BASIC ASSESSMENT REPORT IN TERMS OF NEMA

PROPOSED VEGETATION CLEARANCE (ACTIVITY 12 OF LISTING 3) AND DEVELOPMENT OF SELF-STANDING UNITS AND GUEST LODGE (ACTIVITY 6 OF LISTING 3) WITH ASSOCIATED ROADS (ACTIVITY 4 OF LISTING 3) ON ERF 185 OLIFANTSNEK JQ, RUSTENBURG LOCAL MUNICIPALITY, BOJANALA PLATINUM DISTRICT MUNICIPALITY, NORTH WEST PROVINCE.

NWP/EIA/38/2022

AUGUST 2022

(FINAL)

Address: P.O. Box 1322, Ruimsig, 1732

Tel: 082 850 5482

Fax: 086 692 8820

paulette@hydroscience.co.za

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- NW NEMA project list

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- Cultural Heritage: Archaetnos Culture & Cultural Resource Consultants, 2022. Letter for HIA exemption request: Proposed vegetation clearance (Activity 12 of Listing 3) and development of self-standing units and guest lodge (Activity 6 of Listing 3) with associated roads (Activity 4 of Listing 3) on Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province. 24 May 2022
- Palaeontology: Dr J.F. Durand, 2022. Development on Erf 185 Olifantsnek, south of Rustenburg, Northwest Province. Desktop Study. 8 May 2022.
- Geohydrology: HK Geohydrological Services Pty Ltd, 2022. Hydrogeological study for Erven 185 of the farm Olifantsnek Township JQ, located in North West Province. June 2022. Report 2022/027.
- Traffic: EPS, 2022. Traffic Impact Assessment. Rezoning on Portion 185 Olifantsnek. Rustenburg Local Municipality. Client: Alpha Grande (Pty) Ltd. Prepared by: P Janse van Rensburg Pr. Eng. 20150482. Overseen by: W Engelbrecht Pr. Eng. 820135. Date: 10/08/2022. Report number: 4211-TIA-01

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LIST OF ACRONYMS AND ABBREVIATIONS AND DEFINITIONS

AIS	Alien and Invasive Species Regulations (2020)
Biodiversity	Diversity of genes, species and ecosystems on earth, and the ecological and evolutionary processes that maintain this diversity.
BPDM	Bojanala Platinum District Municipality
BPG	Best Practice Guidelines
CAPEX	Capital Expenditure
CARA	Conservation of Agriculture Resources Act, 1983 (Act 43 of 1983)
CBA	Critical Biodiversity Area (terrestrial and aquatic areas required to meet biodiversity targets for ecosystems, species or ecological processes, as identified in a systematic biodiversity plan)
CBD	Central Business District (centre of a town/city)
CRSA	Constitution of the Republic of South Africa, 1996 (Act 108 of 1996) – Section 24 relates to environment
CSIR	Council for Scientific and Industrial Research
DFFE	Department of Forestry, Fisheries and the Environment (national authority responsible for environmental protection and implementation of NEMA)
DOL	Department of Labour
DTI	Department of Trade and Industry
DWS	Department of Water and Sanitation (national authority responsible for water protection and implementation of NWA, custodian of South Africa's water resources)
EAP	Environmental Assessment Practitioner (independent consultant administering NEMA processes on behalf of applicant)
EAPASA	Environmental Assessment Practitioner Association of South Africa
ECA	Environment Conservation Act, 1989 (Act 73 of 1989) – preceded NEMA
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment (process required in terms of NEMA to obtain authorisation for listed activities)
EMF	Environmental Management Framework
EMP	Environmental Management Programme/Plan
EO	Environmental Officer
ERAP	Emergency Response Action Plan

ESA	Ecological Support Area (terrestrial and aquatic areas that are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of one or more Critical Biodiversity Areas; or in delivering ecosystem services).
GIS	Geographic Information System
GNR	Government Notice Regulation (notices published in Government Gazette in terms of already promulgated laws, legislated by government)
GNR 324	Amendment of GNR 985 - Listing 3 deals with activities requiring environmental authorisation due to sensitive locations
GNR 325	Amendment of GNR 984 - Listing 2 deals with activities requiring environmental authorisation due to expected higher environmental impact – requires full EIA (scoping and EIA)
GNR 326	Amendment of GNR 982 - EIA regulations – procedures / requirements
GNR 327	Amendment of GNR 983 - Listing 1 deals with activities requiring environmental authorisation due to expected lower environmental impact – requires Basic Assessment only
GPS	Global Positioning System
GVA	Gross Value Added
HIA	Heritage Impact Assessment
IAIA	International Association of Impact Assessment
IBA	Important Bird (and Biodiversity) Area – of international significance for conservation of birds as identified by BirdLife International.
I&APs	Interested and Affected Parties (as identified during the Public Participation Process)
IDP	Integrated Development Plan
IRP	Integrated Resource Plan
mamsl	Metres Above Mean Sea Level
LFPR	Labour Force Participation Rate
Listed Activities	Activities identified in terms of NEMA Sections 24 and 24D, which require environmental authorisation prior to commencement due to their potential environmental impacts. See GNR 324, 325, 326, 327
MAE	Mean Annual Evaporation
MAP	Mean Annual Precipitation
MBR	Magaliesberg Biosphere Reserve
MPE	Magaliesberg Protected Environment

NEMA	National Environmental Management Act, 1998 (Act 107 of 1998) – overarching environmental legislation in South Africa
NEM:AQA	National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)
NEM:PAA	National Environmental Management: Protected Areas Act, 2003 (Act 57 of 2003)
NEM:WA	National Environmental Management: Waste Act, 2008 (Act 59 of 2008)
NFEPA	National Freshwater Ecosystems Priority Area
NHRA	National Heritage Resources Act, 1999 (Act 25 of 1999)
NWA	National Water Act, 1998 (Act 36 of 1998)
NW DEDECT	North West Department Of Economic Development, Environment, Conservation & Tourism
NWPHRA	North West Provincial Heritage Resources Agency
OCHOA	Olifantsnek Community Home Owners Association
OHSA	Occupational Health and Safety Act, 1993 (Act 85 of 1993)
OPEX	Operational Expenditure
PPE	Personal Protective Equipment
PPP	Public Participation Process
PRECIS	National Herbarium Pretoria (PRE) Computerised Information System
QDGC	Quarter Degree Grid Cell
RLM	Rustenburg Local Municipality
SACNASP	South African Council for Natural Scientific Professions (body for the registration of professional natural scientists)
SAHRA	South African Heritage Resources Agency (authority responsible for implementation of NHRA)
SAHRIS	South African Heritage Resources Information System (electronic system onto which reports are loaded for comments from SAHRA)
SANBI	South African National Biodiversity Institute
SABS	South African Bureau of Standards
SANS	South African National Standards
SCC	Species of Conservation Concern
SDF	Spatial Development Framework

SDP	Site Development Plan
SHEQ	Safety, Health, Environment & Quality
SoE	State of the Environment Report
WCMR	Waste Classification and Management Regulations
WISA	Water Institute of Southern Africa
WUL	Water Use License

1 ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

1.1 Details

Company:	HydroScience CC
Registration Number:	2008/056910/23 14 March 2008
Postal address:	P.O. Box 1322 Ruimsig 1732
Email address:	paulette@hydroscience.co.za
Telephone number:	+ 27 (0) 82 850 5482
Fax number:	+ 27 (0) 86 692 8820
Contact person:	Ms Paulette Jacobs I.D. 680526 0104 08 4
Professional registration (Paulette Jacobs):	South African Council for Natural Scientific Professions (SACNASP): 400005/07 Environmental Assessment Practitioner Association of South Africa (EAPASA): 2020/357
Membership (Paulette Jacobs):	Water Institute of Southern Africa (WISA): 24906 International Association of Impact Assessment South Africa (IAIAsa): 5266

1.2 Experience and expertise

HydroScience CC was established in 2008 after Ms Paulette Jacobs acted as an independent consultant (sole proprietor) since 2000. HydroScience is an environmental, water and waste management solutions provider. Refer to Appendix A for a company profile.

Ms Paulette Jacobs obtained her qualifications from the Rand Afrikaans University in Johannesburg in 1990 and has been in the water, waste and environmental field for the last 32 years, first in research for seven (7) years at the Council for Scientific and Industrial Research (CSIR) and since then in consulting (Pulles, Howard and De Lange Water Quality Management Consultants, SRK Consulting, sole proprietor, HydroScience). Refer to Appendix A for Curriculum Vitae and qualification of Ms Paulette Jacobs. Ms Paulette Jacobs assisted Department of Water Affairs and Forestry (now Department of Water and Sanitation, DWS) to compile the Best Practice Guidelines (BPG) for water resource protection in the mining industry and has successfully completed many Water Use Licence (WUL) Applications in terms of the National Water Act (NWA), 1998 (Act 36 of 1998) as well as Environmental Impact Assessments (EIA) in terms of the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended for the industrial, retail, education, hospitality, commercial/business and residential sectors to obtain environmental authorisations,

Atmospheric Emissions Licenses (AEL) and Waste Management Licenses (WML) over the last 22 years. Refer to Appendix A for a project list of applications for environmental authorisation in the North West Province.

1.3 Supporting information

Appendix A contains:

- Company profile: HydroScience
- Curriculum vitae (Environmental Assessment Practitioner): Ms Paulette Jacobs
- Qualification: Ms Paulette Jacobs
- Professional affiliations: Ms Paulette Jacobs (SACNASP, EAPASA, WISA, IAIAsa)
- NW NEMA project list

1.4 Assumptions, limitations, disclaimer and copyright

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information at the time of compilation (May - June 2022). The report is based on survey and assessment techniques which are limited by time (one day on site) and budgetary constraints relevant to the type and level of investigation undertaken (Basic Assessment Process) and HydroScience and its staff / representatives reserve the right to modify aspects of the report if and when new information may become available from changes in legislation, on-going research or further work in this field, or pertaining to this investigation.

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Project description information contained in this report is based on information supplied by the client or client appointed sources. It has been assumed that the information provided to HydroScience is correct. Environmental data contained in this report is based on information supplied by specialists in their respective fields, as well as existing available information from official sources pertaining to the area in question (maps and reports published by the relevant government departments and agencies). It has been assumed that the information from these specialists or official sources is correct. HydroScience has therefore not checked or verified historical/existing information provided for correctness. HydroScience accepts no responsibility for incomplete or inaccurate data supplied by others (the client and external sources). Where gaps or obvious errors have been identified, these are noted for consideration by the applicant and/or authority.

The Alpha Grande (Pty) Ltd is responsible for the implementation of recommendations and HydroScience cannot and will not take responsibility for its actions or lack thereof.

1.5 Declaration of independence

I, **Paulette Jacobs**, declare that –

- I act as an independent environmental, water and waste consultant in this investigation;
- I have expertise in water, waste and environmental management, including knowledge of the relevant Acts, Regulations and any guidelines that have relevance to the investigation;
- I have performed the work relating to this investigation in an objective manner, even if this results in views and findings that are not favourable to any party involved;
- I have included the specialist studies provided to me in Appendices as well as summarised findings and recommendations in this report;
- I undertake to disclose all material information in my possession that reasonably has or may have the potential to influence this investigation, unless access to that information is protected by law, in which case it will be indicated that such information exists;
- I do not have any vested interest (either business, financial, personal or other) in the investigation other than fair remuneration for work performed; and
- I will provide the parties with access to all information at my disposal regarding the investigation, whether such information is favourable or not.

Signature: Paulette Jacobs

2 APPLICANT / PROPONENT

2.1 Details

Applicant:	The Alpha Grande (Pty) Ltd
Registration Number and Date:	2015 / 260115 / 07 23 July 2015
Postal address:	P.O. Box 31190 Wonderboompoort 0033
Physical address:	234 Green Street Mayville Pretoria 0084
Email address:	frans@odire.co.za
Representative:	Hlupheka Sithole I.D. 720707 5482 08 7 Cellular phone number: 082 322 3470

2.2 Supporting information

Appendix B contains:

- Power of Attorney with ID copy of Hlupheka Sithole, I.D. 720707 5482 08 7
- CIPC, The Alpha Grande (Pty) Ltd, 2015 / 260115 / 07
- Title deed, T000012543/2022

3 PROPERTY

3.1 Details

Province:	North West
District Municipality:	Bojanala Platinum District Municipality (BPDM) Contact person: Director: Tshepo Lenake Cellular number: 083 961 0591 Email: gtlenake@gmail.com
Local Municipality:	Rustenburg Local Municipality (RLM) P.O. Box 16 Rustenburg 0300 Tel: 014 590 3185 Fax: 014 590 3070 Contact person: Ms Kelebogile Mekgoe Cellular number: 072 585 9460 Email: kmekgoe@rustenburg.gov.za
Ward:	36 Councillor CK Serunye Cell: 060 434 1419
Ownership:	Title deed: T000012543/2022 (18 January 2022) The Alpha Grande (Pty) Ltd, 2015/260115/07
Land use:	Current Zoning: Public Open Space Use: Vacant Rezoning: Residential 1 Special for accommodation enterprise
Surrounding land uses:	North, West and South: Residential (Olifantsnek) West: Main Road & Rustenburg Educational College (REC) boarding East: MacKenzie Street & Olifantsnek Dam
Farm & portions:	Erf 185 Olifantsnek JQ
SG number:	T0JQ00220000018500000
Size:	9 398m^2
GPS locations: **Centre point**	25° 47’ 38.09” South 27° 14’ 42.38” East
Surrounding towns:	Rustenburg Central Business District (CBD): 13.3km north of site

Roads & access:	Access via R24 (756m east of site) into Olifantsnek area and then Main Road (directly east of site). Stubbs Street is north and Mackenzie Street is east of the site. Access to the property is from the gravel roads.
Services: Electrical	Supplier: Eskom
Services: Water	No municipal infrastructure in Olifantsnek. Source: Borehole drilled on site
Services: Sewage	No municipal infrastructure in Olifantsnek. Septic tank pumped (see Appendix F).

