list-style-type: none"> • Contributing to local economic growth • Creation of both temporary and permanent job opportunities • Continuous conservation of the Venetia Limpopo Nature Reserve • Creating environmental and conservation awareness to visiting guests 		
iii.	Will the land use / development have any benefits for the local communities where it will be located?	YES	NO
iv.	<p>The proposed VLNR Lodge development will benefit the local communities in terms of employment opportunities and job creation. It is estimated that approximately 74 jobs will be created during the construction phase and four (4) permanent jobs during the operational phase. The project will also contribute to environmental awareness to visiting guests and ecotourism in the area.</p>		

10. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline:	Relevance to project	Administering authority:	Date:
National Environmental Management Act (Act No. 107 of 1998) (NEMA)	Listed activities in terms of the NEMA Environmental Impact Assessment (EIA) Regulations are triggered, and therefore a Basic Assessment environmental authorisation process need to be followed.	Limpopo Department of Economic Development, Environment and Tourism (LEDET)	29 January 1999
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEM:BA)	The NEM:BA is the most recent legislation pertaining to alien invasive species. In August 2014 the list of Alien Invasive Species was published in terms of NEM:BA. The legislation call for the removal and/or control of alien invasive plant species (Category 1 species).	National Department of Environmental Affairs	7 January 2005
National Environmental Management Waste Act (Act No. 59 of 2008) (NEM:WA)	The Waste Act details the law regulating waste management in order to protect the environment. The development will be subject to this Act in terms of the disposal of waste.	National Department of Environmental Affairs	1 July 2009
National Environmental Management: Protected Areas Act (Act No. 57 of 2003) (NEMPAA)	The Act ensures the protection and conservation of ecologically viable areas characteristic of South Africa's biological diversity and its natural areas in order to create a national register of all national, provincial and local protected areas.	National Department of Environmental Affairs	1 November 2004
National Forest Act (Act No. 84 of 1998)	Plant species that are nationally protected under this Act were found at the proposed Lodge site, and also within the VLNR. Should a plant that is protected by this Act need to be removed for the development, a permit	National Department of Environmental Affairs	1 April 1999

Title of legislation, policy or guideline:	Relevance to project	Administering authority:	Date:
	will have to be obtained.		
National Water Act (Act No. 36 of 1998) (NWA)	A Water Use Licence Application will be submitted in terms of the National Water Act (Act No. 36 of 1998) (NWA) as Section 21 water uses are triggered:	Department of Water and Sanitation	1 October 1998
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	<p>This Act ensures control over the utilisation of the natural agricultural resources of South Africa.</p> <p>This project will need to ensure that (in terms of the Act) that the following are adhered to:</p> <ul style="list-style-type: none"> • Conservation and protection of the soil layer • Protection of natural water resources • Conservation of vegetation cover and the removal of alien/exotic/invaser plant species 	Department of Agriculture, Forestry and Fisheries	27 April 1983
National Heritage Resources Act (Act No. 25 of 1999)	The National Heritage Resources Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares (ha). Potential impact on cultural heritage, paleontological or archaeological resources through excavation activities or disturbance will need to be monitored. Permits may be required per the National Heritage Resources Act (Act No. 25 of 1999).	South African Heritage Resources Agency (SAHRA)	1 April 2000
Limpopo Environmental Management	Plant species that are protected in	Limpopo Department of Economic	1 May 2004

Title of legislation, policy or guideline:	Relevance to project	Administering authority:	Date:
Act (Act No. 7 of 2003)	terms of this Act were found at the proposed Lodge site and also within the VLNR. Should a plant protected by this Act need to be removed for the development, a permit will have to be obtained.	Development, Environment and Tourism (LEDET)	

11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

11(a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

YES	NO
150 m ³	

If yes, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

Construction waste will be removed from site and be disposed of at an approved municipal waste disposal site.

Where will the construction solid waste be disposed of (describe)?

At an approved municipal waste disposal site.

Will the activity produce solid waste during its operational phase?

YES	NO
100.8 m ³	

If yes, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

General waste generated on site at the accommodation facility will be segregated at source and will be removed frequently off-site by an approved waste management contractor. Household and solid waste collection is centralised at a location alongside the kitchen area where waste containers are provided. Waste from bedrooms will be deposited by occupants of the rooms into municipal type refuse bins which are conveniently located at all bedroom clusters and refuse collection and disposal will be done by facilities management staff. An external service provider will service and empty the containers and dispose of the waste at an approved municipal waste disposal site.

Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?

Waste will be disposed of at an approved municipal waste disposal site.

If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the department to determine whether it is necessary to change to an application for scoping and EIA.

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

YES	NO
-----	----

If yes, inform the department and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility?

YES	NO
-----	----

If yes, then the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.

11(b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

YES	NO
-----	----

If yes, what estimated quantity will be produced per month?

m ³	
YES	NO

Will the activity produce any effluent that will be treated and/or disposed of on site?

If yes, the applicant should consult with the Department to determine whether it is necessary to change to an application for scoping and EIA.

It is proposed to construct a 10Kℓ package plant for the treatment of sewage generated at the lodge. The main process used in the package plant is a standard activated sludge system, where the biochemical oxygen demand is broken down using air and bacteria, which grow in this medium. The bacteria grow naturally, and no additional bio-chemicals have to be added in the process. Effluent will be produced to align with Specialist Limits as specified in the National Water Act. The treated effluent will be used to irrigate natural vegetation around the Lodge. The plant will be installed below ground. Sludge will be stored in the anaerobic zone and will be removed by a honeysucker every 2 – 3 months if inflow remains at high levels. In practice sewage inflow will vary and duration for sludge will be much longer.

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
-----	----

If yes, provide the particulars of the facility:

Facility name:		
Contact person:		
Postal address:		
Postal code:		
Telephone:	Cell:	
E-mail:	Fax:	

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Treated effluent from the package plant will be used to irrigate natural vegetation around the Lodge. The plant will be installed below ground.

11(c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
YES	NO

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If no, describe the emissions in terms of type and concentration:

No emissions, other than that of exhaust emissions and dust fallout associated with vegetation clearing and heavy vehicles driving on gravel roads, will be released into the atmosphere.

11(d) Generation of noise

Will the activity generate noise?

YES	NO
YES	NO

If yes, is it controlled by any legislation of any sphere of government?

If yes, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.
 If no, describe the noise in terms of type and level:

Standard construction noise (i.e. heavy vehicles and site work) will occur during the construction phase only. During operations, minimal noise will be generated by the proposed VLNR Lodge.

12. WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es)

municipal	water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate

the volume that will be extracted per month:

117 000 Litres

Does the activity require a water use permit from the Department of Water Affairs?

YES	NO
------------	----

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

A Water Use Licence Application has not been submitted. The proposed project has been lodged on the Department of Water Affairs' EWULAAS website.

13. ENERGY EFFICIENCY

Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

Solar energy to used and gas for cooking. All fixtures fittings and accessories will be the latest energy efficient type. Orientation and site layout is done in a way to minimize exposure to direct sunlight.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Energy will be obtained from solar panels and gas. The lodge will not be connected to the Eskom grid.

SECTION B: SITE/AREA/PROPERTY DESCRIPTION

Important notes:

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.
 (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section?

YES	NO
------------	----

If YES, please complete the form entitled “Details of specialist and declaration of interest” for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

Lizzulea 62 MS Portion 0

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

Agricultural

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	NO
YES	NO

Must a building plan be submitted to the local authority?

Locality map:

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.) The map must indicate the following:

- an indication of the project site position as well as the positions of the alternative sites, if any;
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection)

Refer to Appendix A Figure 1 for a locality map.

1. GRADIENT OF THE SITE
Indicate the general gradient of the site.

Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Alternative S2 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

Alternative S3 (if any):

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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Topography, drainage and climate

Information for topography and drainage was obtained from the groundwater report (Future Flow, 2020 – Appendix D2).

Topography

The proposed lodge lies on a small, local, west / east striking ridge, which lies at the foot of a larger north / south trending ridge. Topographical elevations at the top of the main ridge 1.4 km to the east of the proposed lodge area are 630 to 640 metres above mean sea level (mamsl). From the top of the main ridge, the topography slopes gently towards the west at an average gradient of 1:70 to where the proposed lodge lies at around 610 mamsl.

Within the immediate vicinity of the proposed lodge that topography dips towards the south, to where the Lizzulea dam lies at 600 mamsl.

To the west of the proposed lodge area the topography is very flat. Topographical gradients range in the order of 1:175 to 1:200 to the Kolope River that lies 5 km to the west of the proposed lodge.

The slope east of the lodge, from the higher lying main ridge to the lodge, is characterised by a number of unnamed, non-perennial streams that drain the slope in an east / west direction. Once the numerous smaller streams reach the flat lying area they all collect in a single stream (the Setoka River) that drains in a northern direction. The Lizzulea dam at which the lodge is planned lies in the southern reaches of the Setoka River.

Drainage

The proposed lodge lies within the A63E quaternary catchment, which forms part of the Limpopo Water Management Area (WMA). The quaternary sub-catchment spans an area of 1 992 km².

Climate

The region is semi-arid with a subtropical climate of warm to hot summers and warm winters. The rainfall season extends from November to March. The closest rainfall station with an appropriate long-term record is the former Messina Agricultural Research Station (29° 12'-29° 23' E'; 22° 15'-22° 30' S), for which mean annual rainfall between 1934 and 1990 was 339 mm with a coefficient of variation (CV) of 37%. The mean annual rainfall at Pontdrif (about 10 km N of the NW corner of VLNR) is 366 mm (31-year record), with a 36% CV. The temporal pattern of rainfall is in close agreement with the quasi 18-year cycle proposed for southern Africa. Severe droughts, up to three years in duration, are characteristic. Rainfall has been recorded at a number of locations across VLNR since the reserve was established in the early 1990s. On-reserve recording has further revealed that the marginally higher elevation, eastern portion of VLNR receives slightly more rainfall on average than the lower altitude western portion.

The range for temperature at Musina (80 km E) is: average minimum monthly of 7.2 °C (June, July) to 20.3 °C (December); average maximum monthly of 24.7 °C (June) to 32 °C (October, November, December). Mean annual evaporation of 2 200 mm (Midgley et al. 1984) is six-fold greater than the mean annual rainfall.”