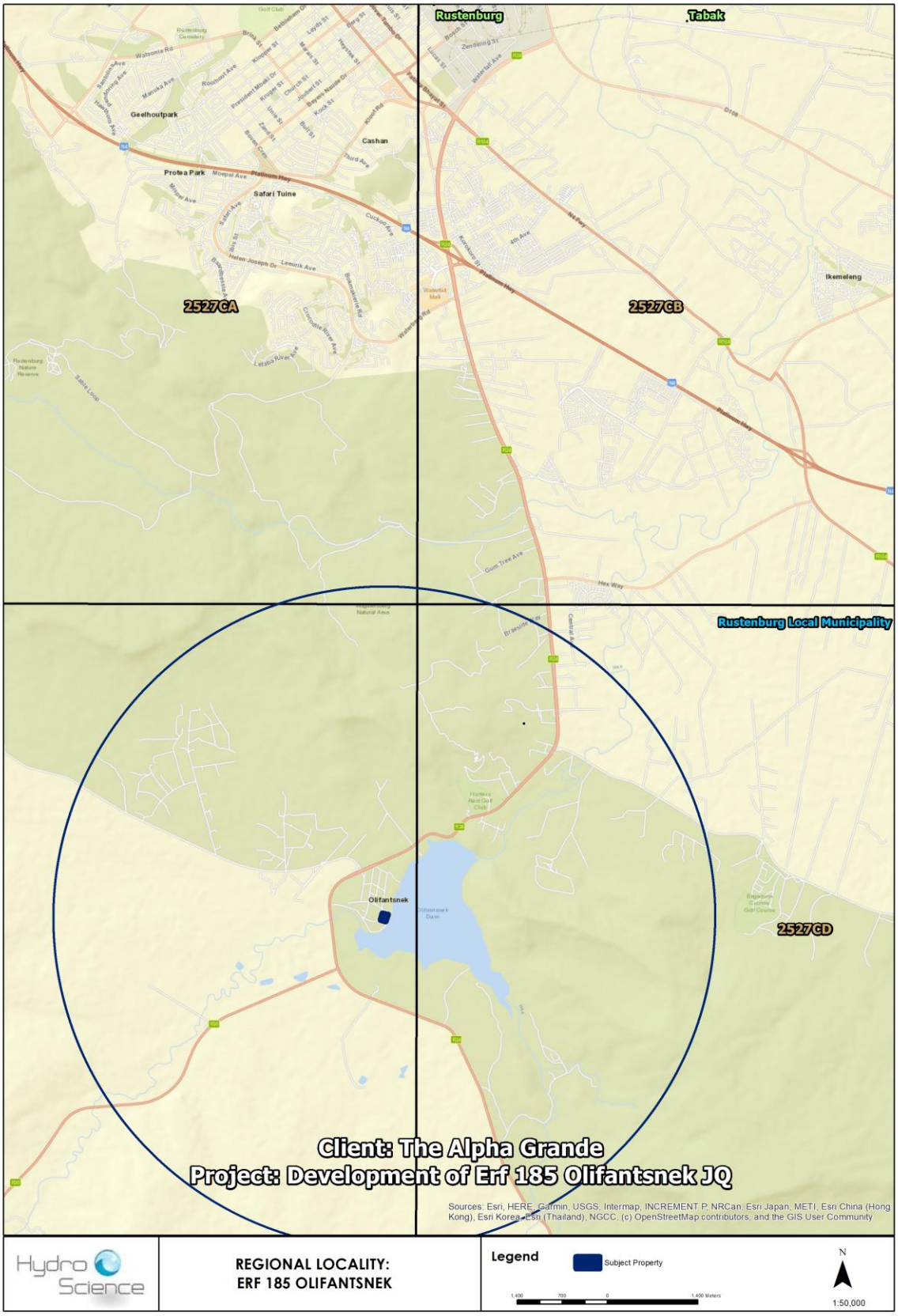


Figure 3-1: Property Regional locality

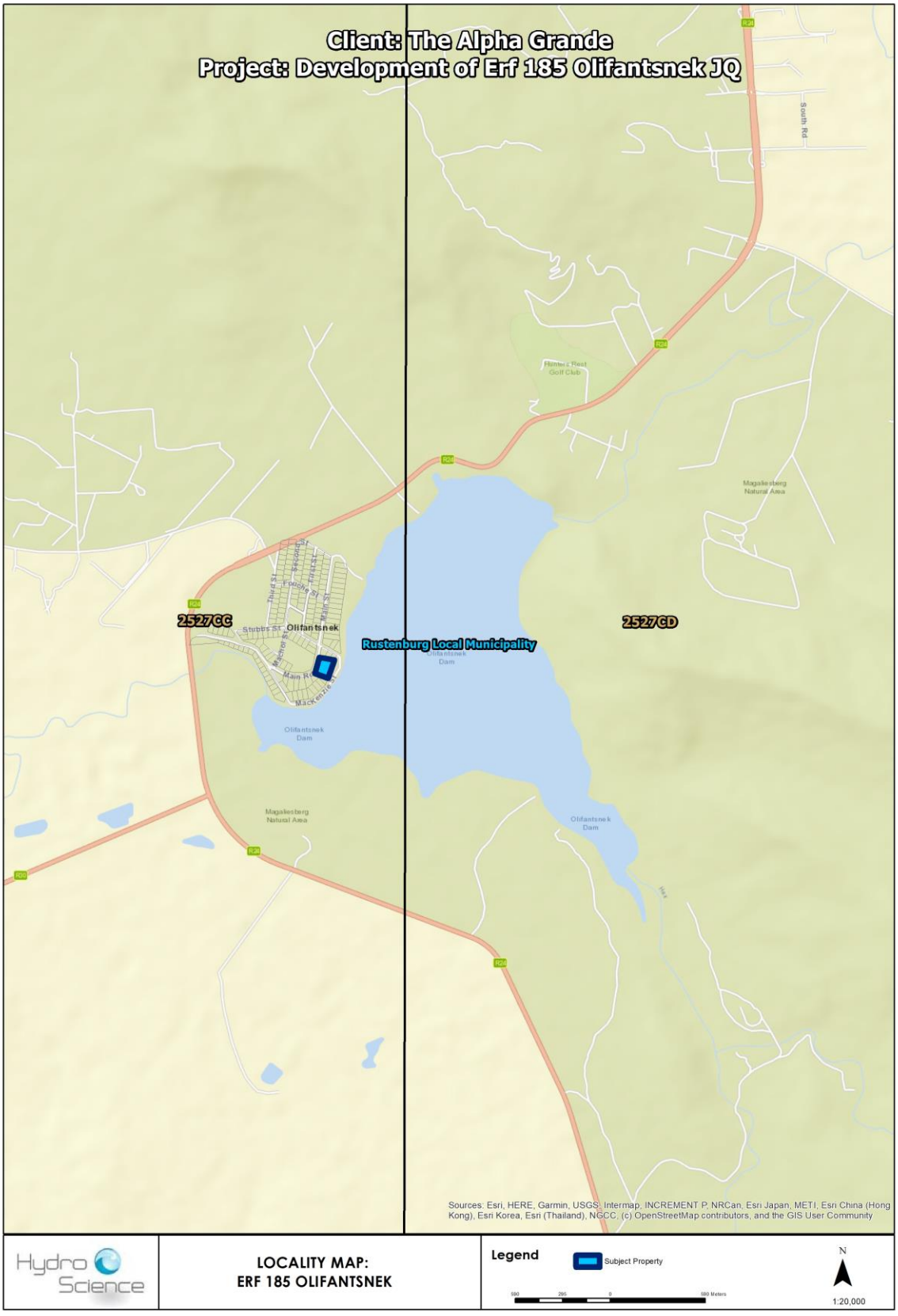


Figure 3-2: Property Local Locality

4 PROJECT

4.1 Project Description

Type:	Development for residential 1 and guest lodge.
Title:	Proposed vegetation clearance (Activity 12 of Listing 3) and development of self-standing units and guest lodge (Activity 6 of Listing 3) with associated roads (Activity 4 of Listing 3) on Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province.
Detailed description:	Property: The property, Erf 185 Olifantsnek JQ, of 9 398m^2 will be cleared of vegetation (Activity 12 of Listing 3) to allow for the development with associated roads (Activity 4 of Listing 3). The property which will be transformed, is zoned public open space (Activity 15 of Listing 3) and located within a Terrestrial Biodiversity Ecological Support Area (ESA) and an Aquatic Critical Biodiversity Area (CBA). Residential 1 development: Five (5) self-standing units will be developed on 5 398m^2. Guest lodge development: 20 guest lodge units will be developed on 4 000m^2 (Activity 6 of Listing 3) Other authorisations: A Water Use License (WUL) will be required from Department of Water and Sanitation (DWS) in terms of the National Water Act, 1998 (Act 36 of 1998) for Section 21 water uses relating to borehole water use (Section 21(a)) and sewage handling (Section 21 (e) and (g)) and due to proximity to the Olifantsnek Dam (Section 21 (c) and (i)).
Location: Centre point: **Four corners:**	25° 47’ 38.09” South 27° 14’ 42.38” East North West corner: 25° 47’ 35.89” South 27° 14’ 41.32” East North East corner: 25° 47’ 36.43” South 27° 14’ 44.65” East South East corner: 25° 47’ 40.11” South 27° 14’ 43.19” East South West corner: 25° 47’ 39.19” South 27° 14’ 40.30” East

Investment:	R25 million
Roads & access:	Access via R24 (756m east of site) into Olifantsnek area and then Main Road (directly east of site). Access onto the property will be from the gravel road through Class 5a local streets to the two (2) erven.
Services: Electrical	Supplier: Eskom
Services: Solid waste	Removal by RLM for off-site disposal.
Services: Water	Source: Borehole drilled on site
Services: Sewage	Septic tank pumped (see Appendix F). The septic tank is to be placed in the south western corner of the site for a negligible impact on groundwater quality.

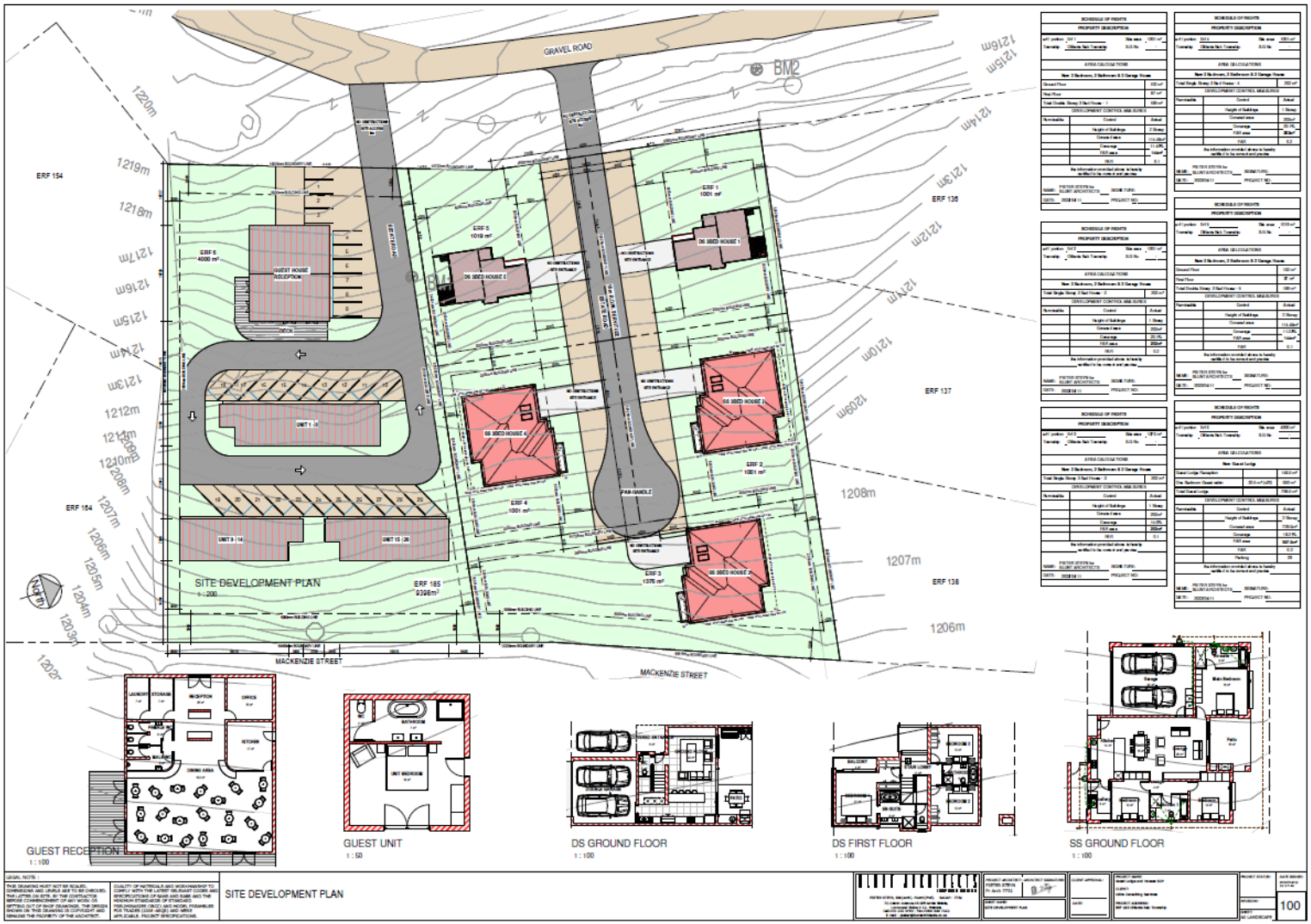


Figure 4-1: Site Development Plan (SDP) - Pieter Steyn

4.2 Screening

The Department of Forestry, Fisheries and the Environment (DFFE) screening tool was used and a screening report generated. The following came from the report:

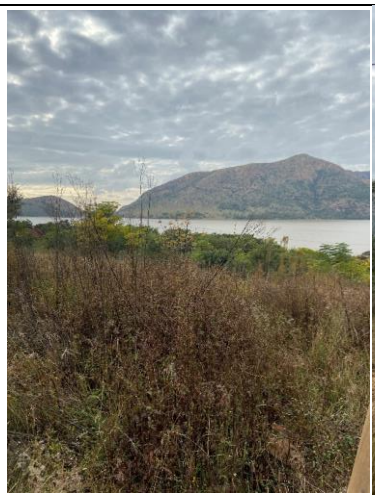
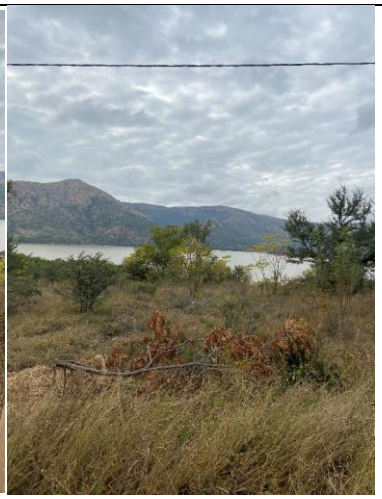
Aspect:	Sensitivity:	Requirement from other recent studies conducted on the site:
Environmental Management Framework (EMF)		No intersections with EMF found.
Agricultural	Low to Medium	Land capability: 01. Very low / 02. Very low / 03. Low-Very low / 04. Low-Very low / 05. Low Land capability: 06. Low-Moderate / 07. Low-Moderate / 08. Moderate Comments: Site located within a residential township and too small for agricultural use.
Animal	Medium	Mammalia: *Crocidura maquassiensis* (Vulnerable) – not recorded) *Dasymys robertsii* (African March Rats) – no wetlands, not recorded Sensitive species 12 Reptilia: *Kinixys lobatsiana* (Vulnerable) – not recorded, insufficient habitat. Comments: Refer to TBC, 2022 in Appendix D, confirmed as Medium due to above three (3) species possibly occurring.
Aquatic biodiversity	Very High	Aquatic Critical Biodiversity Area (CBA). Comments: Refer to TBC, 2022 in Appendix D, Olifantsnek Dam - Channelled valley bottom
Archaeological and Cultural Heritage	Low	Refer to Archaetnos Culture & Cultural Resource Consultants exemption letter, 2022 in Appendix D.
Civil aviation	High	Within 8km of civil aviation aerodrome. Comments: No concern, no impact based on planned project.
Defence	Low	No concern, no impact.
Palaeontology	High	Features with a Medium to High paleontological sensitivity.

Aspect:	Sensitivity:	Requirement from other recent studies conducted on the site:
		Comments: Refer to Durand, 2022 in Appendix D. Sedimentary rocks of this region have been subjected to thermal metamorphosis from the intrusion of diabase and the Bushveld Igneous Complex into the Transvaal Supergroup which probably destroyed delicate fossils. Apply chance find procedure.
Plant	Low	No concern. Comments: Refer to TBC, 2022 in Appendix D, confirmed as Low.
Terrestrial biodiversity	Very High	ESA1: Terrestrial areas that are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of one or more Critical Biodiversity Areas; or in delivering ecosystem services Comments: Refer to TBC, 2022 in Appendix D, disturbed in areas.

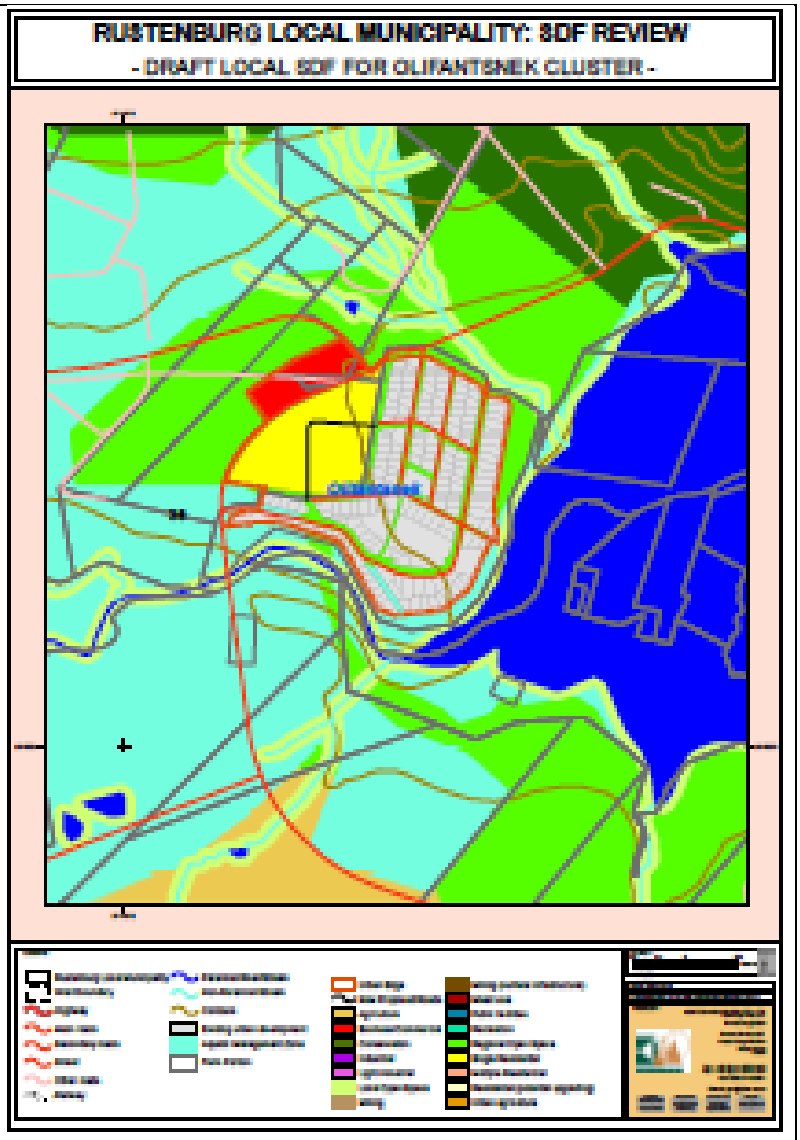
4.3 Need and desirability

Addressing need and desirability is a way of ensuring sustainable development. Therefore, the project must be ecologically sustainable and socially and economically justifiable.

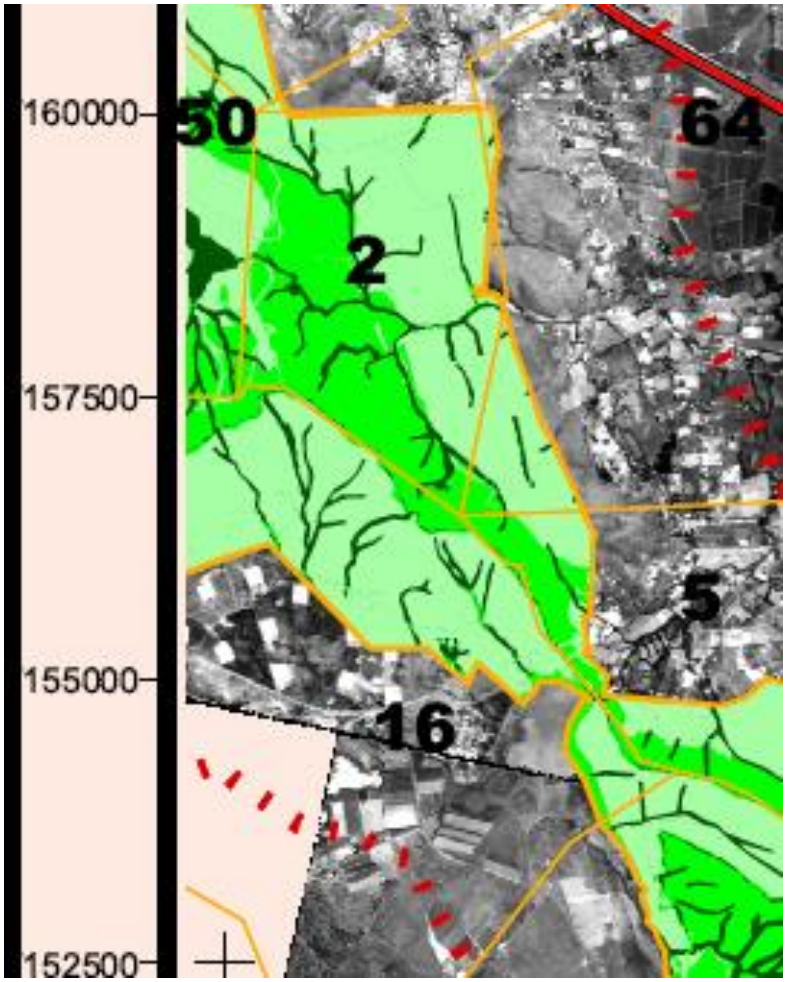
Economic investment by applicant:	R25 million
Capital value upon completion:	R35 million
Job creation:	150 people during the development phase 12 people during the operational phase
Fatal flaws:	No fatal flaws were identified and if the project is managed according to the Environmental Management Programme (EMPr), the impact on the environment will be moderate to low.
Market:	Tourists due to natural beauty of the area - Olifantsnek Dam and Magaliesberg Mountains as attractions. Beautiful view from the property.

	 
	
	Accommodation for
	• Tourists – international and national
	• Parents of the scholars of REC (from southern Africa) who visit the school to:
	  ○ Attend school events.
	  ○ Attend functions
	  ○ Collect children for holidays
	• Visitors to school for camps & functions:
	  ○ Guest speakers
	  ○ VIPs
	
	No other functioning guest lodge in Olifantsnek as could be determined.

Rustenburg Spatial Development Framework (SDF), 2010:	Purpose: To guide the form and location of future physical development within a municipal area. Review: RLM is planning to review the SDF since it should be able to change to reflect changing priorities. Development: Largest settlements that contain the majority of the urban population (70%), have developed within 20 km from Rustenburg. The Olifantsnek area is within 15km of Rustenburg. Plan: Part of Olifantsnek residential township (grey)

	
RLM Environmental Management Framework (EMF)	Outside the urban edge with no municipal services. Within the Olifantsnek residential township. The area does not overlap with an EMF according to the screening tool.
Magaliesberg Protected Environment (MPE) Environmental Management Framework (EMF) and Plan:	Site is not located within MPE.
North West Biodiversity Sector Plan, 2015:	**Terrestrial: ESA 1.** Maintain in at least a semi-natural state as ecologically functional landscapes that retain basic natural attributes: • Ecosystem still in a natural, near-natural state or semi-natural state, and has not been previously developed. • Ecosystems moderately to significantly disturbed but still able to maintain basic functionality.