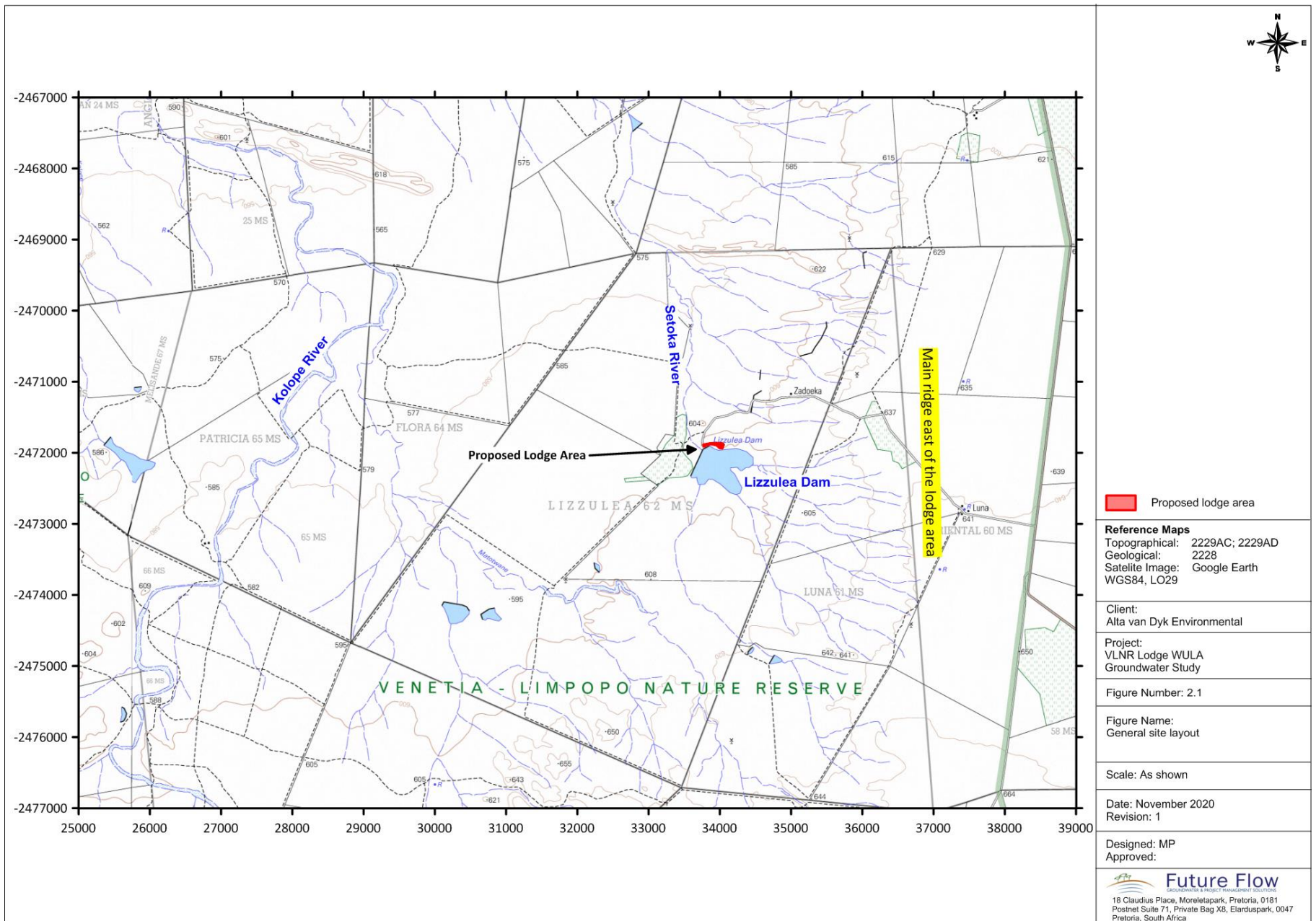


Figure 3: Riverine drainage and locality of the proposed VLNR Lodge (Future Flow, 2020)

2. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	x	2.6 Plain	
2.2 Plateau		2.7 Undulating plain / low hills	
2.3 Side slope of hill/mountain		2.8 Dune	
2.4 Closed valley		2.9 Seafront	
2.5 Open valley			

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following (tick the appropriate boxes)?

	Alternative S1:		Alternative S2 (if any):		Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. (Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted).

Groundwater

Information for the groundwater section was obtained from the groundwater report (Future Flow, 2020). Refer to Appendix D2 for the full report.

Aquifer description

Two aquifers occur in the area. These two aquifers are associated with the upper weathered material and the underlying competent and fractured rock material.

- **Upper weathered material aquifer**

The weathered material aquifer forms due to the vertical infiltration of recharging rainfall through the weathered material being retarded by the lower permeability of the underlying competent rock material. Groundwater collecting

above the weather / unweathered material contact migrates down gradient along the contact to lower lying areas.

Aquifer thickness data obtained from drilling of the water supply borehole show a thickness of 6 m.

The borehole yields in this aquifer are seasonally variable due to the strong dependence on rainfall recharge. Generally, it can be said that the yields of this aquifer during the rainy season can be around 0.5 to 2 L/s while sustainable yields will decrease markedly during the dry season. In some areas this aquifer will be laid completely dry during the dry season.

Effectively 1.9 % of the mean annual rainfall recharges the groundwater table.

- **Fractured rock aquifer**

The competent rock is subjected to fracturing that takes place during intrusion of diabase dykes into the host geology, as well as tectonic movements associated with the Limpopo mobile belt. Groundwater flows in the lower aquifer are associated with the secondary fracturing in the competent rock and as such will be along discrete pathways associated with the fractures. Faults and fractures can be a significant source of groundwater depending on whether the fractures have been filled with secondary mineralisation.

Aquifer transmissivity

The aquifer transmissivities calculated from the pumping phase data is consistent between 0.09 and 0.13 m²/day. The transmissivity calculated from the recovery data is 0.56 m²/day.

Depth to groundwater level

The depth to groundwater level was measured in the water supply borehole to be 9.12 m.

In the absence of large scale groundwater abstraction or artificial recharge in the area, it is assumed that the groundwater levels will mimic topography, albeit at a lesser gradient. It is expected that groundwater will flow from the higher lying ridge east of the lodge to the low lying area where the lodge will be located and on towards the Kolope River 5 km west of the proposed lodge. Groundwater flows can also be directed in a north-westerly direction along the drainage direction of the Setoka River.

Groundwater quality

The groundwater sample that was collected from the water supply borehole during the aquifer test was submitted to an ISO17025 / SANAS accredited laboratory for analysis. The analysis results are compared to the SANS 241:2015 drinking water standards.

Chloride, fluoride, sodium and cadmium exceed the drinking water standards:

Analysis of the groundwater character shows that the groundwater is sodium (cation) and chloride (anion) dominant. This is a representation of the natural geology of the area.

Soils and Land use

Information for the soils section was obtained from the Agricultural Compliance Statement Report (TBC1, 2020). Refer to Appendix D3 for the full report.

Current land use:

The current land use is limited and restricted to a game reserve/bushveld and a dam to the south of the proposed lodge area.

Soil forms:

The following soil forms were dominant in the area where the proposed lodge will be developed:

- Dundee soil form (orthic topsoil above a thick alluvial deposit); and
- Glenrosa soil form (orthic topsoil on top of a lithic horizon).

Erosion potential

The final Fb value (soil erodibility rating) for the Dundee soil form is 3.5 due to the fine nature of the sand, the low clay percentage, the dystrophic nature of the soils as well as the excessive amounts of sand in the soil form (predominantly alluvial). Therefore, the Dundee soil form is characterised by a “Moderate” erosion potential class.

Land potential

Land capability is divided into eight classes and these may be divided into three capability groups. Table 3 shows how the land classes and groups are arranged in order of decreasing capability and ranges of use. The risk of use increases from class I to class VIII (Smith, 2006).

Table 3: Land capability class and intensity use (Smith, 2006)

Land Capability Class	Increased Intensity of Use	Land Capability Group
I	Wildlife; Forestry; Light, moderate and intensive grazing; Light, moderate, intensive and very intensive cultivation.	Arable land
II	Wildlife; Forestry; Light, moderate and intensive grazing; Light, moderate and intensive cultivation.	
III	Wildlife; Forestry; Light, moderate and intensive grazing; Light and moderate cultivation.	
IV	Wildlife; Forestry; Light, moderate and intensive grazing.	
V	Wildlife; Forestry; Light and moderate grazing.	Grazing land
VI	Wildlife; Forestry; Light grazing.	
VII	Wildlife; Forestry	
VIII	Wildlife	Wildlife

The land potential classes are determined by combining the land capability results and the climate capability of a region. The final land potential results are determined as shown in Table 4.

Table 4: Land potential classes

Land potential	Description of land potential class
L1	Very high potential: No limitations. Appropriate contour protection must be implemented and inspected.
L2	High potential: Very infrequent and/or minor limitations due to soil, slope, temperatures or rainfall. Appropriate contour protection must be implemented and inspected.
L3	Good potential: Infrequent and/or moderate limitations due to soil, slope, temperatures or rainfall. Appropriate contour protection must be implemented and inspected.
L4	Moderate potential: Moderately regular and/or severe to moderate limitations due to soil, slope,

	temperatures or rainfall. Appropriate permission is required before ploughing virgin land.
L5	Restricted potential: Regular and/or severe to moderate limitations due to soil, slope, temperatures or rainfall.
L6	Very restricted potential: Regular and/or severe limitations due to soil, slope, temperatures or rainfall. Non-arable
L7	Low potential: Severe limitations due to soil, slope, temperatures or rainfall. Non-arable
L8	Very low potential: Very severe limitations due to soil, slope, temperatures or rainfall. Non-arable

The land capability of the above-mentioned soils range from a land capability IV to a land capability VI with the climate capability determined to be a climate capability level 8 given the low Mean Annual Precipitation (MAP) and the high Mean Annual Potential Evapotranspiration (MAPE) rates. The combination between the determined land capabilities and climate capabilities result in the following land potential levels:

- Land potential level 6 (this land potential level is characterised by regular or severe limitations due to soil, slope, temperatures or rainfall. This land potential level has been determined to be non-arable); and
- Land potential level 7 (this land potential level is characterised by severe limitations due to soil, slope, temperatures or rainfall. This land potential level has been determined to be non-arable).