	• Individual species or other biodiversity indicators may be severely disturbed or reduced. • These are areas with low irreplaceability with respect to biodiversity pattern targets only. **Aquatic: CBA.** Maintain in a natural or near-natural state that maximises the retention of biodiversity pattern and ecological process: • Ecosystems and species fully or largely intact and undisturbed. • These are areas with high irreplaceability or low flexibility in terms of meeting biodiversity pattern targets. If the • biodiversity features targeted in these areas are lost then targets will not be met. • These are biodiversity features that are at, or beyond, their limits of acceptable change. Table 13: 3. Tourism & Accommodation – restricted – site-specific conditions & controls. Same as for open space.
Magaliesberg Biosphere Reserve (Introducing Magaliesberg Biosphere Zones):	The property is located within the **buffer zone** of the Magaliesberg Biosphere Reserve (MBR). Buffer zones are predominantly natural or near natural areas and ecologically sensitive areas with clearly defined boundaries and formal administrative status. <u>Buffer zones:</u> Areas, which usually surround or adjoin the core areas. Aimed at supporting the environmental integrity of the Core Area. <u>Land uses and activities:</u> Conservation and maintenance of ecosystems, nature-based recreation, eco-tourism, primary dwellings, new developments and small resorts coupled to conservation areas that are compliant with the EIA regulations. Only activities compatible with the conservation objectives of the MBR. <u>Protection level:</u> No formal legal protection. <u>Evaluation criteria:</u> • Location is appropriate in terms of accessibility (existing roads, R24 and Main Road) and surrounding land use (Olifantsnek residential area, school and sports fields) and therefore blends into the landscape. • Refer to EMPr for waste management and services as well as management and monitoring plan. • Natural landscape and biodiversity are not conserved within the Olifantsnek township. • No archaeological, paleontological and cultural heritage resources to conserve. • Reuse of treated sewage for irrigation in terms of conservation of natural resources since groundwater will

	be abstracted as water supply source. The MBR board evaluated the proposed project (see attached comments in Appendix F).  Location in MBR buffer (indicated by broken red lines) The buffer zone is for projects, which are socio-culturally and ecologically sustainable.
Bojanala Platinum District Municipality (BPDM) EMF:	No information.

5 LEGAL FRAMEWORK

5.1 Constitution of the Republic of South Africa (CRSA)

The Constitution of the Republic of South Africa (CRSA), 1996 (Act 108 of 1996) places a duty on the State to protect the environment. Section 24 states that:

"Everyone has the right

a. to an environment that is not harmful to their health or well-being; and
b. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that
   i. prevent pollution and ecological degradation;
   ii. promote conservation; and
   iii. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development."

The right in the CRSA is given effect in several articles of national legislation including the National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended.

5.2 National Environmental Management Act (NEMA)

The National Environmental Management Act (NEMA), 1998 (Act 107 of 1998) as amended is the overarching environmental legislation in South Africa.

5.2.1 Sustainable development

The principle of Sustainable Development has been established in the CRSA and given effect by the NEMA. Section 1(29) of NEMA states that sustainable development means the integration of social, economic and environmental factors into the planning, implementation and decision-making process so as to ensure that development serves present and future generations. Thus, Sustainable Development requires that:

- The disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied.
- That the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied.
- That waste is avoided, or where it cannot be altogether avoided, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner.
- That a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions.
- Negative impacts on the environment, on people's environmental rights be anticipated; and, prevented, and where they cannot altogether be prevented, are minimised and remedied.

Duty of care is addressed in Section 28 of the NEMA.

In terms of sustainable development:

- ***The disturbance of ecosystems, loss of biological diversity and the disturbance of landscapes and sites that constitute the nation's cultural heritage are avoided through the development of an erf in a developed residential township.***
- ***Waste cannot be avoided in a development of this nature but waste will be handled as per the Environmental Management Programme (EMPr) and will be collected by a contractor and disposed of to a licensed waste disposal facility.***
- ***Other potential negative impacts identified will also be managed through the EMPr.***

5.2.2 NEMA regulations

Government Notice Regulation (GNR) 982, 983, 984 and 985 of 4 December 2014 contain the latest regulations pertaining to Environmental Impact Assessment (EIA) under sections 24(5), 24M and 44 of the NEMA. These were amended / updated on 7 April 2017 under GNR 324, 325, 326 & 327.

GNR 982 as amended / updated in GNR 326 stipulate requirements in terms of processes to be followed and information to be included in documentation.

GNR 983 as amended / updated in GNR 327 was considered and no applicable activities were identified.

GNR 984 as amended / updated in GNR 325 was considered and no applicable activities were identified.

GNR 985 as amended / updated in GNR 324 was considered and the following applicable activities were identified.

5.2.3 Listed activities applicable

The following listed activities require environmental authorisation:

GNR & Date	Activity Number and Description	Project Description
GNR 985 as amended / updated in GNR 324 of 7 April 2017	Activity 4: The development of a road wider than 4 metres with a reserve less than 13.5 metres. h. North West iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	Internal roads will be wider than 4m with a reserve less than 13.5m. Roads will be approximately 6m wide. The property is located within a Terrestrial Biodiversity ESA and an Aquatic Critical Biodiversity Area (CBA).
	Activity 6: The development of resorts, lodges, hotels, tourism or hospitality facilities that sleeps 15 people or more. h. North West	The development will include five (5) self-standing units on 5 398m^2 and 20 guest lodge units on 4 000m^2. The property is located within a Terrestrial Biodiversity ESA and an Aquatic CBA.

GNR & Date	Activity Number and Description	Project Description
	iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	
	Activity 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. h. North West iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.	The property of 9 398m^2 will be cleared of vegetation to allow for the development. The property is located within a Terrestrial Biodiversity ESA and an Aquatic CBA.
	Activity 15: The transformation of land bigger than 1000 square metres in size, to residential, retail, commercial, industrial or institutional use, where, such land was zoned open space, conservation or had an equivalent zoning on or after 02 August 2010.	The property of 9 398m^2 will be transformed. 5 398m^2 will be rezoned for residential 1 purposes. The property is currently zoned open space.

5.3 National Environmental Management: Biodiversity Act (NEMBA)

5.3.1 Commitment to biodiversity conservation

Although South Africa became a signatory to the Convention of Biological Diversity in 1998, the subsequent enactment of national legislation has affirmed our country's commitment to biodiversity and conservation as required in the CRSA. The National Environmental Management: Biodiversity Act (NEMBA), 2004 (Act 10 of 2004) has been promulgated by the South African President and was published in the Government Gazette in June 2004 (Volume 467; No. 26426). One of the objectives of this Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and to ensure the sustainable use of indigenous biological resources.

The Act, in protecting biodiversity, deals with:

- the protection of threatened ecosystems and species;
- the control of alien invasive species;
- the control of genetically modified organisms; and
- regulates bioprospecting.

As with NEMA, NEMBA incorporates and gives effect to international agreements relating to biodiversity.

5.3.2 Protection of threatened ecosystems and species

Ecosystems that are Critically Endangered, Endangered or Vulnerable can be listed in terms of Section 52 of the Act as threatened ecosystems at both national and provincial level. For example, Critically Endangered ecosystems are defined in the Act as being 'ecosystems that have undergone severe degradation of ecological structure, function or composition as a result of human intervention and are subject to an extremely high risk of irreversible transformation'. Importantly, any land-use change application occurring within an ecosystem listed as Critically Endangered or Endangered will automatically require environmental authorisation.

The site is located in a terrestrial biodiversity ESA 1 according to the screening tool. These are terrestrial areas that are not essential for meeting biodiversity targets but play an important role in supporting the ecological functioning of one or more Critical Biodiversity Areas (CBA); or in delivering ecosystem services. The site is located in an aquatic CBA according to the screening tool. These areas are required to meet biodiversity targets for ecosystems, species or ecological processes, as identified in a systematic biodiversity plan.

Threatened or Protected Species Regulations of 2013 (GNR388 of 2013): Part 2 of NEMBA provides for listing of species that are threatened or in need of protection to ensure their survival in the wild, while regulating the activities, including trade, which may involve such listed threatened or protected species and activities which may have a potential impact on their long-term survival. In February 2007, the Minister of Environmental Affairs and Tourism published a list of Critically Rare, Endangered, Vulnerable and Protected Species, according to Section 56(1) of the Act, which was updated again in 2013.

No threatened or protected species were identified during the terrestrial biodiversity study (TBC, 2022).

5.3.3 Control of alien invasive species

The list of alien and invasive species is intended to provide a legal framework to manage and control alien species that are considered invasive and that have the potential to threaten biodiversity, water resources and agricultural potential. NEMBA has identified all species that should be considered as alien or invasive species, as well as the restricted activities relating to each species. It is required by law (from 1 October 2014), for landowners to investigate the type and extent of alien invasive species growing on their property and to implement an effective control and eradication management plan.

Refer to Alien and Invasive Species Regulations, 2020 (GNR1020). An alien invasive eradication programme must be compiled in order to control alien and invasive vegetation on site during construction and operation. The site will be cleared of all vegetation to allow development.

The following alien and invasive species were found on the property (TBC, 2022) and need to be eradicated:
NEMA Category 1b:

- *Argemone ochroleuca* (White flowered Mexican poppy)
- *Ipomoea purpurea* (Common Morning Glory)
- *Lantana camara* (Lantana)
- *Melia azedarach* (Syringa)
- *Nicotiana glauca* (Wild Tobacco)
- *Verbena bonariensis* (Tall Verbena)

NEMBA Category 2b or 3:

- *Agave sisalana* (Sisal)
- *Morus alba* (White mulberry)

5.4 National Environmental Management: Protected Areas Act (NEMPAA)

The National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act 57 of 2003) provides protection for ecologically viable areas representative of South Africa's biodiversity. The Magaliesberg Mountain Range, is a protected area in terms of the NEM:PAA The Environmental Management Framework (EMF) and Plan for the Magaliesberg Protected Environment (MPE) is aimed at addressing the requirements of an EMF as contemplated in the 2014 EIA Regulations, as well as the basic components of a Management Plan for a protected area as described in Section 41 of the NEM:PAA.

The Management Plan component is specifically applicable to the MPE, whereas the EMF considers the interaction of the MPE with its surrounding areas.

The project area is not located within the MPE (MPE is approximately 500m north).

5.5 National Environmental Management: Waste Act (NEMWA)

In terms of the National Environmental Management: Waste Act (NEMWA), 2008 (Act 59 of 2008), the following is relevant to this project:

- GNR 926 of 29 November 2013. National Norms and Standards for the Storage of Waste.

The storage of waste material on the site before off-site recycling and disposal has to comply with these Norms and Standards.

5.6 National Water Act (NWA)

5.6.1 Water uses

The National Water Act (NWA), 1998 (Act 36 of 1998) Section 21 defines water use as:
(a) taking water from a water resource.
(b) storing water.
(c) impeding or diverting the flow of water in a watercourse.
(d) engaging in a stream flow reduction activity contemplated in section 36.

(e) engaging in a controlled activity identified as such in section 37(1) or declared under section 38(1).
(f) discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit.
(g) disposing of waste in a manner which may detrimentally impact on a water resource.
(h) disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process.
(i) altering the bed, banks, course or characteristics of a watercourse.
(j) removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people.
(k) using water for recreational purposes.

No municipal services in terms of water supply and sewage management are available in Olifantsnek. Water will therefore be obtained from a borehole drilled on site (Section 21 (a)) and sewage will have to be collected in septic tanks which will be pumped for off-site treatment (Section 21 (g)).

5.6.2 Legal requirements

The NWA states in Section 22 (1) that a person may only use water –
(a) without a licence –
  (i) if that water use is permissible under Schedule 1;
  (ii) if that water use is permissible as a continuation of an existing lawful use; or
  (iii) if that water use is permissible in terms of a general authorisation issued under section 39;
(b) if the water use is authorised by a licence under this Act; or
(c) if the responsible authority has dispensed with a licence requirement under subsection (3).

An application for a water use license (WUL) will be required in terms of Section 21 (a) water supply from borehole, Section 21 (g) in terms of sewage storage in septic tanks and Section 21 (c) and (i) due to proximity to the Olifantsnek Dam.

eWULaas reference: WU26056

5.7 Conservation of Agricultural Resources Act (CARA)

Conservation of agricultural potential:
The aim of the Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983) is to provide for control over the utilization of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

To achieve this aim, the following objectives are included:
- To provide for the conservation of the natural agricultural resources of the Republic by the maintenance of the production potential of land;
- The combating and prevention of erosion and weakening or destruction of the water sources, and
- The protection of the vegetation and the combating of weeds and invader plants.

The property is not zoned agricultural, located within a residential township and too small for agricultural use.

5.8 National Heritage Resources Act (NHRA)

5.8.1 Legislation

The National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999) requires protection of the following cultural heritage resources:

a. Archaeological artifacts, structures and sites older than 100 years;
b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography;
c. Objects of decorative and visual arts;
d. Military objects, structures and sites older than 75 years;
e. Historical objects, structures and sites older than 60 years;
f. Proclaimed heritage sites;
g. Grave yards and graves older than 60 years;
h. Meteorites and fossils; and
i. Objects, structures and sites of scientific or technological value.

The national estate includes the following:

a. Places, buildings, structures and equipment of cultural significance;
b. Places to which oral traditions are attached or which are associated with living heritage;
c. Historical settlements and townscapes;
d. Landscapes and features of cultural significance;
e. Geological sites of scientific or cultural importance;
f. Archaeological and paleontological importance;
g. Graves and burial grounds;
h. Sites of significance relating to the history of slavery; and
i. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military, ethnographic, books etc.).

Sedimentary rocks of this region have been subjected to thermal metamorphosis from the intrusion of diabase and the Bushveld Igneous Complex into the Transvaal Supergroup which probably destroyed delicate fossils. Apply chance find procedure (Durand, 2022).

Exemption application in terms of archaeology and cultural heritage.

5.9 Other documents

The following documents were also considered:

- Bojanala Platinum District Municipality (BPDM) Environmental Management Framework (EMF), 13 DEDECT 33/2016 and CEM 2017/052, dated October 2019, June 2020.
- Department of Environmental Affairs (DEA), 2017. Integrated Environmental Management Guideline. Guideline on need and desirability. ISBN 978-0-9802694-4-4.
- DEA, 2017. Public participation guideline in terms of NEMA, 1998 EIA regulations. ISBN 978-0-9802694-2-0.
- Magaliesberg Biosphere (NPC 2012/047491/08), Introducing Magaliesberg Biosphere Zones – A reference to guidelines for developments in the Magaliesberg Biosphere and the Magaliesberg Protected Environment.
- MPE Environmental Management Framework (EMF) and Plan.
- North West Biodiversity Sector Plan, 2015.
- Rustenburg Spatial Development Framework (SDF), North West, 2010 to determine if the project is in line with spatial development plans and environmental management frameworks developed by the municipality. In the process of being updated.

6 ENVIRONMENTAL SETTING

6.1 Socio-economic Environment

Province:	North West (NW)
District Municipality:	Bojanala Platinum District Municipality (BPDM) Includes Local Municipalities of Rustenburg, Madibeng, Kgetlengriver, Moses-Kotane and Moretele.
Local Municipality:	Rustenburg Local Municipality (RLM) The RLM is responsible for the planning and administration of infrastructure and development located within the boundaries of the Municipality. This includes the preparation (or preparation on their behalf) of all legally required documents for the planning, provision and control of infrastructure and spatial development. These include a Spatial Development Framework, 2010 (SDF), Integrated Development Plan (IDP), Integrated Transport Plan, 2008, Water Services Development Plan, 2009, Disaster Management Plan, 2007 and others (RLM, 2010). Area: 342 061ha Natural areas: 208 171ha (60.9%) Administrative bodies with jurisdiction: BPDM, RLM, and the Royal Bafokeng Administration (RLM, 2010)
Roads:	RLM is accessible to major South African urban centres such as Johannesburg and Tshwane (Pretoria), both of which are located approximately 120 km from Rustenburg (RLM, 2010). Rustenburg is linked to the above urban centres through an extensive regional road network. The most notable of these is the N4 freeway or Platinum Corridor, which links Rustenburg to Tshwane (Pretoria) to the east and Swartruggens and Zeerust to the west. The R24 links Rustenburg to the N14 and Johannesburg to the south and the Pilanesberg to the north (RLM, 2010). Urban development in the region is largely attributed to two provincial roads traversing the municipal area, namely: the Rustenburg / Sun City road (R565) that links Rasimone, Luka and Phokeng to Rustenburg; and the Rustenburg / Thabazimbi road (R510) that links Tlaseng, Kanana and Boitekong to Rustenburg (RLM, 2020).

	The project area is accessed from the R24 into the Olifantsnek area then via Main Road.
Population:	395 000 in 2001 to nearly 450 000 in 2007 to 645 000 in 2017 (RLM, 2020). This number is shown to have increased to 719 000 in 2020 (RLM Draft, 2022). RLM represents 37.9% of the total population in the BPDM. Population growth averaged 3.05% per annum between 2007 and 2017 (RLM, 2020). <u>Households:</u> 25.6% increase was nearly double that of the population figures, translating into a household growth rate of 4.3% per annum. This may imply that many extended households who have possibly lived in single dwellings have established themselves as separate households over this period, hence the large growth in households. A further possible explanation may be that many of the single male population employed by the mining sector in the area may have been joined by their families over the analysis period (RLM, 2010). In 2020, the number of households increased to 239 000 households. This equates to an average annual growth rate of 3.12% in the number of households from 2010 to 2020 (RLM, 2020). <u>Urbanisation:</u> Approximately 84% of the RLM population can be classified as urbanized, residing in either urban or rural settlements. Only 10% of the total population lives on farms (RLM, 2010). <u>Settlement Patterns:</u> Four (4) broad types of settlements can be described in the RLM, namely Formal Urban, Tribal (Bafokeng tribal land), Rural and Informal (24 000 households mainly along the mining belt and close to mine shafts) (RLM, 2020). <u>Relocation:</u> 80 818 people have relocated in the period between 1996 and 2001. This represents approximately 20% of the 2001 population. These migration movements, however, also include movements within the provincial boundaries. The total number of people relocating between 2001 and 2007 was 10 7862 (representing approximately 24% of the 2007 population). The majority of the population in RLM who relocated, represents internal movements within the province. Internal relocations within the province accounted for 64% of all migration

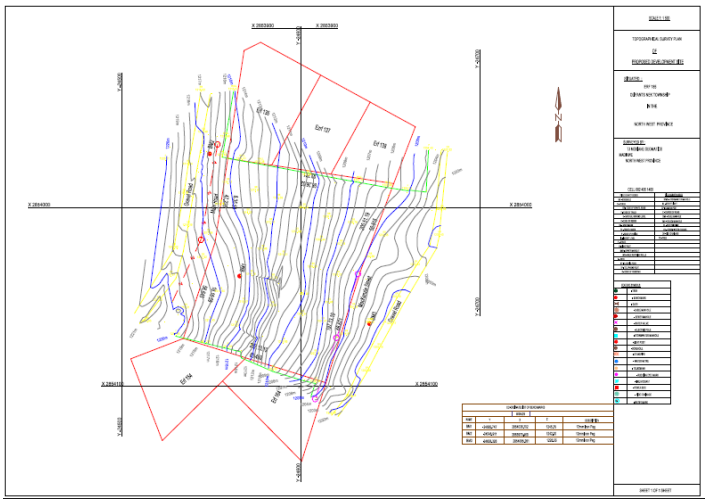
	to Rustenburg in the period 1996 to 2001 and increased to 72% over the period 2001 to 2007. The main source of immigrants from outside the provincial boundaries over the period 1996 to 2001 was from the Eastern Cape and Gauteng, both representing 11% of immigrants to the Rustenburg area. These two (2) provinces also remained the main source of immigrants over the period 2001 to 2007 during which 8% of immigrants originated from Gauteng and 6% from the Eastern Cape (RLM, 2010). The area appears to be a migrant receiving area, with most people migrating into Rustenburg, either from abroad, or from the more rural areas in the country seeking better opportunities (RLM, 2020). ***Olifantsnek has a population of 204 people in 92 households.***
Demographics:	Age: Most of the population fell within the young working age (25 - 44 years) category with a total number of 265 000 people or 41.1% of the total population. Babies and children (0 - 14 years) account for 24.3%, followed by the older working age (45 - 64 years) category with 104 000 people. Retired / old age (65 years and older) account for only 22 700 people (RLM, 2020). In 2020, the working age population was 524 000 people, increasing at an average annual rate of 3.05% since 2010. For the same period, the working age population for BPDM increased at 2.45% annually, while that of North-West Province increased at 1.75% annually (RLM Draft, 2022). Gender: Male/female split in population was 118.4 males per 100 females in 2017. RLM has significantly more males (54.21%) relative to South Africa as a whole (48.95%), and is considered to have a stable population. This gender split can be attributed to the dominance of physical labour-intensive industries such as mining. In total there were 295 000 (45.79%) females and 350 000 (54.21%) males. (RLM, 2020).
Education:	It is generally recognized that the skills profile of a particular area has a significant influence on the economic performance and growth of that region. Significant progress has been made with the eradication of adult illiteracy (decreasing from proximately 12% to 6.7%).