The baseline findings and the sensitivities as per the Department of Agriculture, Forestry and Fisheries (DAFF, 2017) national raster file concur with one another. It therefore is the specialist’s opinion that the land capability and land potential of the resources in the assessment corridor ranges from “Very Low” to “Moderate” which conforms to the requirements of an agricultural compliance statement only.

4. GROUNDCOVER

Indicate the types of groundcover present on the site:

The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition^E	Natural veld with scattered aliens ^E	Natural veld with heavy alien infestation ^E	Veld dominated by alien species ^E	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “E” is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

Vegetation

Information on vegetation was obtained from the vegetation assessment (TBC2, 2020). Refer to Appendix D4 for the full report.

Biodiversity Conservation Plan

The proposed Lodge falls within a Critical Biodiversity Area 1 (CBA1), as identified by the Limpopo Conservation

Plan (LCPv2). Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services.

Project Area in Relation to the National Biodiversity Assessment

The two headline indicators assessed in the NBA are ecosystem threat status and ecosystem protection level.

Ecosystem threat status outlines the degree to which ecosystems are still intact or alternatively losing vital aspects of their structure, function and composition, on which their ability to provide ecosystem services ultimately depends. The project area was superimposed on the terrestrial ecosystem threat status. The project area overlaps entirely with ecosystems that are listed as Least Concern (LC).

Ecosystem protection level indicates whether ecosystems are adequately protected or under-protected. Ecosystem types are categorised as not protected, poorly protected, moderately protected or well protected, based on the proportion of each ecosystem type that occurs within a protected area recognised in the Protected Areas Act. The project area was superimposed on the ecosystem protection level map to assess the protection status of terrestrial ecosystems associated with the development. The majority of the project area falls in an area classified as Well Protected, while a section on the western side fall in a Moderately Protected area.

Protected Areas

Based on the Protected area register portal the project area fall within the following protected areas:

CA: Biosphere Reserve: Buffer Area:

- Vhembe Biosphere Reserve

RSA Transfrontier Conservation Area:

- Greater Mapungubwe Transfrontier Conservation Area

Protected Area:

- World Heritage Site: Mapungubwe Cultural Landscape
- Nature Reserve: Venetia Limpopo Nature Reserve (VLNR)

Conservation area:

- Biosphere Reserve-Vhembe Biosphere Reserve

Biome

The proposed Lodge is situated in the Savanna biome. The savanna vegetation of South Africa represents the southernmost extension of the most widespread biome in Africa. Major macroclimatic traits that characterise the Savanna biome include:

- Seasonal precipitation; and
- (Sub) tropical thermal regime with no or usually low incidence of frost.

Vegetation type

The proposed Lodge is situated within two vegetation types; the Limpopo Ridge Bushveld and the Musina Mopane Bushveld, according to Mucina & Rutherford (2006) (Figure 4) The Limpopo Ridge Bushveld is found across irregular plains of ridges and hills. Some open savanna areas can be found. In the ridge regions *Kirkia acuminata* is dominant with *Adansonia digitata* protruding out. This vegetation type is found only in the Limpopo Province at altitudes from 300 m to 700 m. Musina Mopane Bushveld is found in the Limpopo province on undulating to very irregular plains on some hills. The western section consists of open woodland to moderately closed shrubveld dominated by *Colophospermum mopane* and *Combretum apiculatum*. The eastern section consists of moderately closed to open shrubveld, dominated by *Colophospermum mopane* and *Terminalia prunioides*. On areas with deep sandy soils, moderately open savanna dominated by *Colophospermum mopane*, *T. sericea*, *Grewia flava* and *Combretum apiculatum* can be found.

Species of Conservation Concern

Based on the Plants of Southern Africa (BODATSA-POSA, 2016) database, 398 plant species are expected to occur in the area. Of the 398 plant species, 7 species are listed as being Species of Conservation Concern (SCC), they are provincially protected under the Limpopo Environmental Management Act (Act No 7 of 2003, Schedule 12), while one species is a nationally protected tree under the National Forest Act, 1998 (Act No. 84 of 1998). Refer to Table 5.

Table 5: Expected flora SCC

Taxon	Protection
<i>Adansonia digitata</i>	Schedule 12, Limpopo 2003
<i>Adenium oleifolium</i>	Schedule 12, Limpopo 2003
<i>Aloe globuligemma</i>	Schedule 12, Limpopo 2003
<i>Boscia albitrunca</i>	National Forest Act
<i>Huernia zebrina subsp. zebrina</i>	Schedule 12, Limpopo 2003
<i>Ochna glauca</i>	Schedule 12, Limpopo 2003
<i>Orbea rogersii</i>	Schedule 12, Limpopo 2003

The VLNR ecological plan lists ten flora species of conservation concern that has been found on the reserve. These species are provincially and, in some cases, nationally protected. Refer to Table 6.

Table 6: Flora SCC identified in the VLNR Ecological Plan

Taxon	Protection
<i>Adenium oleifolium</i>	Schedule 12, Limpopo 2003
<i>Ansellia africana</i>	Schedule 12, Limpopo 2003
<i>Hoodia currorii subsp. lugardii</i>	Schedule 12, Limpopo 2003
<i>Harpagophytum procumbens</i>	NEM:BA
<i>Huernia zebrina subsp. magniflora</i>	Schedule 12, Limpopo 2003
<i>Orbea carnososa subsp. keithii</i>	Schedule 12, Limpopo 2003
<i>Orbea rogersii</i>	Schedule 12, Limpopo 2003
<i>Stapelia gigantea</i>	Schedule 12, Limpopo 2003
<i>Stapelia kwebensis</i>	Schedule 12, Limpopo 2003
<i>Tavaresia barklyii</i>	Schedule 12, Limpopo 2003

Vegetation recordings

A total of 35 tree, shrub and herbaceous plant species were recorded in the proposed project area during the field assessment. Alien/Exotic/Invader plant species appear in blue text, NEM:BA Category 1 Plants in green. Three (3) are provincially protected under the Limpopo Environmental Management Act (Act no 7 of 2003, Schedule 12), and three (3) species are nationally protected tree under the National Forest Act, 1998 (Act No. 84 of 1998).

Table 7: Plants of significance identified during the field assessment

Scientific Name	Common Name	Threat Status (SANBI, 2017)	Alien Category
<i>Adansonia digitata</i>	Baobab	LC-Nationally Protected Tree	
<i>Adenium oleifolium</i>	Bitterkambro	LC-Schedule 12 Protected	
<i>Boscia albitrunca</i>	Shepards Tree	LC-Nationally Protected Tree	
<i>Boscia foetida subsp. minima</i>	Stink Shepherds-tree	LC-Schedule 12 Protected	
<i>Combretum imberbe</i>	Leadwood	LC-Nationally Protected Tree	
<i>Flaveria bidentis</i>	Smeltersbossie		NEMBA 1b
<i>Hoodia currorii subsp. lugardii</i>	Ghaap	LC-Schedule 12 Protected	
<i>Tagetes minuta</i>	Khaki Bush		Naturalized exotic weed

Habitat assessment

The main habitat types identified across the proposed lodge area were initially identified largely based on aerial imagery. These main habitat types were refined based on the field coverage and data collected during the survey; the delineated habitats can be seen in Figure 4.

- **Limpopo Ridge Bushveld**

This habitat type is regarded as natural Bushveld, but slightly disturbed due to human infringement in areas close to roads. The current ecological condition of this habitat are intact, this assumption is based on the high species diversity and density of plant species recorded in these areas. This also highlights the importance of the Nature Reserve for this habitat type. This habitat unit can thus be regarded as important, not only within the local landscape, but also regionally; as it functions as viable habitat within a conservation area, is utilised for foraging and movement corridors for fauna. The habitat sensitivity is regarded as high, due to the number of floral SCC recorded as well as the role of this intact habitat in the ecosystem.

- **Modified Bushveld**

This Modified Bushveld habitat comprises of areas where the Limpopo Ridge Bushveld has been altered by historic and/or current human activities. This habitat is comprised of the roads (cleared areas) and their edges. The sensitivity of these areas is regarded as low-moderate based on the importance of these areas as corridors to more sensitive habitats. This habitat also may have a potential to returning to a more natural state if left undisturbed or rehabilitated.

Sensitivity

The completion of the vegetation assessment resulted in a sensitivity of low-high, and therefore differs from the sensitivity in comparison to the screening report. In terms of terrestrial habitats, areas that were classified as having a low-moderate sensitivity are those areas which were deemed by the specialists to have been impacted upon and/or were modified from their original condition due to historical impacts. The Modified Bushveld habitat does not represent the CBA-1 classification as proposed by the biodiversity plan as these habitats have been modified and transformed.

The Limpopo Ridge Bushveld habitat were rated as highly sensitive, they still;

- Serve as and represent CBA-1, as identified by the Limpopo Conservation Plan;
- Contribute and act as an integral part of World Heritage Site: Mapungubwe Cultural Landscape, Nature Reserve: Venetia Limpopo Nature Reserve (VLNR) and the Biosphere Reserve-Vhembe Biosphere Reserve; and
- Support various faunal and floral species, especially the SCCs recorded, as habitat and a conservation area.

Refer to the vegetation sensitivity map in Appendix A, Figure 3.

It is important to note that this map does not replace any local, provincial or government legislation relating to these areas or the land use capabilities or sensitivities of these environments but is done in relation to the legislation.