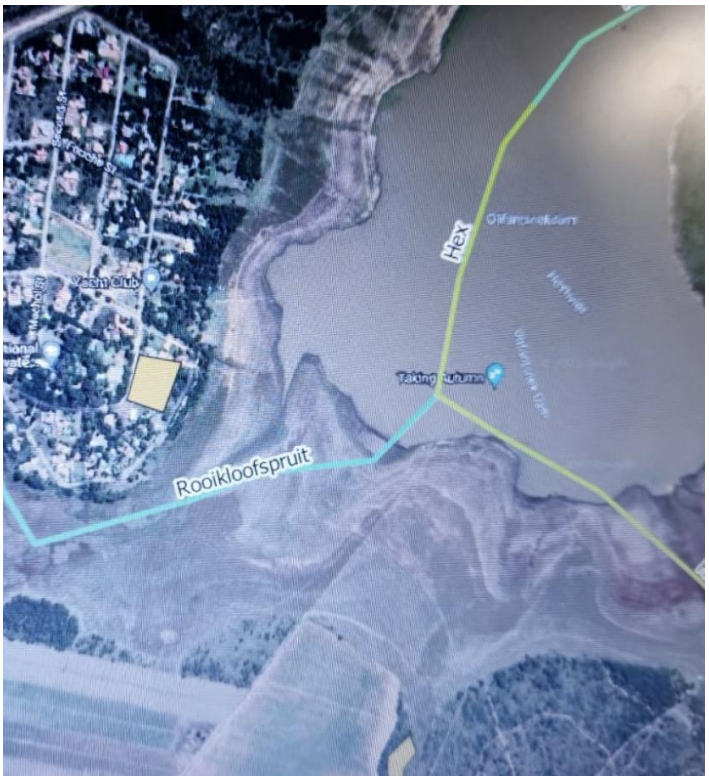
	In 2020, the number of people without any schooling accounted for 30.82% of the number of people without schooling in the BPDM, 9.17% of the North-West province and 0.94% of the SA national. The number of people with matric was 178 000. People with matric and a degree constituted 42.37% of the BPDM, 17.44% of the North-West province and 0.91% of the SA national (RLM Draft, 2022).
Employment:	The number of formally employed people was 186 000 in 2020, which is about 86.02% of total employment, while the number in the informal sector amounted to 30 200 or 13.98% of the total employment. Informal employment increased from 18 400 in 2010 to an estimated 30 200 in 2020 (RLM Draft, 2022). The labour force participation rate (LFPR) is the economically active population expressed as a percentage of the total working age population. The 2020 LFPR for Rustenburg was 58.5% which is slightly lower when compared to 60.7% in 2010 (RLM Draft, 2022). The economically active population was 307 000 in 2020, which is 42.7% of its total population of 719 000. From 2010 to 2020, the average annual increase in the economically active population was 2.67% (RLM Draft, 2022).
Unemployment:	In 2020, a total number of 94 600 people were unemployed in Rustenburg, which is an increase of 43 300 from 51 300 in 2010. The total number of unemployed people within RLM represents 38.41% of the total number of unemployed people in the BPDM. The unemployment rate increased at an average of 6.31% annually, which is worse than that of the BPDMwhich in comparison experienced a 5.29% annual increase (RLM Draft, 2022).
Economic structure:	The economic, social and physical characteristics of Rustenburg have been largely influenced by the presence of mining activities. In 2020, the mining sector employed the highest number of people (68 200 people) which translated to 31.6% of total employment in the RLM. The trade sector with a total of 39 000 people (18.1%) employed the second highest number of people relative to the rest of the sectors. The electricity sector with 688 (0.3%) is the sector that employed the least number of people in RLM, followed by the agriculture sector with 5 580 (2.6%) people employed (RLM Draft, 2022).

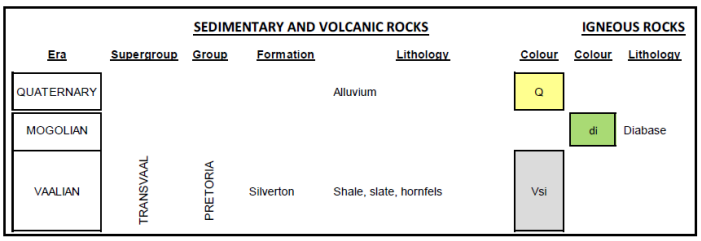
	The spatial concentration of economic activities is concentrated mainly along the mining belt stretching from Marikana in the east through Rustenburg up to the Boschhoek area in the north western parts of the municipality. The levels of economic activity in the north eastern and southern parts of the municipality are very insignificant compared to the rest of the municipal area. This area also coincides with the highest levels of accessibility to employment (in excess of 25 000 employment opportunities within a 30-minute driving time) in the central parts of the municipality. In contrast, the estimated number of employment opportunities within 30-minutes driving time in the north eastern and southern parts of the municipality is generally below 1 000. This information implies that the economic strength of the municipality is not equally spread across the municipal area and is largely associated with the location of the mining activities in the central and northern parts of the municipal area (RLM, 2010).
Land use:	The Magaliesberg Mountain Range traverses the municipal area south of Rustenburg from east to north-west. This mountain range has influenced the existing settlement pattern due to the fact that it has limited urban expansion in a south-westerly direction. The result is that urban expansion has mainly occurred in a northern and north-eastern direction (RLM, 2010). ***Olifantsnek and this project area is south of Rustenburg.*** The urban pattern that was shaped by the centrality function of Rustenburg, the Magaliesberg buffer, the accessibility of major roads and the impact of the mining belt, is radial with Rustenburg as the core area and three (3) urban corridors extending from it in a northerly, north easterly and westerly direction. It is evident that the major towns located within the municipal area are functionally linked to Rustenburg. This functional linkage expresses itself by the movement of people between these towns and the economic opportunities located in Rustenburg. These functional linkages extend over socio-political boundaries such as the Bafokeng Magisterial Boundary (RLM, 2010). Prominent topographic features in the RLM are primarily the mountain ranges and water sources and include the 4 000ha Kgaswane Nature Reserve, the Vaalkop Dam Nature Reserve and the Magaliesberg Biosphere.

	The majority of agricultural activities are mainly concentrated in the extreme south of the municipality and consist of commercial dry-land farming. There are also notable areas of commercial agriculture in the central parts and the eastern boundary of the municipality, as well as in the north-western parts along the foothills of the Magaliesberg mountain range in the vicinity of Boschhoek (RLM, 2020).
Socio-economic aspects of the project	
Surrounding land use:	Residential – Olifantsnek Township
Zoning of property:	Current: Public Open Space Use: Vacant with some dumping and overgrowth Planned: Residential 1 and special for accommodation enterprise Though the property is zoned public open space and the community views it as a park area, a property ownership search has shown that the property has not belonged to a public entity for more than 30 years. A public open space area or park has to belong to and be maintained by a public entity. Records show that this property has belonged to private companies and trusts since 1986.
Accessibility:	Access via R24 (756m east of site) into Olifantsnek area and then via Main Road (directly east of site).
Financial investment:	R25 million
Job creation:	Construction: 150 Operation: 12

6.2 Biophysical Environment

Climate: Precipitation	Warm wet summers and cold dry winters. Summer Rainfall Climatic Zone. Weather Bureau section number: 0511. Rainfall zone: A2F. Rainfall station: 0511467 (Olifantsnek Dam Wall) Rainfall pattern: Typical summer thunderstorms with heavy lightning and strong winds. Rainfall period: November to March (75.41% of rainfall) Dry period from April to October (winter). Mean Annual Precipitation (MAP): 711mm (1924 – 1989)
Climate: Evaporation	Evaporation zone: 3B Evaporation station: A2E022, 6km north west of site Mean Annual Evaporation (MAE): 1 552mm (S-pan) for 1971 to 1979
Climate: Temperature	Temperature varies between extremes of -6^{0}C and 40^{0}C with an average of 19^{0}C. Summer (October to March): 16^{0}C - 31^{0}C with a daily average of 23^{0}C. Winter: 3^{0}C - 24^{0}C with a daily average of 12^{0}C. Average annual temperature: 18.7^{0}C
Topography:	Hydro Zone: N Mean Annual Runoff (MAR): 20 – 50mm/a Site falls from south west (1 219mamsl) towards east (1 205mamsl). 14m fall over a distance of 145m. 
Water Management Area (WMA):	1 - Limpopo Hex River catchment: Drains an area of 1 080m^2
Quaternary catchment:	A22G
Closest water resource:	Olifantsnek Dam – 65m east • System: Inland

	• DWS Ecoregion: Western Bankenveld • NFEPA: Central Bushveld Group 5 • Landscape unit: Valley floor • 4A (HGM): Depression • 4B: Dammed • 4C: With channelled inflow Hex River flows in a northerly direction. Rooikloofspruit (Class C – moderately modified) 
Water supply:	No municipal water supply in the area. Water will be abstracted from a borehole on the property (drilled June 2022 – see below).
Borehole details: (HK Geohydrological, 2022)	Location: 25.79379^0 South; 27.24566^0 East Depth: 100.4m Ground elevation: 1 208mamsl Groundwater elevation: 1 201mamsl Water level depth: 7.30m
Water users in area: (HK Geohydrological, 2022)	The entire community living in Olifantsnek rely on groundwater for domestic water supply. Nineteen (19) other boreholes were found within a 1km radius.

	
Project water demand: (HK Geohydrological, 2022)	12m^3/d or 4 380m^3/a
Water availability: (HK Geohydrological, 2022)	Property size: 0.9398ha Catchment size: 3.142857ha Sustainable abstraction volume that the aquifer can accommodate: 401m^3/d Scale of abstraction: 3% of catchment Category A (<60%) study
Water quality:	Classification: SANS 241-1 and 2: 2011 as in the Publication "South African National Standard" Part 1 and Part 2, SABS Chemical: None of the parameters analysed for is above the standard limits specified. Bacteriological: E. coli or Total coliform counts below the recommended limits. Suitability for use: The water from this borehole does not need to be treated prior to animal or human consumption and is therefore considered safe for use.
Geology: (HK Geohydrological, 2022)	1:250 000 Geological Series 2526 Rustenburg Shale of the Silverton Formation of the Pretoria Group of the Transvaal Supergroup. 
Groundwater flow: (HK Geohydrological, 2022)	Groundwater flows in a south easterly direction towards the Olifantsnek Dam and Rooikloof Spruit.
Ecosystem (TBC, 2022):	Threat status: Least Concern Protection status: Poorly Protected

Sensitivities (TBC, 2022)	NW Biodiversity Sector Plan: ESA1 National Protected Area Expansion Strategy (NPAES): Not part of it. Protected Areas: MPE is 1km away therefore within 5km buffer zone. Important Bird & Biodiversity Area (IBA): Magaliesberg IBA Wetlands: None National Freshwater Ecosystem Protected Areas (NFEPA): Olifantsnek Dam – Channelled valley bottom
Biome (TBC, 2022):	Savanna – dominant grass layer, overtopped by a discontinuous but distinct woody plant layer.
Vegetation type (TBC, 2022):	Moot Plains Bushveld Vulnerable
Field assessment (TBC, 2022): 17 May 2022 **Alien invasive species**	NEMA Category 1b: • *Argemone ochroleuca* (White flowered Mexican poppy) • *Ipomoea purpurea* (Common Morning Glory) • *Lantana camara* (Lantana) • *Melia azedarach* (Syringa) • *Nicotiana glauca* (Wild Tobacco) • *Verbena bonariensis* (Tall Verbena) NEMBA Category 2b or 3: • *Agave sisalana* (Sisal) • *Morus alba* (White mulberry)
Field assessment (TBC, 2022): 17 May 2022 **Indigenous species**	Flora species: No SCC expected. 66 indigenous species listed. Identified 70 woody, graminoid, shrub and herbaceous plant species. Amphibians: 16 species listed. None threatened. None found on site. Reptiles: 42 species listed. None threatened. None found on site. Mammals: 60 species listed. Six (6) threatened species. Three (3) moderate likelihood to occur – Serval, South African Vlei Rat, African Clawless Otter. Only signs of Cape Ground Squirrel found on site. Birds: 292 listed species. 12 SCC. Three (3) moderately likelihood to occur – Maccoa Duck, Abdim's & Black Stork. Two (2) high likelihood to occur

	– Lanner Falcon and Yellow-billed Stork. 18 species identified on site.

6.2.1 Biodiversity overview

The following is just a summary overview of the Biodiversity Assessment (TBC, 2022) and further details can be viewed in the report in Appendix D.

Habitat: Grassy woodland.
Open grassland features prone to illegal dumping and wooded areas where alien trees such as *Melia azedarach* dominate. Moderate ecological function attributed to floral communities, not including protected species.

Current ecological condition: Unbalanced due to the current land use and impact. Decreased habitat integrity due to disturbances (see below). Some areas are more disturbed than others.

Disturbances (historic & current):

- Illegal dumping
- Alien Invasive Plant Species
- Edge effect impacts

Conservation importance:	Low
Functional integrity:	Low
Biodiversity importance:	Low
Receptor Resilience:	Medium
Site ecological importance:	Low
Minimisation and restoration mitigation:	Development activities of medium to high impact acceptable followed by appropriate restoration activities.

Figure 6-1: Habitat identified (TBC, 2022)

Figure 6-2: Site sensitivity (TBC, 2022)

6.2.2 Heritage Overview

A heritage impact assessment exemption letter was compiled (Archaetnos, 2022) due to the low sensitivity and disturbance of the site and further details can be viewed in the report in Appendix D.

6.3 Supporting information

Appendix D contains copies of the specialist studies.

7 ALTERNATIVES CONSIDERED

7.1 Land use alternative

7.1.1 Public Open Space

The site is zoned public open space and designated as a park in Olifantsnek.

Advantages:
- Open space in Olifantsnek area.
- Can be used as a park for the residents' enjoyment.

Disadvantages:
- Property does not belong to a public entity and can therefore not belong to or be considered a public space. Going back to the 1980s, the property was owned by private entities.
- The property has never been used as a park.
- The property is used for illegal dumping of waste.
- Alien invasive vegetation species are increasing on the property due to disturbances.

7.1.2 Existing

The property is currently just an open space.

Advantages: None

Disadvantages:
- The property with a lovely view of the Olifantsnek Dam, is under-utilised.
- The property is neglected with alien invasive infestation.
- The property is used for illegal dumping of waste by Olifantsnek residents.

7.1.3 Planned

Development of self-standing units and guest lodge.

Advantages:
- The planned development will utilise the property to full capacity.
- The property will be properly managed.
- No illegal activities will take place on the property – such as illegal dumping.
- Alien invasive vegetation species will be controlled.
- The property cannot be used by vagrants and become a security issue.
- The beautiful view can be enjoyed by the owners / residents.
- The beautiful view can be enjoyed by tourists, visitors, guests.
- The need for services in the Olifantsnek area is once again brought to the attention of the authorities.

Disadvantages:
- Indigenous vegetation will be cleared.

No land use alternatives were therefore assessed.

7.2 Alternative layout

The layout was determined by the access and available space.

No alternative layout was therefore assessed.

7.3 No-go alternative

The no-go alternative would be to refuse the development project. This will result in:

- Property is under-utilised.
- Management of the property remains problematic in terms of security, illegal activities, waste dumping, alien invasive infestation
- Aesthetic value of the property is lost.
- Loss of job opportunities associated both with the construction and operational phases.

7.4 Services

7.4.1 Option 1: Municipal

Advantages:

- Requirement for the future.
- Sustainability of Olifantsnek area as a residential area.
- Limits potential impact on groundwater environment: Quantity in terms of water abstraction from boreholes as water supply source.
- Limits potential impact on groundwater environment: Quality in terms of sewage and waste management.

Disadvantages:

- Not available as yet.
- High cost for bulk infrastructure.

7.4.2 Option 2: Borehole

Advantages:

- No reliance on service provider.

Disadvantages:

- Geohydrological study required (sustainability, impact on other water users etc.).
- WUL application in terms of the NWA required from DWS.
- Potential impacts on the groundwater environment.
- The septic tank is to be placed in the south western corner of the site for a negligible impact on groundwater quality.

8 PUBLIC PARTICIPATION PROCESS

8.1 Summary

Table 8-1: Summary of the public notices and notification process

Newspaper notice:	Newspaper: Rustenburg Herald Date: 2022-05-13 Page: 2 Refer to Appendix E for tear sheet.
Site notices:	Date placed: 17 May 2022 Size of notices: 800 X 600 mm Number of notices placed: 2 Wording and Location: Refer to Figures 8-1 - 8-3.
Interested and Affected Parties (I&APs):	Number of I&APs notified by hand-delivery: 6 Number of I&APs notified by email: 25 Number of I&APs notified by registered mail: 0 33 I&APs registered including: • Olifantsnek Community Home Owners Association (OCHOA) • 16 neighbours • Rustenburg Educational College (REC) • Vulture Valley Conservancy • Magaliesberg Biosphere Reserve • RLM (5 people) • Ward councillor (via SMS) • BPDM (3 people) • NW DEDECT (3 people) • DWS (2 people) • SAHRA & PHRAG (SAHRIS) Refer to Table 8-1.
Comments received:	Yes
Comments relate to:	At this stage the comments received are related to the availability and reviewing of the Draft BAR. People have also indicated that it should remain a park / open space and no more guest lodges are required. Comments received on the Draft BAR will be included when submitting the final report to the Authorities.

8.2 Introduction

The Public Participation Process (PPP) aims to provide all Interested and Affected Parties (I&APs) with clear, accurate and comprehensible information about the project for the proposed vegetation clearance (Activity 12 of Listing 3) and development of self-standing units and guest lodge (Activity 6 of Listing 3) with associated roads (Activity 4 of Listing 3) on Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province. In addition, the process seeks to provide I&APs with the opportunity to indicate their viewpoints on issues and concerns about the proposed project.

This process, therefore, enhances transparency and accountability in decision-making, as it allows all I&APs to suggest ways of avoiding, reducing or mitigating potential negative impacts, as well as enhance positive impacts of the proposed project. All inputs from the I&APs are considered in the planning process. Consequently, clear recording of all issues and concerns raised have been maintained in a comments and response register. This register has been updated when new issues or concerns were raised.