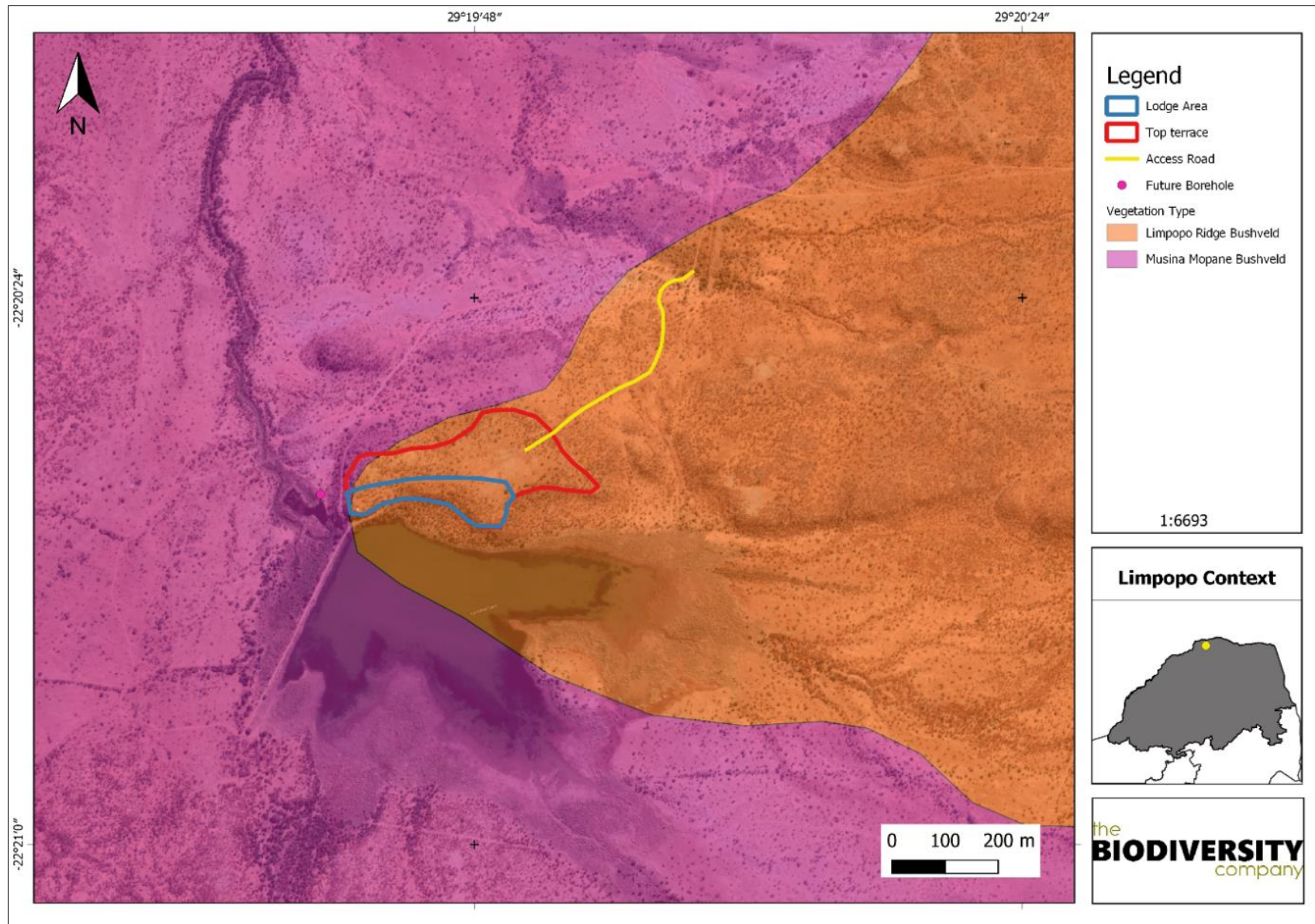


Figure 4: Vegetation types

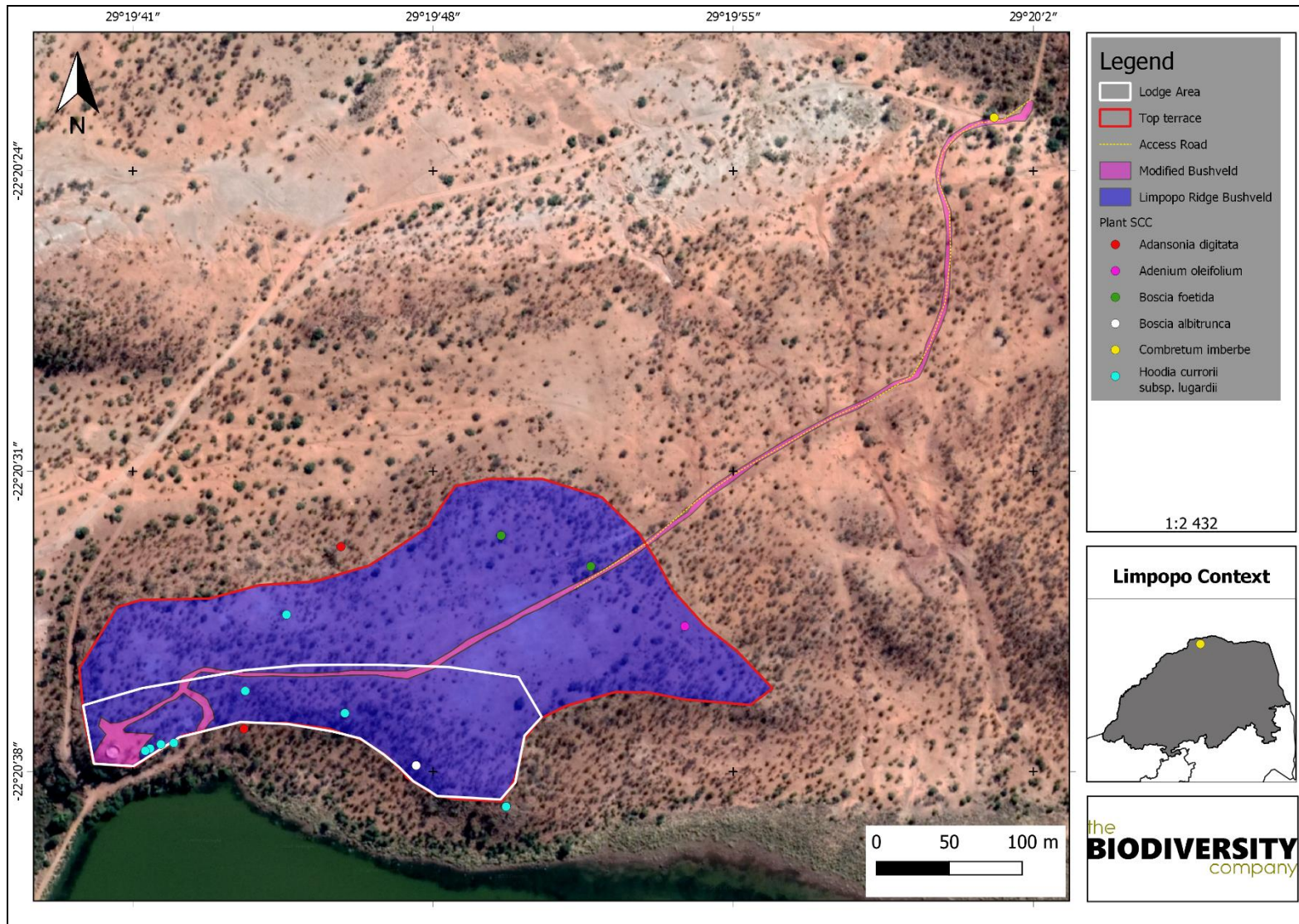


Figure 5: Location and extent of habitat types within the project area

5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

5.1 Natural area	x	5.22 School	
5.2 Low density residential		5.23 Tertiary education facility	
5.3 Medium density residential		5.24 Church	
5.4 High density residential		5.25 Old age home	
5.5 Medium industrial ^{AN}		5.26 Museum	
5.6 Office/consulting room		5.27 Historical building	
5.7 Military or police base/station/compound		5.28 Protected Area	x
5.8 Spoil heap or slimes dam ^A		5.29 Sewage treatment plant ^A	
5.9 Light industrial		5.30 Train station or shunting yard ^N	
5.10 Heavy industrial ^{AN}		5.31 Railway line ^N	
5.11 Power station		5.32 Major road (4 lanes or more)	
5.12 Sport facilities		5.33 Airport ^N	
5.13 Golf course		5.34 Harbour	
5.14 Polo fields		5.35 Quarry, sand or borrow pit	
5.15 Filling station ^H		5.36 Hospital/medical centre	
5.16 Landfill or waste treatment site		5.37 River, stream or wetland	x
5.17 Plantation		5.38 Nature conservation area	x
5.18 Agriculture		5.39 Mountain, koppie or ridge	x
5.19 Archaeological site	x	5.40 Graveyard	
5.20 Quarry, sand or borrow pit		5.41 River, stream or wetland	x
5.21 Dam or Reservoir	x	5.42 Other land uses (describe)	

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity?

Not applicable

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity?

If YES, specify and explain:

If NO, specify:

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity.

If YES, specify and explain:	
If NO, specify:	

6. CULTURAL/HISTORICAL FEATURES

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or palaeontological sites, on or close (within 20m) to the site?	YES	NO
	Uncertain	
If YES, explain:	Refer to paragraph below.	
If uncertain, conduct a specialist investigation by a recognised specialist in the field to establish whether there is such a feature(s) present on or close to the site.		
Briefly explain the findings of the specialist:	Refer to paragraph below.	
Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO

A Heritage Impact Assessment was undertaken by Heritage Contracts and Archaeological Consulting (HCAC) in November 2020. This study included a Paleontological Study by Marion Bamford. Refer to Appendix D5 and D6 for a copy of the Heritage Impact Assessment and Paleontological Study respectively.

Key findings of the assessment include:

- The study area is indicated as very sensitive on the South African Heritage Resources Information System (SAHRIS) paleontological map and an independent study was conducted. During the field survey no body fossils were recorded, only isolated rock fragments with trace fossils;
- Iron Age/farming community sites dating to the Leokwe *facies* (1010 – 1160 AD) occur within but mostly adjacent to the study area;
- The existing access road was constructed through one of the Leokwe sites;
- Stone Age⁴ (mostly Later Stone Age (LSA) and to a lesser extend Middle Stone Age (MSA)) artefacts are found to the north of the study area;
- The study area is located within the Mapungubwe World Heritage Site (WHS) buffer zone but will not negatively impact on the Outstanding Universal Value (OUV) of the site.

Several Iron Age sites are on record at the University of Johannesburg (Wits) database as well as the SAHRIS database surrounding the study area. During the site visit, sites in proximity to the study area were visited and a few additional sites and features were recorded. These include Iron Age find spots, Stone Age lithics and a stone walled enclosure. Some of the sites recorded during the 2020 survey form part of the known sites recorded by Wits. Wits

⁴ Later Stone Age: Associated with Kho and San societies and their immediate predecessors. Recently to ~30 thousand years ago

Middle Stone Age: Associated with *Homo sapiens* and archaic modern humans. 30 – 300 thousand years ago

follows a numbering system assigned in the lab according to the topographical map number (2229 AD) and sites are then numbered numerically. The sites recorded during the current assessment are automatically assigned field waypoint numbers. Evidence of modern farming activities are visible on the hill in the form of a cement dam and earthworks possibly for laying of waterpipes but are not of heritage significance. The archaeological sites in proximity to the proposed development area are summarised in Table 8 and shown in Figure 6.

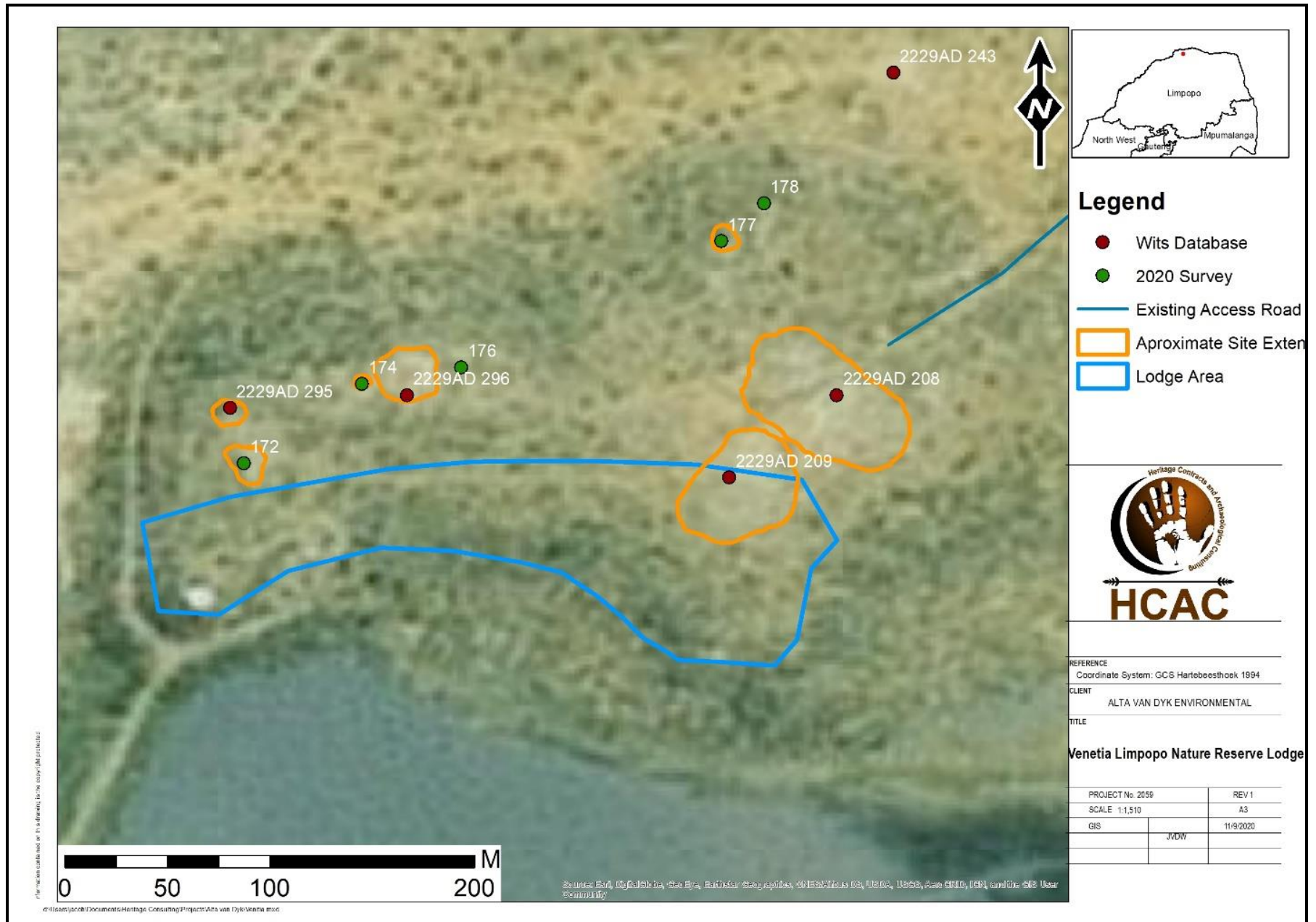


Figure 6: Recorded heritage sites in relation to the study area

Table 8: Heritage sites and features recorded during the heritage impact assessment

Label	Coordinates	Summary	Description	Significance and field rating	Mitigation required
172	22° 20' 35.8727" S 29° 19' 41.2176" E	Grey area (possibly ash) no diagnostic ceramics, various LSA artefacts. Possibly the southern extend of Site 2229AD 295	Site is marked by grey deposit (possibly ash), approximately 13 meters in diameter on the edge of the hill overlooking the surrounding area. Artefacts are limited to a few undecorated ceramics and LSA lithics on Crypto Crystalline Silica (CCS) with one MSA piece. LSA artefacts occur at an approximate ratio of 2 artefacts per m ² and consist of flakes, chips and chunks. Only two formal pieces were recorded consisting of a broken MSA point probably reutilised during the LSA and backed blade. Site extends to edge of the hill to Site 2229AD 295 that is marked by a similar frequency of tools but on Hornfels.	Medium GP A*	No direct impact. Preserve in situ.
2229AD 295	22° 20' 35.0000" S 29° 19' 41.0000" E	Grey area (possibly ash) no diagnostic ceramics. various LSA artefacts.			No direct impact. Preserve in situ.
174	22° 20' 34.6201" S 29° 19' 43.0860" E	Grey area (possibly ash) no diagnostic ceramics. various LSA artefacts.	This site is also marked by a small grey patch measuring approximately 10 meters in diameter. No ceramics were recorded here but several possibly LSA flakes (artefact ratio of 1 artefact per 2m ²) were noted mostly on hornfels, although a few CCS flakes do occur.	Medium GP A	No direct impact. Preserve in situ.
2229AD 296	22° 20' 34.8000" S 29° 19' 43.8000" E	Grey are (possibly ash) with TK2 pottery and few LSA artefacts.	Another site marked by a grey ash patch measuring approximately 13 meter in diameter. Fewer artefacts are noted here although some undiagnostic ceramics were recorded here. Some bone fragments, ostrich eggshell fragments and a few Stone Age lithics were recorded. A tang for spear or arrow was noted. At least one grain bin foundation was recorded, the site was previously identified by Wits as a TK2 Iron Age site (1200 – 1250 AD).	Medium GP A	No direct impact. Preserve in situ.
176	22° 20' 34.3573" S 29° 19' 44.6593" E	Bone and OES fragments, tang of spear or arrow.	Bone and OES fragments, tang of spear or arrow.	Medium	No direct impact. Preserve in situ
177	22° 20' 32.3628" S	Grey area (possibly ash)	Another grey patch marking less than 6	Medium	No direct impact. Preserve in situ.

Label	Coordinates	Summary	Description	Significance and field rating	Mitigation required
	29° 19' 48.7740" E	no diagnostic ceramics. few LSA artefacts.	meters in diameter with almost no surface artefacts.	GP A	
178	22° 20' 31.7617" S 29° 19' 49.4472" E	Stone enclosure.	Stone enclosure with collapsed walls with an inside diameter of approximately 2.5 meters with a north facing entrance. An upper grinding stone was noted on the wall with bone, shell and undecorated ceramics on the inside of the enclosure.	Medium GP A	No direct impact. Preserve in situ.
2229AD 208	22° 20' 34.8000" S 29° 19' 50.6000" E	Leokwe site with vitrified dung	This is the location of two Leokwe sites previously recorded by Wits. The sites are marked by vitrified dung deposits, ceramics and grain bin stands. An existing gravel road cuts through the sites and will also be used as access road to the lodge.	Medium GP A	No direct impact by the lodge therefore preserve in situ. As the impact to the Leokwe sites (Site 2229AD 208 & 2229AD 209) has already occurred the continued use of the existing access road subject to a Section 35 permit as well as a management plan is recommended. There is no design report for the road but the intact deposit can be sealed by paving the area and including the management of stormwater and erosion in the site management plan.
2229AD 209	22° 20' 36.1000" S 29° 19' 48.9000" E	Leokwe site with vitrified dung			The site is located on the periphery of the proposed impact area and it is recommended that the site should be preserved in situ. As the impact to the Leokwe sites (Site 2229AD 208 & 2229AD 209) has already occurred the continued use of the existing access road subject to a Section 35 permit as well as a management plan is recommended. There is no design report for the road but the intact deposit can be sealed by paving the area and including the management of stormwater and erosion in the site management plan.

* Generally Protected A – requires mitigation before destruction.

SECTION C: PUBLIC PARTICIPATION

A summary of the public participation process followed is provided in this section.

Pre-application:

Pre-application meetings were held during November 2020 with the following stakeholders:

- Musina Local Municipality
- Limpopo Department of Economic Development and Tourism
- SANParks – Mapungupwe
- Corea Lodge
- Abend Ruhe Gotha

During these meetings the proposed project was introduced, and attendees were given the opportunity to raise any comments and concerns about the proposed project. A Background Information Document (BID) (Appendix E4) was also distributed during these meetings. Comments made and concerns raised during these meetings were minuted and is included in the Comment and Response Report (Appendix E1). The presentation and minutes of the meetings are available in Appendix E2 and E3 respectively.

Project announcement:

The proposed VLNR Lodge development was announced as follows:

- Distribution of notification letters (Appendix E5) and BIDs via email to adjacent landowners, local authorities, lodges in the area and the Endangered Wildlife Trust (proof of email in Appendix E6);
- Placing site notices around the VLNR (Appendix E7);
- Advertisement in the Zoutpansberger on 29 January 2021 (Appendix E8).

Availability of the Draft Basic Assessment Report for public comment

The Draft Basic Assessment Report was available for public comment for a period of 30 days from 5 February to 8 March 2021. The report was made available at the following public places:

- De Beers Venetia Mine security office;
- VLNR Luna Office; and
- Reception of Mapungubwe National Park.

Electronic copies were made available on request.

Comments received during this period is available in Appendix E10.

Submission of the Final Basic Assessment Report to the competent authority:

All comments obtained from stakeholders and authorities during the pre-application and announcement phases and received during the Draft Basic Assessment Report public comment period are captured in the Comment and Response Report. Refer to Appendix E1. The Final Basic Assessment Report (this report) is submitted to the competent authority (LEDET) for authorisation.

Decision:

Once a decision regarding the environmental authorisation application has been received from LEDET, all registered stakeholders will be informed via email.

Table 9 provides a review of the legal requirements for public participation in terms of NEMA EIA Regulations.