This section provides a methodical description of the PPP followed. It also contains a complete record of public notices, details of all registered I&APs and all communications to and from I&APs pertaining to the application.

8.3 Approach

The aim of the PPP is not only to adhere to the required legislation, but also to give as many stakeholders and I&APs as possible, an opportunity to be actively involved in this process.

The PPP has been carried out in accordance with Chapter 6 of the NEMA and in support of the EIA Regulations of 2014 as amended. Based on these Regulations, published in terms of Sections 39 to 44 of GNR 982 amended in GNR 326 of NEMA, the following steps were undertaken:

- Potential I&APs were identified through identification of neighbouring properties and property owners, windeed searches, conducting a site visit to the area on 17 May 2022, conducting interviews (telephonically and in person), through notices placed on the site (Figures 8-1 – 8-3) as well as through placing a notice in a local newspaper, the Rustenburg Herald;
- A stakeholder register was compiled in terms of Regulation 42 that includes national, provincial and local authorities, government departments, organisations, as well as landowners that may have an interest;
- I&APs were given more than 30 days to register and raise concerns (12 May – 31 July 2022) which included the 30 days legislative requirement to review the draft BAR (2 – 31 July 2022). A copy of the draft BAR was made available through an electronic channel (wetransfer) upon request. A hard copy was made available in the Rustenburg Public Library in Heystek Street. Any concerns that have been raised by I&APs were acknowledged, noted and addressed (Table 8-2) by the EAP where possible;
- A recorded summary of concerns raised by I&APs, as well as the responses from the EAP, were kept throughout the entire process.

8.4 Public awareness

8.4.1 Site Notices

Site notices, measuring 800 mm x 600 mm (white correx boards with black text) were placed at the site on 17 May 2022 at the following positions:

- South west corner of the site next to Erf 154; 25° 47’ 38.9” South, 27° 14’ 40.2” East.
- Western boundary of the site facing Main Road; 25° 47’ 39.4” South, 27° 14’ 40.5” East.

Each notice contained details regarding the applicant (The Alpha Grande (Pty) Ltd), the nature of the activity (Proposed vegetation clearance (Activity 12 of Listing 3) and development of self-standing units and guest lodge (Activity 6 of Listing 3) with associated roads (Activity 4 of Listing 3) on Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province), the locality (Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province), and the contact details of the EAP (see Figure 8-1). The placement of the site notices was recorded by taking photographs of the placed notices on site, as well as by recording the GPS coordinates of these positions. See Figures 8-2 – 8-3. These notices remained on the site for the duration of the process (May - August 2022).

8.4.2 Newspaper Notice

A detailed newspaper notice was placed in the Rustenburg Herald Newspaper, published on 13 May 2022 (see Appendix E). Distribution areas of the newspaper are as follows:

- Waterkloof
- Rustenburg
- Boons
- Bleskop
- Brits
- Buffelspoort
- Derby
- Elandskraal
- Groot-Marico
- Hartbeespoort
- Karlienpark
- Kroondal
- Lichtenburg
- Marikana
- Moedwil
- Mooinooi
- Northam
- Rex
- RPM
- Sun City
- Swartklip
- Swartruggens
- Thabazimbi
- Tlhabane
- Waterfall Mall
- Zinniaville

- Zeerust

The aim of placing a notice in the local newspaper was to create a greater awareness of the project and to invite a broader spectrum of I&APs to register and be part of the process.

32 000 copies of the newspaper are distributed weekly.

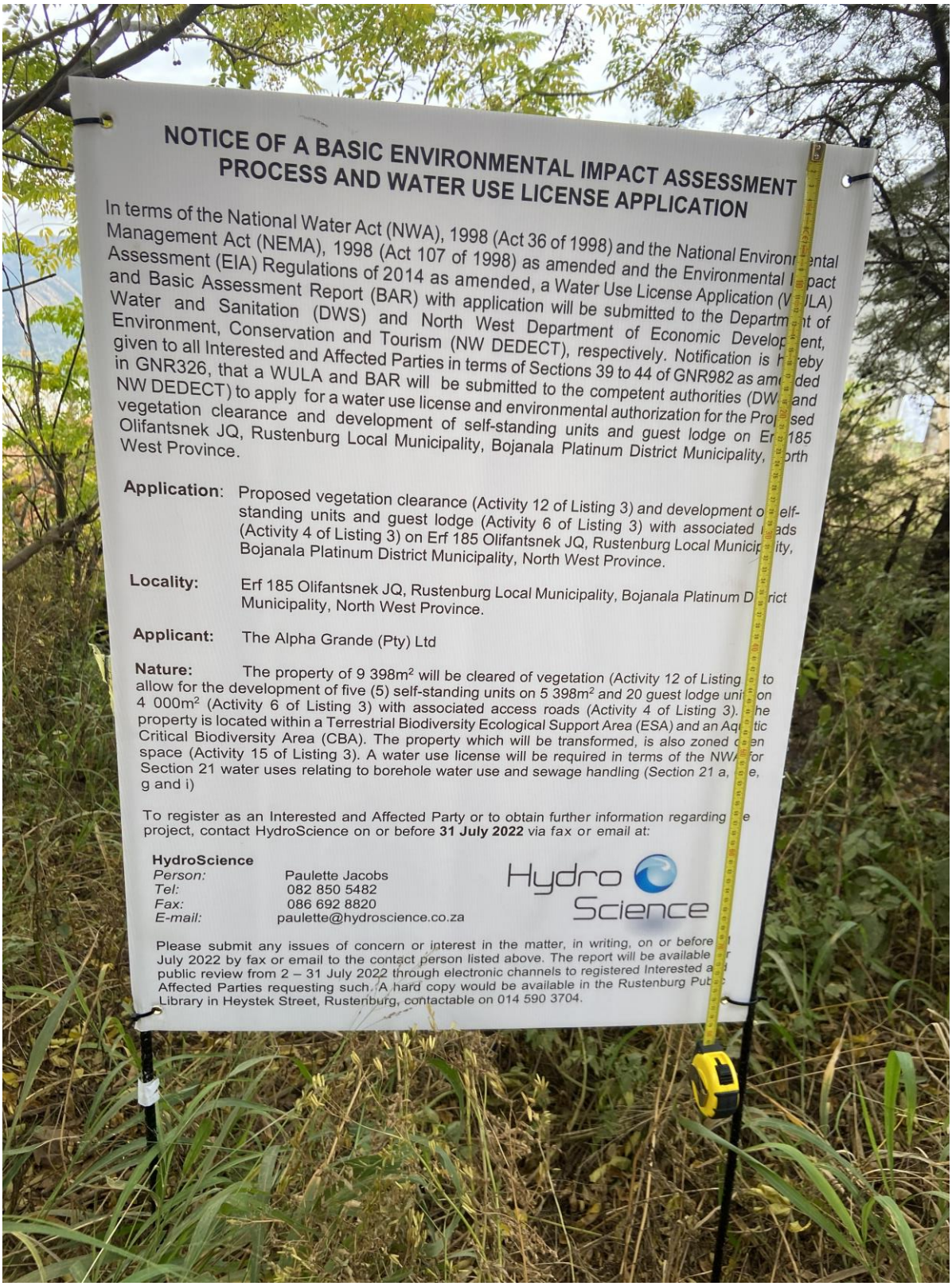
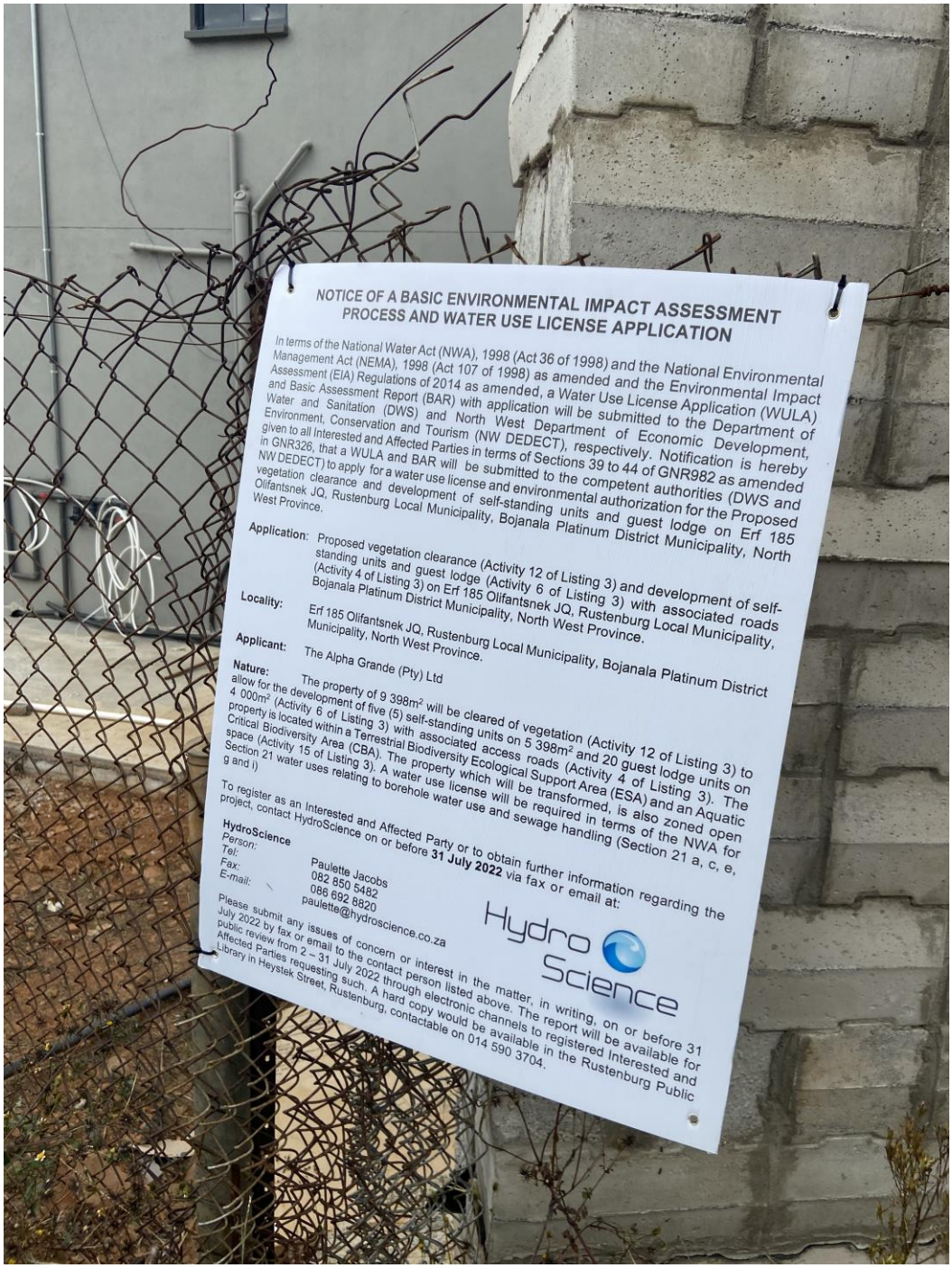


Figure 8-1: Wording and size of notices placed



South west corner of the site next to Erf 154; 25° 47’ 38.9” South, 27° 14’ 40.2” East.

Western boundary of the site facing Main Road; 25° 47’ 39.4” South, 27° 14’ 40.5” East.

Figure 8-2: Locality of notices placed

Figure 8-3: Aerial view of location of site notices

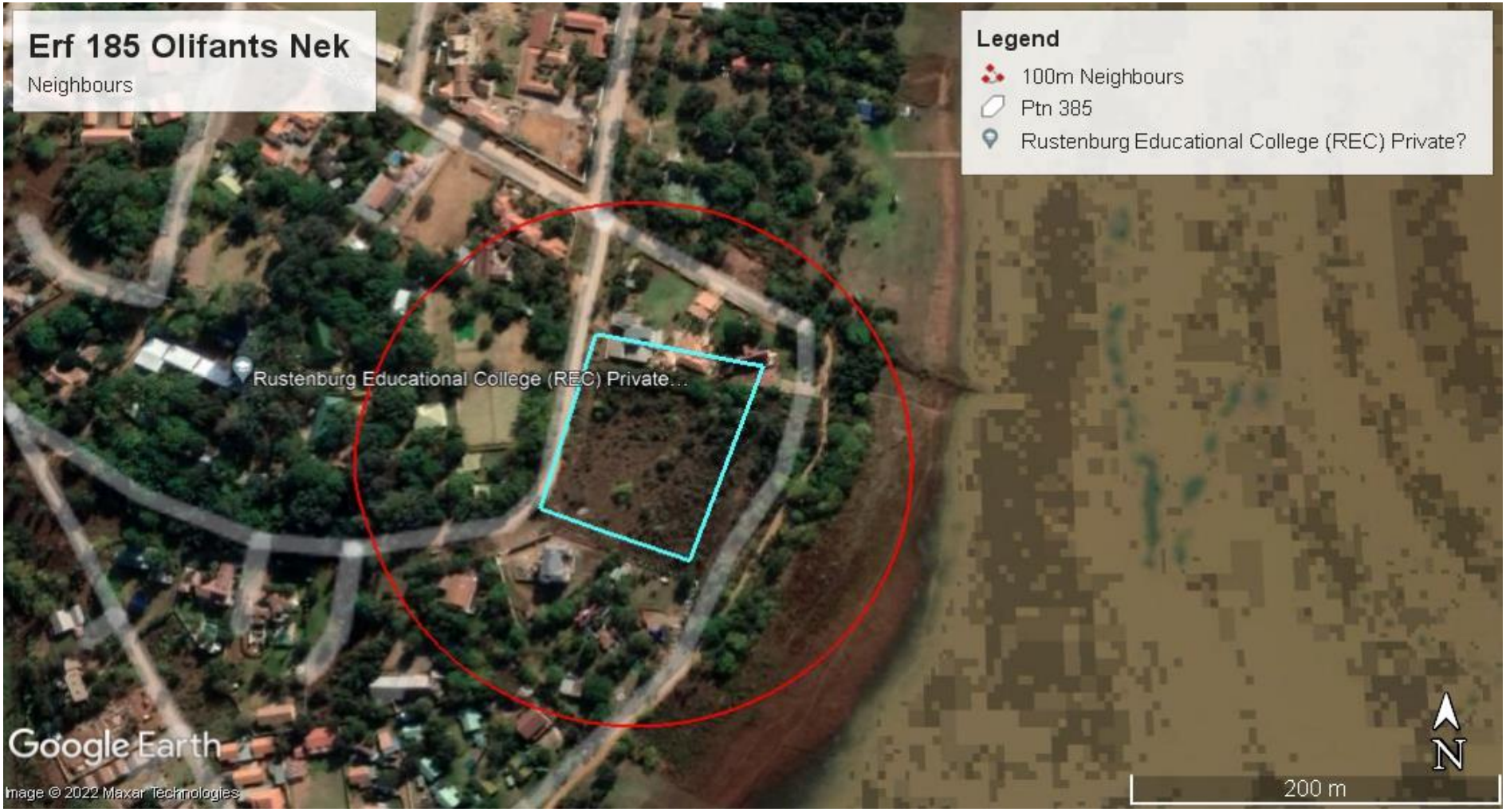


Figure 8-4: Neighbouring properties (within 100m)

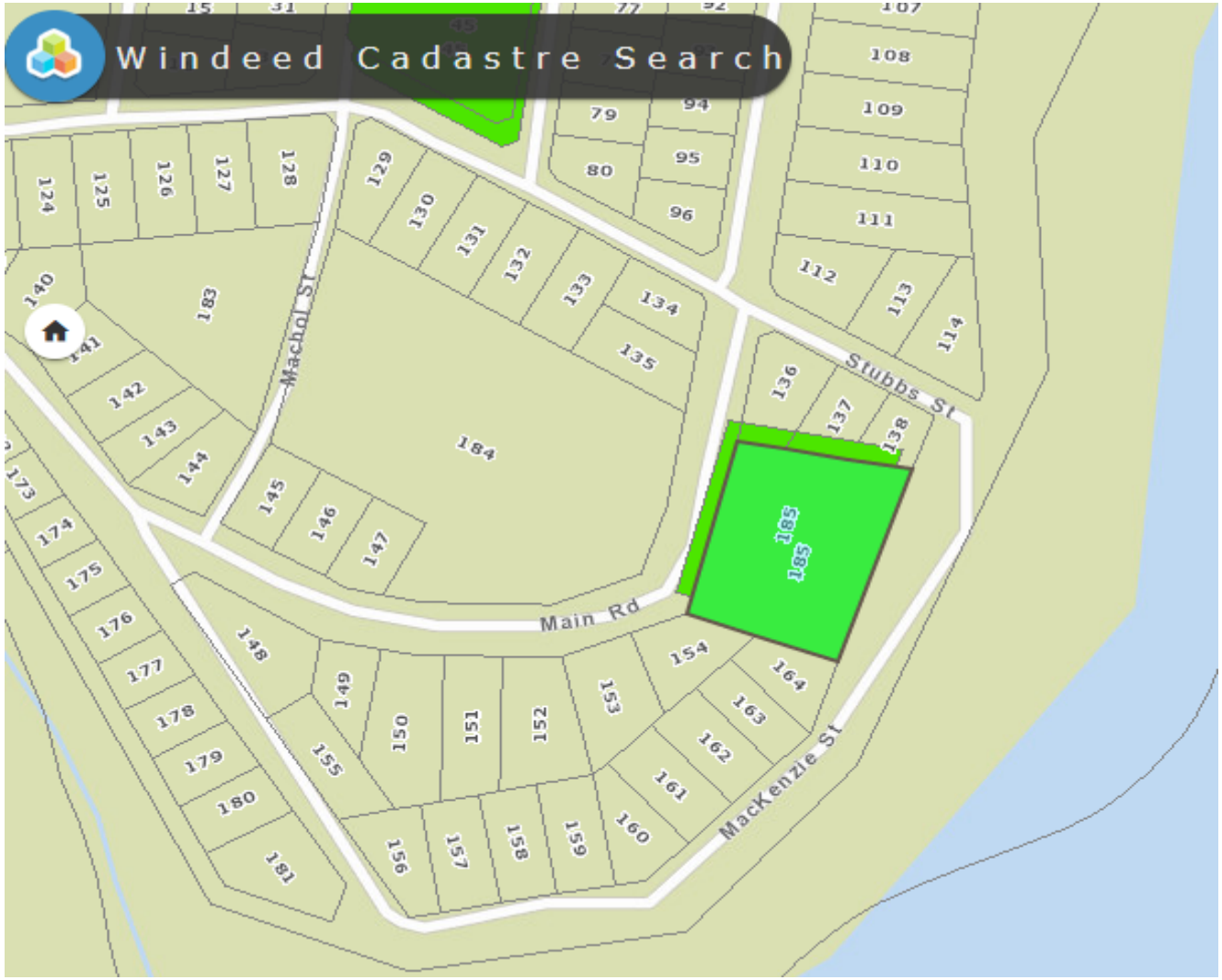


Figure 8-5: Neighbouring properties (erf numbers)

8.5 Comments and Response Register

Any concerns that were raised by I&APs during the process were recorded and addressed by the EAP where possible (see Table 8-3). All proof of communication can be seen in Appendix E.

Furthermore, all registered I&APs were given an opportunity to comment in writing (2 – 31 July 2022), on the draft BAR before its submission to the competent authority, NW DEDECT, in August 2022.