Table 9: Legal requirements for public participation

NEMA Regulation	Public Participation Regulation	Process followed
39 (1)	If the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.	De Beers is both the applicant and landowner.
41 (2) (a)	Fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of— (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and (ii) any alternative site;	Notice boards were placed on the border fence of the VLNR. Refer to Appendix E7.
41 (2) (b)	Giving writing notice to	
(i)	The occupiers of the site	BIDs were provided to the VLNR managers who attended the pre-application meeting with SANParks on 5 November 2020.
(ii)	Owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken	BIDs were emailed to the following lodges around the VLNR: <ul style="list-style-type: none"> • Abend Ruhe Gotha • Corea Game Lodge • Tranquil Nest • Koedoe Rest Camp • Coila Safari's • Kaoxa Bush Camo • Evangelina Game Lodge • Marula Lodge Safaris • Lubeksdal • Moyo Safari Lodge Refer to Appendix E6.
(iii)	The municipal councillor of the ward	A BID was emailed to Musina Local Municipality Ward 2 Councillor Evelyn Shirilele. Refer to Appendix E6.
(iv)	The municipality which has jurisdiction in the area	A BID was emailed to the following persons at the Musina Local

NEMA Regulation	Public Participation Regulation	Process followed
		Municipality: <ul style="list-style-type: none"> • Musiwalo Mphephu • Rendani Kutama • Hendrik Maseko • Kenny Ravhuannzwo A BID was emailed to Robert Magada at the Vhembe District Municipality.
(v)	Organ of state having jurisdiction in respect of any aspect of the activity	Pre-application meetings were held with the following authorities: <ul style="list-style-type: none"> • LEDET • SANParks • Musina Local Municipality. A BID was emailed to the following authorities: <ul style="list-style-type: none"> • DWS A site visit has been scheduled with DWS for 31 March 2021. <p>The Heritage Impact Assessment was uploaded onto the South African Heritage Resources Information System (SAHRIS).</p>
(vi)	Any other party as required by the competent authority	None
41 (2) (c)	Placing an advertisement in one local newspaper	An advertisement was placed in the Zoutpansberger on 29 January 2021. Refer to Appendix E8.
41 (2) (d)	Placing an advertisement in at least one provincial or national newspaper, if the activity may have an impact that extends beyond the boundaries of the metropolitan or district municipality.	Not applicable. The activity does not have an impact that extends beyond the boundaries of the metropolitan.
41 (2) (e)	Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to- <ul style="list-style-type: none"> (i) illiteracy; (ii) disability; or (iii) any other disadvantage 	Not applicable.
41 (3)	A notice, notice board or advertisement must: <ul style="list-style-type: none"> (a) give details of the application or proposed application which is subjected to public 	A2 sized notice boards were placed on the border fence of the VLNR. Refer to Appendix E7.

NEMA Regulation	Public Participation Regulation	Process followed
	participation; and (b) state: (i) whether a basic assessment or S&EIR procedures are being applied to the application (ii) the nature and location of the activity to which the application relates (iii) where further information on the application can be obtained (iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made	
4	A notice board referred to in Subregulation (2) must (a) be of a size of at least 60cm by 42cm (b) display the required information in lettering and in a format as may be determined by the competent authority	

1. ADVERTISEMENT

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the department) at a place conspicuous to the public at the boundary or on the fence of—
 - (i) the site where the activity to which the application relates is or is to be undertaken; and
 - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
 - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
 - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
 - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - (v) the municipality which has jurisdiction in the area;
 - (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
 - (vii) any other party as required by the department;

- (c) placing an advertisement in—
 - (i) one local newspaper; or
 - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the department, in those instances where a person is desiring of but unable to participate in the process due to—
 - (i) illiteracy;
 - (ii) disability; or
 - (iii) any other disadvantage.

2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
 - (i) that the application has been submitted to the department in terms of these Regulations, as the case may be;
 - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
 - (iii) the nature and location of the activity to which the application relates;
 - (iv) where further information on the application or activity can be obtained; and
 - (v) the manner in which and the person to whom representations in respect of the application may be made.

Refer to Appendix E7 for a copy of the site notice.

3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the department in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these Regulations.

Advertisements and notices must make provision for all alternatives.

Refer to Appendix E8 for a copy of the advertisement.

4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the department to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application is submitted. The comments and responses must be captured in a comments and response report as prescribed in these Regulations and be attached to this application. The comments and response report must be attached under Appendix E.

Refer to Appendix E1 for the Comment and Response Report.

6. AUTHORITY PARTICIPATION

Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.

Refer to Appendix E9 for a complete list of stakeholders consulted during the pre-application phase and Draft Basic Assessment Report public comment period.

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

Name of Authority informed:	Comments received (Yes or No)
Limpopo Department of Economic Development, Environment and Tourism (LEDET)	Yes
Department of Human Settlement, Water and Sanitation (DWS)	No
Musina Local Municipality	Yes
South African National Parks (Mapungubwe)	Yes
South African Heritage Resources Agency	No

7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that subregulation to the extent and in the manner as may be agreed to by the department.

Proof of any such agreement must be provided, where applicable.

Has any comment been received from stakeholders?

YES	NO
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If “YES”, briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Please refer to Section C: Public Participation above for a summary of the public participation process followed to date for the VLNR Lodge project. Supporting documentation is available in Appendix E of this Basic Assessment Report. The following documentation is available:

Appendix E1: Comment and Response Report (captures all comments received to date)

Appendix E2: Pre-application meeting presentation

Appendix E3: Minutes of pre-application meetings

Appendix E4: Background Information Document

Appendix E5: Notification letter

Appendix E6: Proof of emailing notification letters

Appendix E7: Proof of site notice

Appendix E8: Proof of advertisement

Appendix E9: List of stakeholders

Appendix E10: Comments received

Main comments received from stakeholders are summarised in Section D part 1 (issues raised by interested and affected parties) below.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

The following main comments were made by stakeholders regarding the proposed VLNR Lodge project:

- The Basic Assessment Report must be sent to the Musina Local Municipality for comment.
- Include a geotechnical study as part of the Basic Assessment Report.
- Confirm if the Lodge will be open to the public.
- When will construction commence?
- A Heritage Assessment must be undertaken as the proposed Lodge fall within the Mapungubwe World

Heritage Site buffer zone.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Appendix E):

Refer to Appendix E1.

2. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed.

Impact Assessment Methodology

The significance of the identified impacts will be determined using an accepted methodology from the Department of Environmental Affairs and Tourism Guideline document on EIA Regulations, April 1998. As with all impact methodologies, the impact is defined in a semi-quantitative way and will be assessed according to methodology prescribed in the following section.

Once the Environmental Risk Ratings have been evaluated for each potential environmental impact, the Significance Score of each potential environmental impact is calculated by using the following formula:

- $SS \text{ (Significance Score)} = (\text{magnitude} + \text{duration} + \text{extent} + \text{irreplaceable} + \text{reversibility}) \times \text{probability}$.

The maximum Significance Score value is 150.

The Significance Score is then used to rate the Environmental Significance of each potential environmental impact as per Table 11 below. The Environmental Significance rating process is completed for all identified potential environmental impacts both before and after implementation of the recommended mitigation measures.

Table 10: Scale utilised for the evaluation of the Environmental Risk Ratings

Evaluation Component	Rating	Scale	Description / criteria
MAGNITUDE of negative impact (at the indicated spatial scale)	10	Very high	Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.
	8	High	Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.
	6	Medium	Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.
	4	Low	Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.
	2	Very low	Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.
	0	Zero	Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
MAGNITUDE of POSITIVE IMPACT (at the indicated spatial scale)	10	Very high	Positive: Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.
	8	High	Positive: Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.
	6	Medium	Positive: Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.
	4	Low	Positive: Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.
	2	Very low	Positive: Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.
	0	Zero	Positive: Bio-physical and/or social functions and/or processes will remain <i>unaltered</i> .
DURATION	5	Permanent	Impact in perpetuity. –

Evaluation Component	Rating	Scale	Description / criteria
	4	Long term	Impact ceases after operational phase/life of the activity > 60 years.
	3	Medium term	Impact might occur during the operational phase/life of the activity – 60 years.
	2	Short term	Impact might occur during the construction phase - < 3 years.
	1	Immediate	Instant impact.
EXTENT (or spatial scale/influence of impact)	5	International	Beyond the National boundaries.
	4	National	Beyond provincial boundaries, but within National boundaries.
	3	Regional	Beyond 5 km of the VLNR Lodge and within the provincial boundaries.
	2	Local	Within a 5 km radius of the VLNR Lodge.
	1	Site-specific	On site or within 100 meters of the site boundaries.
	0	None	Zero extent.
IRREPLACEABLE loss of resources	5	Definite	Definite loss of irreplaceable resources.
	4	High potential	High potential for loss of irreplaceable resources.
	3	Moderate potential	Moderate potential for loss of irreplaceable resources.
	2	Low potential	Low potential for loss of irreplaceable resources.
	1	Very low potential	Very low potential for loss of irreplaceable resources.
	0	None	Zero potential.
REVERSIBILITY of impact	5	Irreversible	Impact cannot be reversed.
	4	Low irreversibility	Low potential that impact might be reversed.
	3	Moderate reversibility	Moderate potential that impact might be reversed.
	2	High reversibility	High potential that impact might be reversed.
	1	Reversible	Impact will be reversible.
	0	No impact	No impact.
PROBABILITY (of occurrence)	5	Definite	>95% chance of the potential impact occurring.
	4	High probability	75% - 95% chance of the potential impact occurring.
	3	Medium probability	25% - 75% chance of the potential impact occurring
	2	Low probability	5% - 25% chance of the potential impact occurring.
	1	Improbable	<5% chance of the potential impact occurring.
	0	No probability	Zero probability.
Evaluation Component	Rating scale and description / criteria		
CUMULATIVE impacts	<p>High: The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Medium: The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p>Low: The activity is localised and might have a negligible cumulative impact.</p> <p>None: No cumulative impact on the environment.</p>		

Table 11: Scale used for the evaluation of the Environmental Significance Ratings

Significance score	Environmental significance	Description
1250 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked at.
40 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

Table 12: Identified impacts during the construction phase of the VLNR Lodge Project

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Surface and Groundwater																				
Impacts on groundwater volumes due to groundwater abstraction from the water supply borehole	Abstraction groundwater from supply borehole	2	2	1	2	1	5	40	M	Low	Negative	<ul style="list-style-type: none"> Monitor groundwater levels as per groundwater monitoring plan. Monitoring groundwater abstraction as per groundwater monitoring plan. Reduce water requirement where possible. 	2	2	1	1	1	5	35	L
Impacts on groundwater volumes due to surface construction of infrastructure	Construction of VLNR Lodge	2	1	1	1	1	1	6	L	Low	Negative	<ul style="list-style-type: none"> Monitor groundwater levels as per groundwater monitoring plan. 	2	1	1	1	1	1	6	L
Impacts on groundwater quality due to construction activities	Construction of VLNR Lodge	2	5	1	3	5	3	48	M	Low	Negative	<ul style="list-style-type: none"> Monitor the groundwater quality as per groundwater monitoring plan. Safe storage of chemicals, hydrocarbons and other pollutants. Proper maintenance of vehicles. Develop a leak/spill procedure for all possible areas of leaks/spillages. Spill kits will be provided for on site for spill clearing. Spills will be cleared and remediated immediately. Provide adequate portable toilet facilities for construction crews that are located outside of ecologically sensitive areas. 	4	5	1	1	2	3	39	L
Impacts on surface water volumes due to groundwater abstraction from the water supply borehole	Abstraction from water supply borehole	2	2	1	1	1	1	7	L	Low	Negative	<ul style="list-style-type: none"> Monitor groundwater levels as per groundwater monitoring plan. Reduce water requirement where possible. Manage pump schedule to minimise prolonged periods of constant pumping. 	2	1	1	1	1	1	6	L
Impacts on surface water quality due to poor quality seepage from the pollution source areas	Construction of VLNR Lodge	2	3	1	3	5	2	28	L	Low	Negative	<ul style="list-style-type: none"> Proper maintenance of construction vehicles. Storage of chemicals and other possible pollution sources. Implement appropriate stormwater management measures, including the temporary diversion of upstream run-off from the construction and laydown areas. 	2	5	1	3	5	1	16	L
Soils																				
Loss of soils due to compaction and erosion	Construction of VLNR Lodge	4	5	1	4	4	4	72	M	Low	Negative	<ul style="list-style-type: none"> Implement appropriate stormwater management measures, including the temporary diversion of upstream run-off from the construction and laydown areas. Compacted areas are to be ripped to loosen the soil structure where necessary. Existing roads must be used as much as possible. Erosion mitigation strategies and proper stormwater management must be considered to limit erosion within the development footprint area. A rehabilitation strategy focused on revegetation must be initiated after the construction phase. Prevent any spills from occurring. Machines must be parked within hard park areas or dedicated storage areas and must be checked daily for fluid leaks. Contractors must have spill kits available to address any unlikely spillages. Provide adequate toilet facilities for construction crews that are located outside of ecologically sensitive areas. 	2	5	1	1	3	2	24	L
Biodiversity – Fauna and Flora																				

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Destruction, fragmentation and degradation of habitats, ecosystems and loss of CBA-1.	Vegetation clearing and construction of Lodge	7	5	2	4	4	4	88	MH	Low	Negative	<ul style="list-style-type: none"> Areas of indigenous vegetation, even secondary communities outside of the direct project footprint, should under no circumstances be fragmented or disturbed further. Clearing of vegetation should be minimized and avoided where possible. All construction/operational vehicles and access must make use of the existing roads. The construction laydown area will be located within the lodge footprint area. 	4	2	1	3	2	2	24	L
Loss of protected plant and tree species	Vegetation clearing and construction of Lodge	7	5	2	4	4	4	88	MH	Low	Negative	<ul style="list-style-type: none"> Any individual of the nationally protected trees or protected plants that were observed needs a relocation or destruction permit that will be required for any individual that may be removed or destroyed due to the development, alternatively the trees/plants can be relocated within the property without a permit or otherwise left unharmed. High visibility flags must be placed near any protected trees/plants. Prior to the construction phase a botanist should identify all protected plants, point out SCC. 	4	2	1	2	2	2	22	L
Spread and/or establishment of alien and/or invasive species	Vegetation clearing	5	4	3	3	3	3	54	M	Low	Negative	<ul style="list-style-type: none"> Cleared areas must be rehabilitated with indigenous vegetation. Follow existing alien management plan as per the De Beers Ecology Division, Overarching VLNR Management Plan. 	4	3	1	2	2	2	24	L
Introduction of nuisance vectors (pests) such as flies, rodents and baboons	Construction activities associated with the Lodge	6	2	1	2	1	3	36	L	Low	Negative	<ul style="list-style-type: none"> Ensure the correct handling, storage and operation of general waste generated on the construction site. Remove general waste generated frequently as to prevent the development of a breeding habitat for nuisance pests such as flies, and attracting rodents and baboons. 	2	2	1	1	1	2	14	L
Heritage																				
Impact on Archaeological Resource - Iron Age sites	Construction of the VLNR Lodge	4	5	3	5	5	3	66	M	Low	Negative	<ul style="list-style-type: none"> It is recommended that the recorded sites 172, 2229AD 295, 174, 2229AD 296, 176, 177, 178, 2229AD 208, 2229AD 209 should be retained in situ. If this is not possible the sites should be subjected to Phase 2 Mitigation. Rerouting of the existing access road and rehabilitation of the current access road is a mitigation option but will potentially impact on other sites and is therefore not the preferred option. A better alternative will be to use the existing road as the impact has already occurred and to minimise further impact to the site. This will be subjected to a Section 35 permit as well as a management plan. There is no design report for the road, but the intact deposit can be sealed by paving the area and including the management of stormwater and erosion in the site management plan. Implementation of a heritage site development plan for the project. Site 2229AD 209 must be preserved in situ with the implementation of a site development plan. Implementation of a chance find procedure for the project (archaeology and palaeontology). 	4	5	3	3	3	3	36	L
Noise																				
General rise in ambient noise levels	Construction of the VLNR Lodge	4	2	2	1	1	4	40	M	Low	Negative	<ul style="list-style-type: none"> Ensure high level of equipment maintenance, especially intake and exhaust mufflers. Replace pure tone (beeping) with broadband (hissing) reversing alarms. 	2	2	2	1	1	2	16	L
Air Quality																				
Increased dust fallout	Construction of the VLNR Lodge	4	2	1	1	1	4	36	L	Low	Negative	<ul style="list-style-type: none"> Apply dust suppressants to gravel roads used. Set speed limits to 40 km/h to minimise the creation of fugitive dust within the project boundary. 	2	2	1	1	1	2	14	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Social																				
Benefits resulting from employment and income opportunities created by the construction of the lodge	Construction of the VLNR Lodge	4	2	2	2	1	3	33	L	Low	Positive	<ul style="list-style-type: none"> Develop a clear and concise employment policy prioritising local employment. Employ local works if qualified applicants with the appropriate skills are available. Purchase goods and services at a local level if available. 	6	2	2	2	1	4	52	M

Table 13: Identified impacts during the operational phase of the VLNR Lodge Project

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION							Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION								
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL				Significance	Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Surface and Groundwater																				
Impacts on groundwater volumes due to groundwater abstraction from the water supply borehole	Abstraction groundwater from supply borehole	2	4	1	3	2	5	60	M	Low	Negative	<ul style="list-style-type: none"> Monitor groundwater levels as per the groundwater monitoring plan. Reduce water requirement where possible. 	1	4	1	3	1	5	50	M
Impacts on groundwater quality due to operational activities	Operation of VLNR Lodge	6	5	2	3	3	4	76	MH	Low	Negative	<ul style="list-style-type: none"> Monitor the groundwater quality as per groundwater monitoring plan. Proper maintenance of vehicles. Safe storage of chemicals, hydrocarbons and other pollutants. Remove sludge from package plant once every 2 – 3 months if inflow remains at high levels. Sludge to be removed by a vacuum truck and disposed of at a registered waste storage facility. 	2	2	2	3	1	3	30	L
Impacts on surface water volumes due to groundwater abstraction from the water supply borehole	Abstraction groundwater from supply borehole	2	2	1	1	1	1	7	L	Low	Negative	<ul style="list-style-type: none"> Monitor groundwater levels as per groundwater monitoring plan. Reduce water requirement where possible. Manage pump schedule to minimise prolonged periods of constant pumping. 	2	1	1	1	1	1	6	L
Impacts on surface quality due to poor quality seepage from the pollution source areas	Operation of VLNR Lodge	2	3	1	3	5	2	28	L	Low	Negative	<ul style="list-style-type: none"> Management of chemicals, food and nutrients. Maintain an effective Storm Water Management Plan. Undertake monthly inspections of the storm water management infrastructure as to confirm adequacy and that no damage to the infrastructure has occurred. Undertake maintenance activities immediately should there be signs of any damage or areas where erosion of soils is occurring. 	2	5	1	3	5	1	16	L
Soils																				
Loss of soils due to erosion from uncontrolled surface water run off at lodge and Lizzulea Dam	Operation of VLNR Lodge	4	5	1	4	4	4	72	M	Low	Negative	<ul style="list-style-type: none"> Maintain an effective Storm Water Management Plan. Undertake monthly inspections of the storm water management infrastructure as to confirm adequacy and that no damage to the infrastructure has occurred. Undertake maintenance activities immediately should there be signs of any damage or areas where erosion of soils is occurring. 	2	5	1	1	3	2	24	L
Biodiversity – Fauna and Flora																				
Continued fragmentation and degradation of habitats, ecosystems and CBA-1 areas	Operation of VLNR Lodge	7	5	2	3	3	4	80	MH	Medium	Negative	<ul style="list-style-type: none"> All exposed areas to be rehabilitated after construction is concluded. Rehabilitation of the disturbed areas must be made a priority. 	4	2	1	2	2	2	22	L
Spread of alien and/or invasive species	Operation of VLNR Lodge	5	4	3	3	3	3	54	M	Low	Negative	<ul style="list-style-type: none"> Follow existing alien management plan as per the De Beers Ecology Division, Overarching VLNR Management Plan. 	2	2	1	2	2	2	18	L
The conservation of the VLNR through the Lodge establishment and anticipated enhancement of environmental support and awareness.	Operation of VLNR Lodge	6	4	4	3	3	3	60	M	Low	Positive	<ul style="list-style-type: none"> Environmental Awareness Program must be compiled and implemented. 	8	4	4	2	4	4	88	MH
Introduction of nuisance vectors (pests) such as flies, rodents and baboons	Operation of VLNR Lodge	6	2	1	2	1	3	36	L	Low	Negative	<ul style="list-style-type: none"> Ensure the correct handling, storage and operation of general waste generated on the construction site. Remove general waste generated frequently as to prevent the development of a breeding habitat for nuisance pests such as flies, and attracting rodents and baboons. 	2	2	1	1	1	2	14	L