8.6 BAR Submission

The draft BAR was made available through an electronic channel (wetransfer) upon request and in the Rustenburg Public Library from 2 – 31 July 2022. All I&APs have therefore been given an opportunity to comment on this document. Once the period for comments lapsed, all comments made were included in the comments and response register.

After submission of the draft BAR to the authorities, during the public review period, the authorities listed below, were also afforded an opportunity to submit their comments to be addressed in the final BAR.

The final BAR (including all supporting documentation) will be submitted to NW DEDECT for consideration. A decision will be provided by NW DEDECT in terms of their considerations and findings and if authorised, conditions of the authorisation will be provided.

Table 8-2: Register of I&APs

Neighbouring landowners, residents and businesses		
Road:	**Numbers:**	**Interaction:**
Stubb Street	112, 113, 114, 136, 137, 138	2022-05-12 Email 2022-05-16 Email 2022-05-17 Hand-delivery
Main Road	134, 135, 153, 154	2022-05-12 Email 2022-05-17 Hand-delivery 2022-05-18 Email
MacKenzie Street	161, 162, 163, 164	2022-05-12 Email 2022-05-18 Email
Rustenburg Educational College (REC)	184 Main Road	2022-05-12 Email 2022-05-27 Comments
Vulture Conservancy		2022-05-12 Email
Magaliesberg Biosphere Reserve (MBR)		2022-05-12 Email 2022-05-16 Registered 2022-08-03 No comments
OCHOA		2022-05-12 Email
Other community members		2022-05-17 Hand-delivery Verbal comments Emails received

Authorities and other stakeholders:		
Authority / organisation / entity:	**Section / Department:**	**Interaction:**
Local authority: RLM	Integrated Environmental Management	2022-05-12 Email 2022-07-01 Draft report 2022-08-03 Site visit 2022-08-03 Comments
	Development Planning	2022-05-12 Email
	Waste	2022-06-17 Email
	Ward Councillor	2022-05-23 Email 2022-07-31 Comments
District authority: BPDM	Environmental	2022-05-23 Email

Authorities and other stakeholders:		
Authority / organisation / entity:	**Section / Department:**	**Interaction:**
Provincial authority: NW DEDECT	EIA Administration	2022-05-12 Email 2022-07-01 Application 2022-07-01 Draft report 2022-07-20 Ref no 2022-08-02 Site visit 2022-08-26 Comments
Department of Water and Sanitation (DWS)		2022-05-12 Email
South African Heritage Resources Agency (SAHRA)	SAHRIS on-line system	2022-07-01 Draft report

Table 8-3: Comments and responses

Comments & Responses Report		
I&AP:	**I&AP Comment**	**EAP Response**
MBR (2022-05-16)	Requested to be registered.	Registered. Supplied electronic link to draft BAR: 2022-07-01
Community members (2022-05-17 during site visit)	Don't want more guesthouses. Should be kept as a park.	Internet searches only show Casa Bella Guesthouse in Olifantsnek. Other guesthouses in Rustenburg and area. Property does not belong to a public entity and can therefore not be for public use. Though the property is zoned public open space and the community views it as a park area, a property ownership search has shown that the property has not belonged to a public entity for more than 30 years. A public open space area or park has to belong to and be maintained by a public entity. Records show that this property has belonged to private companies and trusts since 1986.
Andrew Dinnes (2022-05-17)	Concern: Always been a park Object to development for commercial purposes. Object to any building on the site. Remain green space as per original town planning. Olifantsnek has only one designated park – travesty to take it away.	Objection and concern noted. The property is owned by a private entity since the 1980s from what could be determined from the history. Has never been used as a park. Used for illegal dumping (Mr Dinnes indicated RLM should clean it up).
Rustenburg Educational College (REC) (2022-05-27)	Register as an interested and affected party.	Registered.

	Please send relevant information and notices.	Draft BAR with appendices sent on 1 July 2022.
	Benefits to the community and school.	Noted benefits as below.
	Boarding school that houses students from far away, including Botswana, Lesotho, Eastern Cape, etc. Parents visiting school for functions or to collect children from school for holidays, often have to stay over in the area.	Accommodation in guest lodge can be used for parents of children at REC.
	When hosting camps or functions, school often needs to accommodate Guest speakers or VIPs.	Accommodation in guest lodge can be used for guest speakers, VIPs and visitors to REC.
	A functioning guesthouse next to the school will provide school and parents with a convenient resting place to resort to.	Agree can be to the benefit of the school.
	Application for Development and Rezoning will also assist in bringing awareness to the RLM that there exists a real need for proper municipal services in the area.	Yes, RLM is part of stakeholders consulted during this process.
	Property values in our neighbourhood might also be positively affected by this development.	Possible.
	A formal ground water study on this particular erf and this area of Town will	A pre-liminary study was conducted but a more in-depth study is planned and will be appended.

	also be beneficial for future town planning purposes. Together with the recent ground water study REC conducted on Portion 62 it can give a good understanding of the actual availability of water in the area. More studies mean more certainty and less speculation! Request copy of the Geohydrology Study for future planning.	
Mr Vorster (2022-07-27)	How is it possible to develop on a park? 1. Where will they get water? 2. Where will the sewerage go? 3. No – they will generate noise pollution! 4. All the dust on the dirt-road!? 5. No need for a bar in Olifantsnek	The zoning of the property will be changed before development - through a town planning application (SPLUMA) – not part of our application but a separate process handled by a town planner. 1. Water will be abstracted from a borehole recently drilled on the property 2. Sewage will be contained in conservancy tanks from where it will be pumped by a honeysucker for off-site disposal at the RLM Wastewater Treatment Works 3. Noise is addressed but not considered a major concern due to the type of development 4. Dust suppression is addressed 5. The application is not for a bar but for a guesthouse and 5 self-standing units. The draft Basic Assessment Report is currently out for public review. A hard copy is available in the Rustenburg Library and should provide answers to all your questions as well as provide the necessary detail and supporting information.
(2022-08-12)	Questioned guests in 5 self-standing units.	Not guests associated with lodge, permanent residents.

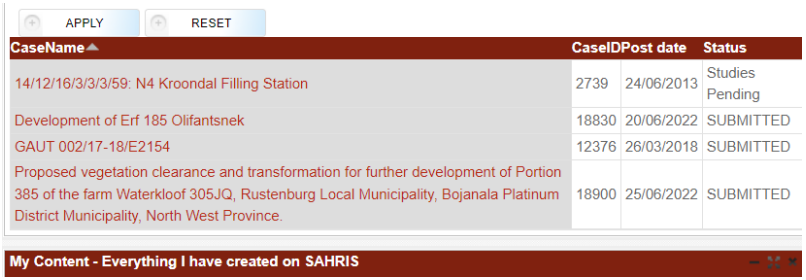
Gerrie Benadie (2022-07-31) – direct neighbour	Issues and Concerns due to close proximity to the stand and most affected: 1. The fact that the stand was declared a residential park in our area, and the fact that it could not be purchased. This was the main reason for purchasing our stand. Due to the fact for no disturbance and I am a nature lover. Also, the amount of infrastructure on the stand, will have a great impact on the wild life and aesthetic appeal on the property in the area. There are no other parks in our area. 2. Olifantsnek has no municipal water. We rely on the ground base water supply for the community. We already have a school in the area with boarding school. If this water supply is depleted or diminished this will have a devastating impact on the community. 3. Olifantsnek has no municipal sewage removal systems in place. This is a main concern. Hydro Science also did this for the school in Olifantsnek. I spoke to several residents from across the school and they raised their concerns, due to the fact that the schools overflow of their sewage is still running down the hill and into the main road. This is a serious issue due to the fact that this	1. Yes, the stand is currently zoned as a park but a rezoning will be done (a different application by a town planner in terms of different legislation). The property has been purchased and in private ownership since the 1980's as could be established. Please refer to the biodiversity study – the property is no longer pristine / natural, there is alien infestation, waste dumping, etc. The only signs of wildlife were a squirrel and birds in the area. The property has never been used as a park, residents seem to use it for waste dumping. 2. Yes, Olifantsnek has no municipal water. There was a borehole drilled on this property and borehole yield tests were conducted. The abstraction volumes from the borehole were calculated so as to not impact other water users. Please refer to the geohydrological study. 3. Yes, Olifantsnek has no municipal sewage removal systems in place. HydroScience was involved in the application for the development of the new school facility (which has not yet been built) which would establish a package sewage treatment plant (no built or operational yet) for the management of their sewage since there is no municipal treatment plant in Olifantsnek. I have not had concerns raised by any other residents. The current / existing sewage issues has no relevance or impact on this project and has to be addressed irrespective. HydroScience is not responsible for sewage management in the area and

	was done by Hydro Science and is still a problem after a view years. My concern is how was this approved. 4. The number of buildings to be erected on stand 185, will this obscure our view? and will it be aesthetically pleasing? This is not a residential project but a business project. What about the ambient noise levels on the development and the impact of this property it will have on the residence, environment and wild life?	nor has it been involved in any existing sewage treatment systems of a historic nature (after a few years). I however, copy in Mr Paul Peens from the school and you are welcome to discuss this matter with him as this problem is of no relevance to this project. 4. The buildings will not be in front of your stand as it is located next to your property. The Alpha Grande indicated from the start that they are willing to discuss any concern in terms of your views and aesthetics with you as it is not their intention to negatively impact your view. I am not aware that you have taken them up on this offer. You are once again urged to discuss with them. This is a residential area and noise levels will have to comply with the RLM by-laws in terms of residential noise levels.
Mr & Mrs Mabala (2022-07-31)	This space was set aside for a park and public shared space. <u>Concerns</u> 1. How was it sold if it was a public park and who is the recipient of the sale transactions 2. Noise pollution 3. More traffic on dust/dirt streets	Yes the stand is currently zoned as a park but a rezoning application by a town planner will be lodged with RLM (different application in terms of different legislation). The property has been in private ownership since the 1980s as could be established, it was therefore not publicly owned but privately owned. 1. As mentioned above, it was not publicly owned. The previous owner sold it to the current owner. Based on the title deed contained in the document which has been available for public review since 1 July, the previous owner who sold the property to The Alpha Grande (Pty) Ltd was L van Staden (Pty) Ltd. 2. As with everything else in Olifantsnek, the stand and activities will have to comply with the RLM by-laws in terms of noise levels for residential areas. 3. The traffic generated by one erf is not seen as significant in terms of the entire residential township of nearly 200 stands. A Traffic Impact study was provided.

	4. Limited borehole water... 5. Sewerage control	4. Please refer to the geohydrological study conducted and available which addresses the borehole water use. 5. Please refer to the draft report, sewage will be captured and contained in conservancy tanks from where it will be pumped by a honeysucker for off-site disposal at a Wastewater Treatment Works.
Juan Greeff (2022-07-31)	Just bought house on stand 153. Decided to buy own house in Olifantsnek because it is a quiet and peaceful place with the most beautiful nature and surroundings. Issues to point out..... 1. Stand 185 was declared as a residential park in the Olifantsnek area and therefore the stand could not be bought/purchased by anyone. Me and my family are nature lovers and this new development would most definitely disturb the peace and nature in the surrounding areas. The amount of infrastructure which is planned on this stand will have an enormous impact on wild life and the aesthetic appeal of the property in the area. There are no other parks in our nearby area. 2. Olifantsnek has no municipal water and we solely rely on the ground base water supply for the community. The current residents and the nearby school with a boarding school also rely	Congratulations on your purchase in a lovely area. 1. The stand is currently zoned as a park but a rezoning application by a town planner will be lodged with RLM (different application in terms of different legislation). The property has been in private ownership since the 1980s as could be established, it was therefore not publicly owned but privately owned. The previous owner sold it to the current owner. Based on the title deed contained in the document which has been available for public review since 1 July, the previous owner who sold the property to The Alpha Grande (Pty) Ltd was L van Staden (Pty) Ltd – another company. 2. There is no municipal water in Olifantsnek. Please refer to the geohydrological study conducted and available which addresses the borehole water use.

	on this. Should this water supply be depleted or diminished, we, the community, will suffer, it will create a devastating impact on our community. 3. Olifantsnek has no municipal sewage removal systems in place, which is a huge concern. Most residents have the same concerns, I believe a similar study/project was done by Hydro Science previously for the school and with no or very little success, what will differ for this project at stand 185?	3. There is no municipal sewage removal system in Olifantsnek. Please refer to the draft report - sewage will be captured and contained in conservancy tanks from where it will be pumped by a honeysucker for off-site disposal at a Wastewater Treatment Works. Kindly familiarise yourself with the HydroScience application for the school which has not been built yet so cannot be judged in terms of success of sewage treatment.
Councillor Jean Keyser (2022-07-31)	Concerns: Till today there has been no public meeting with the community on this development. Give more info on the water license Is this going to be guest house or a boarding house, if I look at the size of the development (rooms) they are planning? It seems to be dormitory. If it's going to be a boarding house it's going to be about 200 students a day and the area doesn't make provision for the infrastructure on sewerage and	**Public meeting:** No public meeting was planned or requested over the past more than 2 months (12 May – 31 July 2022). If you want to meet, I can meet you on Tuesday 2 August even though the 30-day public review period lapses today. **Water license:** The Water Use License process has only started but the full geohydrological study in terms of this application has been completed and has been available for the last month for review. **Guesthouse / boarding house / dormitory:** It will be a guesthouse as per all the documentation provided.

	the stand is not far from the Dam. And can become a problem with E.coli in the water, also a problem for the residents with underground water resources, there is no main bulk line in Olifantsnek.	
	This stand is still registered as the only area for a park in Olifantsnek for the community	**Park:** The rezoning will be done by a town planner - different application in terms of different legislation – a public participation process will also be followed for this process
	Will the developer be responsible for the development of a sewerage plant that's suitable for the area and environment friendly and installing the line for bulk water line.	**Sewage:** Sewage will be stored in conservancy tanks (closed vessels) and pumped by a honeysucker for off-site disposal to a Wastewater Treatment Works.
	The road into and out of Olifantsnek is not build for the capacity of the traffic, has arrangements been made or plans with Sanral on this as well?	**Traffic:** No traffic study was done and no upgrades to the access road into Olifantsnek is planned and therefore no discussions with SANRAL. This road was recently upgraded. A traffic impact study was then provided
(2022-08-02)	Is it going to be a 20 room or 35 room guest house?	As per the newspaper notice, site notice, documentation provided for public review and site development plan Residential 1 development: Five (5) self-standing units will be developed on 5 398m^2. Guest lodge development: 20 guest lodge units will be developed on 4 000m^2
COMMENTS ON DRAFT BAR		
NW DEDECT (2022-07-20)	Ref no: NWP/EIA/38/2022 Acknowledge receipt of application and draft BAR. Application accepted.	Noted.

	Responsible official: Olebogeng Marobe	
RLM Public Library (2022-07-01 – 2022-08-02)	No comments.	-
RLM & NW DEDECT (2022-08-02)	Site visit RLM requested history of property ownership	Provided windeed search showing property ownership back to 1986 – always private ownership
MBR (2022-08-03)	No comments, no capacity to provide comments.	Noted.
SAHRA	No comments received.	Loaded onto SAHRIS on 2022-06-20. Case 18830.  APPLY RESET CaseName / CaseID / Post date / Status 14/12/16/3/3/3/59: N4 Kroondal Filling Station — 2739 — 24/06/2013 — Studies Pending Development of Erf 185 Olifantsnek — 18830 — 20/06/2022 — SUBMITTED GAUT 002/17-18/E2154 — 12376 — 26/03/2018 — SUBMITTED Proposed vegetation clearance and transformation for further development of Portion 385 of the farm Waterkloof 305JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province. — 18900 — 25/06/2022 — SUBMITTED My Content - Everything I have created on SAHRIS
RLM: Directorate: Community Development, Unit: Integrated Environmental Development Site visit: 2022-08-02 Comments: 2022-08-03	<u>Site visit observations:</u> Located in an urbanised area (Olifantsnek residential area) that is already developed and transformed. Site is overgrown with grass and alien invasive species, and currently illegal dumping is found on the site. Residential properties and the existing school (REC private school) are in close proximity to the site.	Noted and agreed.

	Olifantsnek Dam is located approximately 65m east of the proposed development. The necessary mitigation measures will ensure that the water body (Olifantsnek Dam) is protected from soil erosion and possible siltation. The proposed development will occur outside urban edge development. <u>BPDM EMF:</u> Zone A: development zone I (Residential, business & other): areas identified for future urban development in SDF. Residential, commercial and government but no industrial or mining. Zone G: Sensitive topographic zone: represents sensitive topographical features such as hills & ridges. Compatible, partially compatible & incompatible. Site is not considered environmentally sensitive, as it has been altered and degraded due to current impacts such as dumping of rubble, alien invasive plant species. <u>Support the proposed development.</u> <u>Recommendations:</u> • All mitigation measures as recommended by EAP, specialists and in EMP to be complied with.	Noted. Refer to Section 10 – EMP.

	• There is no provision for bulk services (sewage, water and electricity) which is a threat to the receiving environment, Olifantsnek Dam.	Water Use License application will be lodged with DWS.
	• No further development should be supported in areas that are not fully serviced. Ensure adequate service provision in place before permitting developments around dams and rivers.	Noted.
	• Manage with utmost care and responsibility. Habitat disturbance should not be allowed to occur due to development activities.	Noted, refer to Section 10 – EMP mitigation measures.
	• Soil and construction related stockpiles must be bermed to prevent leachate and polluted runoff water from leaving the property during the construction phase. Soil and construction related stockpiles must be located a minimum of 100m from the 1:100 year flood line.	Noted, refer to Section 10 – EMP mitigation measures.
	• Provision must be made for the adequate storage of used and contaminated substances such as oil, lubricants and other petroleum products during the construction phase. Substances must be stored in such a way that they do not pose a threat to the environment. All hazardous substances must be removed and	Noted, refer to Section 10 – EMP mitigation measures.

	disposed of at an authorised licensed facility.	
	• Stormwater management plan must address any potential pollution from oil and diesel leaks and spills during construction and operation. Plan must ensure sufficient berms to contain accidental spills.	Noted, refer to Section 10 – EMP mitigation measures.
	• Adequate measures to collect, remove and safely dispose of waste must be implemented during each stage of the development, from site preparation to final construction and operation.	Noted, refer to Section 10 – EMP mitigation measures.
	• Measures for controlling and eradicating invasive and exotic plant species on the disturbed surface must be developed and implemented.	Noted, refer to Section 10 – EMP mitigation measures.
	• Proper measures must be implemented to ensure the management of surface runoff during the construction phase. Embankments must be established around excavation areas and stockpiles to divert surface runoff away from these areas to avoid water pollution.	Noted, refer to Section 10 – EMP mitigation measures.
	• Appropriate and visible signalling for safety purposes must be posted at reasonable distances at every section of the road affected.	Noted, refer to Section 10 – EMP mitigation measures.

	• Dust generated by construction activities must be minimised by dust suppression techniques such as the use of a water sprinkler. • Increase in traffic due to the new development should be taken into consideration. • Establishment of a monitoring system to determine the potential impact on surface and groundwater quality. • Sufficient and temporary facilities including ablution facilities must be provided for construction workers. Maintain facilities. No chemical or wastewater allowed to contaminate surface runoff. Sanitary arrangements to the satisfaction of the local authority. • Applicant is responsible for compliance with the provisions for duty of care and remediation of environmental damage in accordance with Section 28 of NEMA.	Noted, refer to Section 10 – EMP mitigation measures. A traffic impact study was conducted. Noted, refer to Section 10 – EMP mitigation measures. Section 10.6 deals with monitoring. Noted, refer to Section 10 – EMP mitigation measures. Noted, refer to Section 10 – EMP mitigation measures.
NW DEDECT Site visit: 2022-08-02 Comments: 2022-08-26	2022-07-11: Received draft BAR for comment 2022-08-02: Site visit conducted No issues with draft BAR, proceed to finalise. Submit original signed EAP affirmation with final.	Finalised.

9 IMPACT ASSESSMENT

9.1 Methodology

The significance of the adverse environmental impacts identified were assessed in terms of their:

- Duration;
- Extent;
- Probability; and
- Severity.

The above was used to determine the significance of an impact without any mitigation, as well as with mitigation.

Nature of an impact: An impact's nature can be positive (+) or negative (-).

Consequence: Considers duration, extent and severity

Consequence = duration + extent + severity

Table 9-1: Environmental risk and impact assessment criteria

DURATION (D)		
Immediate	Less than 1 month	1
Short-term	2 - 24 months	2
Life of project	Operational phase	3
Post-closure	Time of rehabilitation and for re-establishment of natural systems	4
Residual	A permanent impact (100 years or more)	5
EXTENT (E)		
Site specific	Site of the proposed work (property)	1
Local	Site and immediate surroundings	2
Regional	Municipal area	3
Provincial	Provincial area	4
National	Republic of South Africa	5
PROBABILITY (P)		
Rare	<5% probability of occurrence – may occur in exceptional circumstances	1
Unlikely	15% - 6% probability of occurrence – could potentially occur at some time	2
Possible	45% - 16% chance of occurrence – might occur at some time	3
Likely	65% - 46% probability of occurrence – will probably occur in most circumstances	4
Almost Certain	90% - 66% probability of occurrence – is expected to occur	5
Definite	100%- will occur	6
SEVERITY (S)		
Catastrophic (critical)	Total change in area of direct impact, relocation not an option, death, toxic release off-site with detrimental effects, irreversible loss, huge financial loss	6

Significant (High)	> 70% change in area of direct impact due to loss of significant aspect, extensive injuries, long term loss in capabilities, off-site release to high extent, major financial implications	5
Serious	50 – 70% long-term loss, extensive rehabilitation / restoration / treatment required, high financial impact, still restricted in extent	4
Moderate (medium)	20 – 49% change, medium term loss in capabilities, rehabilitation / restoration / treatment required, on-site release with outside assistance, medium financial impact	3
Minor	10 – 19% change, short term impact that can be absorbed, on-site release, immediate containment, low financial implications	2
Insignificant (low)	< 10 % change in the area of impact, no financial implications, localised impact, a small percentage of population	1

[Duration (D) + Extent (E) + Severity (S)] x Probability (P) = Impact Significance (IS)

IMPACT SIGNIFICANCE (IS)		
Impact Significance	**IS score range**	**Description**
Low (L)	<15	The impact is minor or insubstantial; it is of little importance to any stakeholder and can easily be rectified.
Moderate Low (ML)	16 - 45	The impact is limited in extent, even if the intensity is major; the probability will only be likely, the impact will not have a significant impact considered in relation to the bigger picture; no major material effect on decisions and will require only small-scale management intervention bearing moderate costs.
Moderate High (MH)	46 - 70	The impact is significant to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.
High (H)	71 <	The impact could render options controversial or the entire project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in project decision-making.

9.2 Impact Assessment Ratings

The impacts and associated significance ratings for the project were assessed (Tables 9.2, 9.3 and 9.4). The no-go option would not meet the project objective.

The planning phase activities are considered to be of a negligible impact significance as these typically involve desktop assessments and site inspections. A very low temporary impact may be experienced due to the increased presence of humans and vehicles / machinery.

Table 9-2: Impacts and Significance for the construction phase

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	**Description**	**Nature of Impact (Positive/ Negative)**	**Spatial Scape/ Extent (6)**	**Duration (6)**	**Severity (6)**	**Consequence**	**Probability (6)**	**Significance (108)**	**Nature of Impact (Positive/Negative)**	**Spatial Scape/ Extent (6)**	**Duration (6)**	**Severity (6)**	**Consequence**	**Probability (6)**	**Significance (108)**
FLORA – vegetation will be removed in order to establish site	Destruction, fragmentation and degradation of habitats and ecosystems (ESA lost)	N	2	5	2	9	6	54	N	2	4	2	8	4	32
	Spread and/or establishment of alien and/or invasive species	N	2	5	5	12	6	72	N	2	2	2	6	3	18
	Burning of vegetation on site	N	2	2	3	7	4	28	N	2	2	3	7	1	7
FAUNA - removal of vegetation providing habitat	Direct mortality of fauna	N	2	2	3	7	4	28	N	2	2	3	7	1	7
	Reduced dispersal/migration of fauna	N	2	5	2	9	6	54	N	2	4	2	8	3	24
	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise, dust and light pollution.	N	2	5	3	10	5	50	N	2	2	2	6	4	24
	Workers and others interacting directly with fauna (potentially dangerous) or poaching of animals	N	2	5	3	10	6	60	N	2	2	3	7	4	28
SURFACE WATER – alteration of surface water flow, contamination of Olifantsnek Dam	Compaction of the soil will increase the runoff	N	2	5	3	10	6	60	N	2	5	2	9	4	36
	Siltation and Erosion	N	2	2	3	7	5	35	N	2	2	2	6	2	12
	Contamination from chemicals, cement, ablution, hydrocarbons from vehicles / equipment / machinery	N	3	2	3	8	5	40	N	2	2	2	6	2	12

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
GROUNDWATER - reduced quantity; contamination	Reduced availability due to reduced infiltration due to soil compaction	N	2	5	3	10	6	60	N	2	5	2	9	2	18
	Contamination from chemicals, cement, hydrocarbons from vehicles / equipment / machinery	N	2	2	3	7	5	35	N	2	2	3	7	1	7
AIR QUALITY – contamination	Contamination from burning, construction vehicle emissions, dust, airborne litter	N	2	2	4	8	5	40	N	2	2	2	6	1	6
HEALTH - degradation in health	Using the veld for ablution instead of toilets	N	1	2	2	5	6	30	N	1	2	2	5	3	15
	Dust created during earthworks & construction	N	2	2	2	6	6	36	N	2	2	2	6	3	18
	Dumping of waste on site causing and spreading diseases	N	2	2	2	6	6	36	N	1	2	2	5	2	10
	Workers not using / wearing PPE	N	1	2	5	8	5	40	N	1	2	5	8	1	8
	Burning of material on site	N	2	2	5	9	5	45	N	2	2	5	9	1	9
NOISE – construction activities on site	Noise from construction related activities – vehicles, machinery, equipment	N	2	2	4	8	6	48	N	2	2	3	7	4	28
TRAFFIC - disturbance to the flow	Slow-moving construction vehicles	N	2	2	3	7	6	42	N	2	2	2	6	4	24
	Traffic congestion	N	2	2	3	7	6	42	N	2	2	2	6	3	18

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
SAFETY & SECURITY	Theft	N	1	2	4	7	5	35	N	1	2	4	7	2	14
	Construction site is unsafe	N	1	2	4	7	6	42	N	1	2	4	7	1	7
	Home owner security at risk due to influx of workers into area	N	2	2	4	8	5	40	N	2	2	4	8	2	16
	Unfair treatment of staff members can lead to dispute or strikes	N	1	2	3	6	5	30	N	1	2	3	6	2	12
	Using inappropriate working methods or equipment	N	1	2	4	7	6	42	N	1	2	4	7	1	7
	Workers not wearing PPE	N	1	2	4	7	6	42	N	1	2	4	7	1	7
SOCIO-ECONOMIC	Disruption during the construction	N	2	2	3	7	6	42	N	2	2	2	6	3	18
	Job creation	P													

Table 9-3: Impacts and Significance for the operational phase

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA – removed vegetation	Destruction, fragmentation and degradation of habitats and ecosystems (ESA lost)	N	2	5	2	9	6	54	N	2	4	2	8	4	32
	Spread and/or establishment of alien and/or invasive species	N	2	5	5	12	6	72	N	2	2	2	6	3	18
FAUNA - loss of habitat	Disruption/alteration of ecological life cycles (breeding, migration, feeding) due to noise, human activity and light pollution.	N	2	3	3	8	4	32	N	2	3	3	8	2	16
SURFACE WATER – hard surfaces, limited infiltration	Hard surfaces will increase the runoff	N	2	5	3	10	6	60	N	2	5	2	9	4	36
GROUNDWATER - over-utilisation of aquifer; contamination of the groundwater system	Reduced availability due to increased groundwater use	N	2	5	3	10	6	60	N	2	5	2	9	2	18
	Contamination from sewage management	N	2	3	3	8	5	40	N	2	3	3	8	1	8
TRAFFIC – increase in traffic	Traffic congestion	N	2	3	3	8	6	48	N	2	3	2	7	3	21
SOCIO-ECONOMIC	Job creation	P													

Table 9-4: No-go Impacts and Significance

Aspect and Description		Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Aspect	Description	Nature of Impact (Positive/ Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)	Nature of Impact (Positive/Negative)	Spatial Scape/ Extent (6)	Duration (6)	Severity (6)	Consequence	Probability (6)	Significance (108)
FLORA - damage or loss of existing vegetation	Maintenance of the property or no maintenance at all could result in the spread and/or establishment of alien and/or invasive species	N	2	4	3	9	5	45	N	2	4	3	9	5	45
	Property being used for illegal dumping.	N	1	4	3	8	5	40	N	1	4	3	8	5	40
FAUNA - loss in species due to neglect	Dumping of waste and no maintenance at the property can result in the invasion of pests.	N	2	4	3	9	5	45	N	2	4	3	9	5	45
SURFACE AND GROUNDWATER - contamination	Ablution on property, leaching from illegal waste dumping	N	2	4	4	10	5	50	N	2	4	4	10	5	50
VISUAL IMPACT	Waste/illegal dumping on site	N	1	4	2	7	5	35	N	1	4	2	7	5	35
HEALTH	Increase in pests, diseases	N	2	4	3	9	5	45	N	2	4	3	9	5	45
SOCIO-ECONOMIC	Loss of job opportunities associated with development	N	2	4	3	9	5	45	N	2	4	3	9	5	45

10 ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

10.1 Alterations to the EMPr

As EMPrs should remain dynamic and flexible, certain conditions may require the EMPr to be revised. These conditions may include the following:

- Changes in legislation;
- Published/gazetted norms and standards;
- Occurrence of unanticipated impacts or impacts of greater significance, intensity and extent than anticipated;
- Conditions in environmental authorisation or other authorisations which do not form part of the EMPr;
- Inadequate mitigation measures, i.e. where the level of an environmental parameter is not conforming to the required level despite the implementation of the mitigation measure; and
- Secondary impacts which occur as a result of the mitigation measures.

10.2 Responsibility

The Applicant, Alpha Grande (Pty) Ltd, will be responsible for the implementation of all mitigation and management measures as well as the compliance with this EMPr and any license and authorisation conditions.

The applicant will delegate its responsibilities to an Environmental Control Officer (ECO) during the construction phase.

Each contractor involved in the project will comply with the EMPr.

The ECO will be suitably qualified to perform the necessary tasks and will be appointed at a level such that he/she can interact effectively with site contractors, labourers and the public.

The ECO will be required to perform the following tasks:

- Monitoring and execution of the EMPr by being on site regularly (weekly or monthly);
- Inspect the site as required to ensure adherence to the management actions of the EMPr and authorisations/licences (compliance assessments/audits);
- Complete Site Inspection Forms;
- Provide inputs to or compile the environmental compliance assessment report;
- Liaise with contractors on issues relating to implementation of, and compliance with, the EMPr and authorisations/licences;
- Maintain a record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; and
- Maintain a public-complaints register in which all complaints are recorded.

The conditions of the authorisation/licences and EMPr will be brought to the attention of all persons (employees, workers, consultants, contractors etc.) associated with the undertaking of these activities and the applicant will take such measures that are necessary to bind such persons to the conditions thereof (contracts with penalties for non-compliances).

The applicant can further enforce this by running workshops in order to raise environmental awareness. These workshops should cover aspects such as fire prevention, strict use of ablution facilities and general duty of care. A pamphlet can be handed out on socially

acceptable and environmentally responsible conduct such as water conservation, waste management etc.

Entity:	Responsible Person:	Contact details:
Applicant	Mr Frans Sithole	082 322 3470
Environmental Control Officer	To be appointed by the Applicant	

10.3 Activities causing potential impacts

The following activities could cause potential impacts if not managed properly or if no mitigation measure is implemented:

- Removal of vegetation during site preparation;
- Establishment of the construction camp site / office;
- Establishment of access roads;
- Earthworks and movement of machinery / heavy vehicles / equipment on site during site preparation and construction;
- Stockpiling of soil and material during construction;
- Disturbances creating conditions for alien invasive vegetation species to spread;
- Hydrocarbon spills / leakages during construction and operational phase;
- Poor waste management (dumping) and littering during construction and operational phase;
- Poor management of water (storm water & potable water) during construction and operational phase;
- Poor management of ablution facilities and sewage during construction and operational phase;
- Random events such as fire;
- Poaching or removal of fauna species.

10.4 Potential Impacts

10.4.1 Negative Impacts

- Destruction, loss and fragmentation of the flora;
- Displacement of avifaunal community due to habitat loss, direct mortalities and disturbance (noise, dust and vibration);
- Erosion due to clearance of vegetation, compaction of soil or poor management of stockpiling areas;
- Pollution/contamination of soil, surface water and groundwater due to leakages or spillages of fuel, oil and hazardous substances;
- Pollution/contamination caused by littering or dumping of waste (building rubble or other);
- Dust and noise.

10.4.2 Positive impacts

- The property will be utilized and will therefore not form a potential site for illegal settlements and / or dumping; and

- Employment opportunities associated with both the construction and operational phases.

10.4.3 No-go Option impacts

- Underutilisation of the property;
- Risk of illegal settlers or criminals using the property;
- Risk of illegal dumping (currently evident); and
- Deterioration of property and alien vegetation infestation.

10.5 Management measures

Dedicated measures have been identified to manage the impacts identified above (Tables 9.2 and 9.3). The purpose of the EMPr is to ensure that undue or reasonably avoidable adverse impacts of the project are prevented; that impacts which cannot be prevented are managed to reduce their significance; and that the positive benefits of the project are enhanced. The applicant is responsible for the implementation of recommendations and mitigation/management measures and HydroScience cannot and will not take responsibility for the actions of the applicant or lack thereof.

Table 10-1: Identified potential impacts and proposed mitigation / management measures

1. Environmental Awareness Training

Management Outcome: All on-site staff are aware of and understands the individual responsibilities in terms of this EMPr and any other authorisations & licenses.						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All staff must receive environmental awareness training; • All new staff coming onto site must receive environmental awareness training; • All staff are aware of the conditions and controls linked to the Environmental Authorisation, Licenses and within the EMPr; • The responsible operator of vehicle / equipment / machinery must have the required training to make use of the spill kit in emergency situations; • All staff are made aware of their individual roles and responsibilities in achieving compliance with the environmental authorisation, licenses and EMPr; • The Contractor must erect and maintain information posters at key locations on site; • Environmental awareness training should include the following: i. Description of significant environmental impacts, actual or potential, related to their work activities; ii. Mitigation measures to be implemented when carrying out specific activities; iii. Emergency preparedness and response procedures; iv. Procedures to be followed when working near or within potentially sensitive areas; v. Water usage and conservation; vi. Solid waste management procedures; vii. Sanitation procedures;	Construction Contractor	Presentations should be as visual as possible - it can include posters, power point presentations, videos or any other material that will assist in the training.	Environmental awareness training must be done before construction starts and as soon as new staff members start on site and continue throughout the operational phase. Environmental posters must be on site at all times and must be visible / legible.	ECO	During the weekly or monthly inspection.	Photos Attendance Register Training material

viii. Dangers of open and/or unattended fires. • A record of all environmental awareness training courses undertaken must be available; • An attendance register of all staff that received environmental awareness training must be kept; • Course material must be available and presented in all appropriate languages; • Environmental training and topics can form part of the daily/weekly Toolbox Talks.						

2. Site Establishment

Management Outcome: Impacts on the environment are minimised when establishing new infrastructure and the development footprints are kept to a minimum and within demarcated site establishment area.

Potential Impacts:

- Loss of vegetation and avifaunal habitat
- Activities may lead to displeasing aesthetics, such as the storage of materials, excavation activities and the use and storage of machinery / vehicles / equipment
- Pollution of soil, surface runoff and groundwater due to spills on site

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**

• A Method Statement must be provided by the contractor prior to any on-site activity that includes:
  ○ overnight vehicle / machinery parking areas;
  ○ stockpile and lay down areas;
  ○ the batching area;
  ○ equipment storage and cleaning areas;
  ○ eating and ablution facilities;
  ○ waste management;
  ○ access route.
• Location of the site camp must be within an approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment;
• Sites should be located where possible on previously disturbed areas;
• No staff to be accommodated overnight on the property except security;
• Signs (safety) must be erected at the entrance to the working site;
• All storage areas should be marked as "Laydown" areas, should be barricaded and kept neat and tidy at all times.
• Housekeeping should be done daily.
	Construction Contractor	Area can be identified during a site visit.	Before site establishment and throughout the construction phase.	ECO	Before site establishment and during all site visits	Photos

3. Access Roads

Management Outcome: Minimise impact to the environment through the planned and restricted movement of vehicles to/on site.

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Loss of biodiversity through the damage of vegetation or killing of fauna
- Compaction of soil
- Erosion

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• During site planning, all access roads must be identified and assessed to ensure that the best route is chosen; • Access to the site must fall within the assessed area; • Preferably use the planned access roads; • Maximum use of existing roads (Gravel road and Mackenzie) must be made.	Project Manager Construction Contractor	Site walk-about before site establishment.	During planning and site establishment and construction.	ECO	During all site visits	Photos

4. Fencing where required / applicable

Management Outcome: To minimise impact to the environment and ensure safe and controlled access to the site through the erection of a fence/wall and gates where required.						
Potential Impacts: • Loss of habitat through the damage of vegetation • Loss of biodiversity through the damage of vegetation or killing of fauna • Compaction of soil • Erosion • Security breaches						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All gates must be fitted with locks and be kept locked after working hours; • All demarcation fencing and barriers must be maintained in good condition for the duration of the site establishment period; • On completion of the project, all temporary fences are to be removed and where possible re-used by the contractor at new project sites; • The contractor will ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.	Construction Contractor	Establish fencing / wall	Before site establishment	ECO	During all site visits	Photos

5. Water Management

Management Outcome: Undertake responsible water usage and prevent pollution of water.

Potential Impacts: The Olifantsnek Dam is within 500m of the site and can be polluted by on-site activities if runoff is not controlled.

- Pollution of groundwater (other borehole users on neighbouring properties within the Olifantsnek area)
- Pollution of surface water (through accumulation and run-off)
- Availability of groundwater to Olifantsnek residents if abstraction is not controlled / sustainable.