POTENTIAL ENVIRONMENTAL IMPACT	ACTIVITY	ENVIRONMENTAL SIGNIFICANCE BEFORE MITIGATION								Cumulative	Status	RECOMMENDED MITIGATION MEASURES/ REMARKS	ENVIRONMENTAL SIGNIFICANCE AFTER MITIGATION							
		Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance				Magnitude	Duration	Extent	Irreplaceability	Reversibility	Probability	TOTAL	Significance
Heritage																				
Impact on Archaeological Resource - Iron Age sites	Operation of VLNR Lodge	4	4	3	3	3	2	34	L	Low	Negative	<ul style="list-style-type: none"> Implementation of a heritage site development plan for the project. Include Site 2229AD 209 in the management of stormwater and erosion in the site management plan. 	4	4	3	3	3	1	17	L
Noise																				
No additional impacts are expected during the operational phase.																				
Air Quality																				
No additional impacts are expected during the operational phase.																				
Social																				
Benefits resulting from employment and income opportunities created by the construction of the lodge	Operation of VLNR Lodge	2	4	2	1	1	2	20	L	Low	Positive	<ul style="list-style-type: none"> Develop a clear and concise employment policy prioritising local employment. Employ local works if qualified applicants with the appropriate skills are available. Purchase goods and services at a local level if available 	4	4	2	1	1	3	36	L

Alternative (preferred alternative)

Refer to Table 12 and Table 13. Note the impacts for closure were not included as the Lodge will be a permanent facility.

3. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative A (preferred alternative)

The proposed VLNR Lodge project area is suitable for development and is not fatally flawed in any way. The construction and operational impacts, if effectively managed as per the mitigation measures recommended in this report, the specialist reports and the draft EMPr, will have a predominately low residual significance rating. Moderate post mitigation significance ratings are anticipated in terms of impacts on groundwater volumes due to groundwater abstraction. Positive impacts due to the development of the lodge include job creation and employment opportunities for both the construction and operational phases. Other positive impacts include the environmental and conservation awareness that will be created with guests staying at the Lodge.

Considering the above discussion, it is recommended that the proposed VLNR Lodge project be supported on the condition that all mitigation measures listed in this Basic Assessment Report, the specialist reports and the EMPr are implemented and adhered to throughout the project life.

No-go alternative (compulsory)

The no-go alternative is the option of not undertaking the proposed activity or any of its alternatives. Should the proposed Lodge development not go ahead, any potential environmental and heritage impacts, associated with construction and operation of the Lodge, would be avoided.

However, if the Lodge is not developed, the long term potential positive impacts will also not be realised, such as environmental awareness, proper upkeep and maintenance of the reserve and potential for eco-tourism. The positive impact expected from the Lodge, the associated environmental awareness and funds generated towards conservation, creates a scenario that if conducted correctly, the positives of the lodge outweigh the negatives of its construction.

Considering the above, as well as that all negative impacts can be adequately mitigated and managed, it is not recommended that the No-go Alternative be supported

Alternative B

Not applicable

Alternative C

Not applicable

For more alternatives please continue as alternative D, E, etc.

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment):

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the department in respect of the application:

The following recommendations were made by the specialists in their reports (refer to Appendix D).

Groundwater:

- A monitoring program should be implemented to monitor the volume of water abstracted, and the groundwater level in the water supply borehole. The groundwater specialists recommends that the groundwater level to be measured on a daily basis, but this will not realise in practice. It is recommend that the water level and volume of water abstracted be measured on a monthly basis. It is recommended that should any trend of decreasing groundwater levels over time be identified, one of two options be pursued:
 - Decrease the groundwater abstraction volumes; or
 - Installing an additional water supply borehole.
- Groundwater samples should be collected and submitted for chemical analysis in order to monitor the groundwater quality. From the groundwater chemical analysis results from this study, it can be seen that fluoride, sodium and cadmium are present in concentrations that can impact human health (the high chloride concentrations are expected to lead to scaling and salty taste to the water, but no human health impacts are expected). Groundwater samples should be monitored and include the following elements:
 - General parameters (pH, EC, Alkalinity, Hardness)
 - Major cations (Ca, Mg, Na, K);
 - Major anions (Cl, SO₄, NO₃, NH₄, PO₄, F);
 - Metals (Al, Fe, Mn, Cr, Cu, Ni, Zn, Co, Cd, Pb);
 - Biological / organic parameters (BOD, COD);
 - Bacteriological (Heterotrophic plate count).

Soils:

- Compacted areas are to be ripped to loosen the soil structure where necessary;
- Existing roads must be used as much as possible;
- Erosion mitigation strategies and proper stormwater management must be considered to limit erosion within the development footprint area;
- A rehabilitation strategy focussed on revegetation must be initiated after the construction phase; and
- Prevent any spills from occurring. Machines must be parked within hard park areas or dedicated storage areas

and must be checked daily for fluid leaks. Contractors must have spill kits available to address any unlikely spillages.

Vegetation:

- The mitigations and considerations regarding any infrastructure that may harm/impact or influence faunal species needs to be adhered to and done in conjunction with the Nature Reserve management plan. This pertains especially to any sensory impacts as well as impacts that may arise from new infrastructure within the area, for example the swimming pool may lead to small mammal deaths from drowning, the electrified fence strands (ground wire) that that may lead to the death of small ground dwelling fauna like Pangolin, Pythons and tortoises.
- The monitoring of the protected plant and tree species density and distribution. This will allow for the development of a management plan specific to these species.
- Environmental awareness and education for all staff and visitors regarding the protected plant and tree species, including tree tags and short infographics regarding these species and their importance.

Heritage:

- It is recommended that the recorded sites Waypoint 172, 2229AD 295, Waypoint 174, 2229AD 296, Waypoint 176, 177, 178, 2229AD 208 and 2229AD 209 should be retained in situ.
- Rerouting of the existing access road and rehabilitation of the current access road is a mitigation option but will potentially impact on other sites and is therefore not the preferred option. A better alternative will be to use the existing road as the impact has already occurred and to minimise further impact to the site. This will be subjected to a Section 35 permit as well as a management plan. There is no design report for the road but the intact deposit can be sealed by paving the area and including the management of stormwater and erosion in the site management plan.;
- Recorded heritage resources should be indicated on development maps and infrastructure should be located away from these areas.
- Implementation of a heritage site development plan for the project; and
- Implementation of a chance find procedure for the project (archaeology and palaeontology).

Is an EMPr attached?

The EMPr must be attached as Appendix F.

YES	NO
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SECTION F: APPENDIXES

The following appendixes must be attached as appropriate:

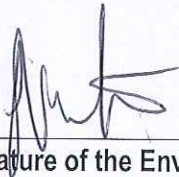
- Appendix A: Site plan(s)
- Appendix B: Photographs
- Appendix C: Facility illustration(s)
- Appendix D: Specialist reports
- Appendix E: Public Participation
- Appendix F: Environmental Management Programme (EMPr)
- Appendix G: Other information

SECTION G: DECLARATION BY THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

I, Suzanne van Rooy

declare that I –

- (a) act as the independent environmental practitioner in this application;
- (b) do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- (c) do not have and will not have a vested interest in the proposed activity proceeding;
- (d) have no, and will not engage in, conflicting interests in the undertaking of the activity;
- (e) undertake to disclose, to the competent authority, any material information that has or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the Environmental Impact Assessment Regulations, 2006;
- (f) will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- (g) will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the Department in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the Department may be attached to the report without further amendment to the report;
- (h) will keep a register of all interested and affected parties that participated in a public participation process; and
- (i) will provide the Department with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not.



Signature of the Environmental Assessment Practitioner: _____

Alta van Dyk Environmental Consultants cc
Name of company: _____

24/03/2021
Date: _____

SUID-AFRIKAANSE POLISIEDIENS
CLIENT SERVICE CENTRE
0021-03-24
OLIFANTSFONTEIN
SOUTH AFRICAN POLICE SERVICE

LEDET BA Report, EIA 2014, VLNR Lodge

Handwritten signature: Olifantse op 2021-03-24 om 12:00 al 12:00

(HANDTEKENING) KOMMISSARIS VAN EDE
(SIGNATURE) COMMISSIONER OF OATHS

Olifantse
VOLLE VOORNAME EN VAN IN DRUKSKRIF
FULL FIRST NAMES AND SURNAME IN BLOCK LETTERS

65 Main Road
BESIGHEIDSADRES (STRAATADRES)
BUSINESS ADDRESS (STREET ADDRESS) - 64

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APPENDIX A

Figure 1: Locality Map

Figure 2: Property Boundary Map

Figure 3: Vegetation Sensitivity Map

Figure 4: Vegetation sensitivity map (including plant Species of Conservation Concern (SCC))

Figure 5: 1:100 floodline

Figure 6: Recorded Archaeological Sites

APPENDIX B: PHOTOGRAPHS

APPENDIX C: FACILITY ILLUSTRATION

APPENDIX D: SPECIALIST REPORTS

APPENDIX D1: SPECIALIST DECLARATION FORMS

APPENDIX D2: GROUNDWATER

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APPENDIX D7: SURFACE WATER

APPENDIX E: PUBLIC PARTICIPATION

APPENDIX E1: COMMENT AND RESPONSE REPORT

APPENDIX E2: PRE-APPLICATION MEETING PRESENTATION

APPENDIX E3: MINUTES OF PRE-APPLICATION MEETINGS

APPENDIX E4: BACKGROUND INFORMATION DOCUMENT

APPENDIX E5: NOTIFICATION LETTER

APPENDIX E6: PROOF OF EMAILING NOTIFICATION LETTERS

APPENDIX E7: PROOF OF SITE NOTICE

APPENDIX E8: PROOF OF ADVERTISEMENT

APPENDIX E9: LIST OF STAKEHOLDERS

APPENDIX E10: COMMENTS RECEIVED

APPENDIX F: ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX G: OTHER INFORMATION

APPENDIX G1: GEOTECHNICAL STUDY

APPENDIX G2: SPECIAL CONSENT APPLICATION LETTER

APPENDIX G3: ENGINEERING SERVICE REPORT