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All reasonable measures to limit pollution or sedimentation of water, with specific focus on runoff from site. • Ensure water conservation and responsible use by: – Sourcing construction water from responsible and legal sources; – Minimising water use during cleaning of equipment; – Undertaking regular audits of water systems; – Discuss water usage and conservation during environmental awareness training and toolbox talks. – Not exceeding recommended water abstraction quantities (HK Geohydrological, 2022)	Project Manager	Install in-line flow meter on borehole.	During construction and operation	ECO	During all site visits Quarterly	Photos Borehole monitoring – abstraction volumes & quality

6. Storm and Waste Water Management

Management Outcome: An effective system of storm water run-off control is implemented, where required and impacts to the environment caused by storm water and wastewater discharges during activities are avoided.

Potential Impacts:

- Pollution of storm water
- Pollution of soil
- Erosion and siltation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Construction should preferably take place in the dry season (winter) as natural runoff is minimal then; • Embankments must be established around excavation areas and stockpiles to divert surface runoff away from these areas to avoid water pollution; • Additional storm water concentration (higher volumes) must be contained (attenuated) before controlled discharge; • Appropriate pollution control (hydrocarbon, litter & silt trap) necessary to prevent discharge of water containing polluting matter or visible suspended solids; • Runoff from the batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location legally approved to accept the wastewater (keep safe disposal certificate); • All spillages of hydrocarbons onto surfaces must be cleaned by the use of an approved absorbent material and the used absorbent material disposed of at an appropriately licensed waste disposal facility (keep safe disposal certificates); • Any stockpiled soil and rock should have storm water management measures implemented around it; • The large roof structures to be built and sealed (concrete / tar / brick) surfaces will increase storm water volumes that need to be managed;	Contractor	SWMP	Measures implemented before site establishment starts and checked during construction and operational phases.	ECO	During all site visits	Photos

• A storm water management plan (SWMP) must be available and used during all the phases. This must include siltation / attenuation ponds handling storm water concentrations. <u>During Operation, the following will be required:</u> • Clean water (storm water runoff) and dirty water systems (water from bathrooms & kitchens) must be separated; • Clean storm water must be directed away from potential contamination sources to allow larger volumes stormwater to remain clean and suitable for discharge; • The spillage of chemicals and / or sewerage must be reported immediately to the authorities; • An emergency accidental spillage plan must be in place and workers must be trained to handle such accidents; • No uncontrolled discharges, resulting in pollution of the receiving environment (Olifantsnek Dam), shall be permitted; • Chemical storage areas should be sufficiently contained (bunded), and the use of chemicals should be controlled; • All water retention structures, including storm water dams, retention / attenuation ponds etc. should be constructed to have adequate freeboard to be able to contain water from 1:50 year rain events.	The Applicant			The Applicant's Environmental Officer	On a regular basis, as agreed by the Applicant	

7. Solid Waste Management (Waste Management Plan)

Management Outcome: Wastes are appropriately stored, handled and safely disposed of at a licensed waste facility**.**

Potential Impacts:

- Loss of habitat through the damage of vegetation
- Compaction of soil
- Pollution of soil and groundwater due to spillages or leachate associated with dumping of solid waste
- Establishment of Alien Invasive Plant Species
- Aesthetics
- Health – pests etc

Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
<u>General:</u> • All measures regarding waste management must be undertaken using an integrated waste management approach considering the waste management hierarchy; and • A suitable position must be found and clearly demarcated for waste collection and storage. <u>Prevention of waste:</u> • Material storage areas should be safe, secure and weather-proof to prevent damage to material (resulting in waste generation) and theft. Area with impermeable base and roof or in sealed containers. • Due to the additional movement of people, there will be increased litter production and higher probability of littering. Therefore, there should be on-site signs raising the awareness of the impacts of littering on the natural environment and weekly litter patrols to collect litter. • Train staff/contractors to operate in an environmentally responsible manner (closing of taps for water conservation, reporting spills / leaks, no littering etc.). • No planned maintenance or servicing of vehicles / machinery / equipment on site. If emergency maintenance is required to on-	Contractor	Services agreement with RLM	Measures must be implemented before site establishment starts and must be controlled during construction and operational activities.	ECO	During all site visits	Photos Documents – safe disposal certificates or municipal account

site vehicles, machinery and/or equipment, drip trays and / or absorbent mats will be placed underneath the vehicles / machinery / equipment where maintenance work is conducted to prevent grease/oil spillages impacting the environment or generating waste (contaminated soil). <u>Reduction / minimisation of waste:</u> • Reduce waste quantities and disposal costs through a reduction in the materials ordered. • "Take-back" schemes – setting up schemes with suppliers to take back surplus materials. • Engage with the supply chain to supply products and materials that use minimal packaging. <u>Reuse / recycling of waste:</u> • Separate / sort / segregate waste for collection and recycling - make arrangements with recycling contractors to provide clearly marked bins for material separation / sorting. Make sure that contractors are aware of the placement of the bins and their responsibility to separate / sort materials. • Though no special disposal methods are required for non-hazardous waste, non-biodegradable refuse such as glass bottles, plastic bags, etc., must be stored in suitable containers to allow for recycling and emptied on an as-required basis for recycling purposes during the working phase. • Segregate packaging for reuse. <u>Waste handling on site:</u> • Separate / segregate / sort waste into different containers. • Collect waste in suitable containers (drums / skips / bins on site). • Waste containers should be marked, or colour coded to indicate which types of waste can be disposed to it. Staff to be trained in this regard to segregate waste. • Ensure sufficient containers are available for storage of waste prior to removal off site to prevent overflow and littering on the site and surroundings. • Ensure no litter, refuse, waste and rubble generated on the premises will be placed, dumped or deposited on this site, adjacent or surrounding properties.						

• The waste collection and storage site must be maintained in a clean and orderly fashion. • Waste must be disposed, as soon as possible to a municipal transfer station, skip or on a licensed landfill site. Waste must not be allowed to stand on site to decay, resulting in malodours and attracting pests. Empty containers regularly and waste should not be stored on site in excess of 30 days. • Waste collection bins with secure covers (scavenger and weatherproof) must be provided to prevent fauna and rain entering the container. Waste containers must not to be left standing without a cover as this may attract fauna to inspect the skip and possibly cause death or injury to the fauna. • Waste may not be burnt or buried on site. • Hazardous waste must be stored separately from general waste on an impermeable surface within a bund wall and disposed of at a licensed hazardous waste site if not recycled. <u>Waste removal & disposal:</u> • The transporter of the waste must be registered / licenced. • Site must be easily accessible for trucks picking up or dropping off the skips. • Remove waste from site for recycling or disposal to the local licensed municipal landfill / waste management facility on a regular basis (at least weekly or when container is full). • No burning or burying of waste. • Any hazardous waste will be stored and handled according to the relevant legislation and only disposed to licensed disposal facilities. <u>Documentation:</u> • Report on the quantities of different waste streams managed (landfill, reuse, recycling, energy recovery). • Ensure copies of all waste manifests (safe disposal certificates) are kept, showing responsible handling, transport and disposal by a reputable waste handler. • Include measure in contract that will ensure contractors are required to clean their work area after construction.						

8. Vegetation Clearing

Management Outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed project and must be done in phases according to the development phases.

Potential Impacts: Plant species is of low sensitivity. No SCC expected. Terrestrial Biodiversity is of Very High sensitivity - ESA1. In MBR buffer zone.

- Loss of habitat through the damage of vegetation
- Loss in biodiversity
- Compaction of soil
- Establishment of Alien Invasive Plant Species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• During vegetation clearance, methods should be employed to minimize potential harm to fauna species. Clearing has to take place in a phased and slow manner, to maximize potential and time for any mobile species to move to adjacent areas; • All vegetation removed during the site establishment period must be disposed of at a registered “green” landfill site or composting site or in an appropriate manner as agreed by the ECO unless it is indigenous vegetation which could be used during rehabilitation; • If herbicides / pesticides are used, only a registered control operator must carry this out or it must be carried out under the supervision of a registered control operator, or someone who is appropriately trained and a daily register must be kept of any usage; • Trees, shrubs, grass, natural features and topsoil which are not removed during vegetation clearance shall be protected from damage during construction; • When removing trees, maintain indigenous trees that will not hamper development; • Removal and disposal of alien invasive plant species must be done in an appropriate manner as required by law - Alien Invasive Species Regulations 2020 (NEMBA Act 10 of 2004).	Contractor The Applicant	Site survey or walkabout	Before site establishment and during activities	ECO	During all site visits	Photos

The following alien and invasive species were found on the property (TBC, 2022) and need to be eradicated: NEMA Category 1b: • *Argemone ochroleuca* (White flowered Mexican poppy) • *Ipomoea purpurea* (Common Morning Glory) • *Lantana camara* (Lantana) • *Melia azedarach* (Syringa) • *Nicotiana glauca* (Wild Tobacco) • *Verbena bonariensis* (Tall Verbena) NEMBA Category 2b or 3: • *Agave sisalana* (Sisal) • *Morus alba* (White mulberry)						

9. Protection of Fauna

Management Outcome: Minimise the disturbance to fauna/avifauna.

Potential Impacts: Animal species is of medium sensitivity. Terrestrial Biodiversity is of Very High sensitivity - ESA1. In Magaliesberg IBA.

- Loss of habitat through the damage / clearance of vegetation
- Loss in biodiversity due to catching and killing
- Establishment of Alien Invasive Plant Species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• No poaching must be tolerated under any circumstances; • No trapping or poisoning of animals; • No feeding of animals on site or the adjacent properties; • Any noisy point-sources utilised on site should be enclosed, and all equipment / machinery fitted with silencers where applicable; • All equipment / machinery will be serviced and maintained within operating specifications to prevent excessive noise; • Facility lighting during construction & operation should be kept to a minimum and should make use of the latest technology to ensure that light disturbance is minimised. This will also reduce the attraction of insects (and in turn insectivorous birds) to the facility. • Outside lighting should be designed and limited to minimize impacts on fauna. All outside lighting should be directed away from sensitive areas and facing downwards. Fluorescent and mercury vapour lighting should be avoided, and sodium vapour (green/red) lights should be used wherever possible.	Contractor The Applicant	Site survey or walkabout	Before site establishment and during construction activities During operational phase	ECO	During all site visits	Photos Record of site survey/ walkabout

10. Protection of Heritage Resources

Management Outcome: Minimise the disturbance to heritage resources.

No heritage resources were found on site and this section addresses the process should something be found during construction.

Potential Impacts: Archaeological and Cultural Heritage is of low sensitivity. Palaeontology is of High sensitivity.

- Loss of heritage resources
- Damage to heritage resources

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**

• A method statement compiled to provide the process to be followed during a chance find.
• All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported as per the information below or to the nearest museum, archaeologist / palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken.
• Reporting of the findings must be done as follows:
  ○ Archaeological sites or remains, fossils or other categories of heritage resources - SAHRA APM Unit (Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA.
  ○ Unmarked human burials - SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase / Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA
  ○ If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource.
	Contractor		During construction activities	ECO	During all site visits	Photos

○ If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2 rescue operation may be required subject to permits issued by SAHRA. ○ Sufficient time should be allowed to remove/collect such material before work recommences.						

11. Safety of the Public

Management Outcome: All precautions are taken where possible to minimise the risk of injury, harm or complaints.

Potential Impacts:

- Damage to property
- Injuries
- Vehicle accidents
- Traffic congestions – nuisance / frustration

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Demarcate and restrict public access to the working area; • Ensure that there is signage all over the site that warns the public of activities (especially during construction); • Ensure that there are sufficient road signs so that the public is aware of vehicles moving around; • Points men/women must be appointed to direct traffic or warn motorists of any danger on the roads; • All unattended open excavations must be adequately fenced or demarcated with chevron tape; • Adequate protective measures must be implemented to prevent unauthorised access to areas and climbing of structures; • Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged. • The low trip generation volumes do not warrant any demand side mitigation methods (EPS, 2022).	Contractor		Proper planning must be done before establishment and implemented during construction and operational activities	ECO	During all site visits	Photos

12. Sanitation

Management Outcome: Clean and well-maintained toilet facilities are available in an effort to minimise the risk of disease and impact to the environment.

Potential Impacts:

- Risk of diseases
- Spillages / overflows could occur
- Odour

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**

• Keep all ablution facilities clean;
• Portable dry chemical toilets must be provided on-site for use during construction;
• Ablution facilities and / or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances;
• Proper hand washing facilities, including soap, must be provided for the ablution facilities and the chemical toilets;
• Where mobile chemical toilets are required, the following must be ensured:
  ○ If possible, toilets must not be located close to any storm water runoff channels;
  ○ Toilets must not be located close to the Olifantsnek Dam;
  ○ Toilets are secured to the ground to prevent them from blowing over;
  ○ Toilets are cleaned or emptied regularly and the contents are managed in accordance with the EMPr for waste and wastewater disposal to prevent spills and/or overflows;
  ○ Toilets are emptied before long weekends and workers holidays, and must be locked after working hours;
  ○ Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards;
  ○ A copy of the safe waste disposal certificates must be maintained.
	Contractor	Records of disposal certificates.	<u>Construction phase:</u> Portable dry chemical toilets must be provided before site establishment starts and removed once rehabilitation is completed.
			
			<u>Operational phase:</u> Formal water-borne flush facilities for the operational phase will discharge to a septic tank which will be pumped (refer to Appendix F).
				ECO	During all site visits	Photos
						
						Documents - Certificates of removal and safe disposal

• During the operational phase, the same will apply but flushing toilets discharging to a septic /conservancy tank will be installed and used. Septic / conservancy tanks will be emptied by honeysucker on a regular basis. Sewage will be discharged to a licensed wastewater treatment facility with adequate capacity to handle the volumes. A WUL will be required for sewage management. • The septic tank is to be placed in the south western corner of the site for a negligible impact.						

13. Emergency Procedures (Section 30 of NEMA)

Management Outcome: Emergency procedures are in place to enable a rapid and effective response to all types of environmental and other emergencies.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**

• Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project;
• The ERAP must deal with accidents, incidents, and emergency situations in line with relevant legislation;
• The ERAP to include:
  ○ Natural disasters (including flooding),
  ○ Fires,
  ○ Explosions,
  ○ Accidents & incidents,
  ○ Spillages, leakages, overflows etc
• The ERAP must also include responsibilities and emergency contact telephone numbers;
• All staff must be made aware of emergency procedures, escape routes, emergency assembly points etc. as part of environmental awareness training;
• The RLM fire department must be made aware of a fire as soon as it starts;
• In the event of emergency mitigation measures being necessary to contain a spill or leak, it must be implemented as per the section below - Hazardous Substances.
	Contractor	Notice boards.
		Toolbox talks.
			Must be done before site establishment starts and implemented during construction and operational activities.	ECO	During all site visits	Photos
						
						Documentation

14. Hazardous Substances

Management Outcome: Safe storage, handling, use and disposal of hazardous substances.						
Potential Impacts: • Contamination of soil, groundwater or storm water due to leaks/ spills						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**

• The storage and use of hazardous substances to be minimised and substituted with non-hazardous and non-toxic alternatives where possible;
• All hazardous substances will be stored in suitable containers as defined in the legislation and Material Safety Data Sheet (MSDS);
• Containers will be clearly marked to indicate contents, quantities and safety requirements;
• All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers (110% of container capacity);
• An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis;
• All hazardous chemicals that will be used on site will have MSDS;
• All employees working with HCS will be trained in the safe use of the substance and according to the MSDS;
• Employees handling HCS / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment (PPE) must be made available;
• Hydrocarbons (oil, grease, fuel):
  ○ In appropriate storage tanks or in bowsers;
  ○ The tanks / bowsers must be situated on a smooth impermeable surface (concrete) with a permanent bund.
	Contractor	Training and awareness.
		
		Inspections
			Planning done prior to site establishment and implemented during construction and operational activities.	ECO	During all site visits	Photos

The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks / bowsers (110% statutory requirement plus an allowance for rainfall); ○ The floor of the bund must be sloped, draining to a separator; ○ Refuelling should preferably be conducted off-site; ○ For re-fuelling on site, an impermeable groundcover must exist to protect the soil. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; ○ All empty dirty drums must be stored on a drip tray or within a bunded area; • No unauthorised access into the hazardous substances' storage areas shall be permitted; • No smoking must be allowed within the vicinity of the hazardous / flammable chemical storage areas; • Adequate fire-fighting equipment must be made available at all hazardous / flammable chemical storage areas; • An appropriately sized spill kit kept on-site relevant to the scale of the activity involving the use of a hazardous substance must be available at all times; • The responsible operator must have the required training to make use of the spill kit in emergency situations; • In the event of a spill, contaminated soil / material used to absorb spill must be collected in containers and stored in a central location according to the Norms and Standards for Waste Storage (GNR 926 of 29 November 2013) and disposed of according to the NEMWA.						

15. Batching area

Management Outcome: To control concrete and cement batching activities in order to minimise spillages and contamination of soil, surface water and groundwater.

Potential Impacts:

- Contamination / pollution of surface – or groundwater or soils

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Ready-mix should preferably be used; • Concrete mixing must be carried out on an impermeable surface (such as boards and/or within a bunded area with an impermeable surface or wheelbarrow, if batches are small) or make a hard surface and remove when done; • Bagged cement must be stored in an appropriate facility and at least 10 m away from any runoff channel, gullies and drains; • A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; • Hardened concrete from the washout facility can either be reused or disposed of at an appropriate licenced disposal facility; • Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; • Sand and aggregates containing cement must be kept damp to prevent the generation of dust; • Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility.	Contractor		During construction activities.	ECO	During all site visits	Photos

16. Dust & Emissions

Management Outcome: Dust prevention measures are applied to minimise the generation of dust.

Potential Impacts:

- Nuisance for neighbouring residents or people at work
- Health risk

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Take all reasonable measures to minimise the generation of dust. • Removal of vegetation must be limited to the working area/ footprint. • During high wind conditions, the ECO will evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level. • Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water; particularly during prolonged periods of dry weather. Such measures must also include the use of temporary stabilising measures (e.g., chemical soil binders, straw, brush packs, chipping). • All vehicles and machinery / equipment used on, or entering the site, must be maintained and serviced regularly to ensure that they do not emit smoke or fumes. • The contractor's representative must ensure that all on-site vehicles comply with the old SABS 0181 standards (now SANS 10181:2003 in conjunction with SANS 10282:2003). • Limit idling time of vehicles / equipment / machinery. • Avoid overloading of construction vehicles. • Any solvent-based finishes such as paints, varnishes, sealants, and polishes will contain minimal levels of Volatile Organic	Contractor		During construction activities.	ECO	During all site visits	Photos

Compounds (VOC) and no Chloro-Fluoro Carbons (CFC), which may harm the atmosphere. Water-based paints are to be used where possible and plant-based stains and sealants must be considered as these are more environmentally friendly. • Workers in high dust areas to wear dust masks.						

17. Noise

Management Outcome: To prevent unnecessary noise to the environment and surrounding community by ensuring that noise from activities is mitigated.

Potential Impacts:

- Nuisance for residents or people at work
- Health risk

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Construction hours must be adhered to, weekdays from 07:00 – 17:00; • If possible, construction activities must be limited to the week and should activities take place over a weekend, the I&APs and surrounding landowners must be consulted with. • The contractor is to abide by the by-laws of the RLM relating to noise control. • Ear plugs are to be worn by construction workers as and when required (areas of high noise levels, operators of machinery etc). • Reducing the noise produced through silencers, lubrication and maintenance, vibration damping i.e. placing a layer of damping material (rubber, neoprene, cork or plastic) beneath the vibrating machine. • Reduce noise from vehicles by: o turning off engines when they are not in use; o checking the brakes are properly adjusted and don't squeal; o no revving the engine unnecessarily; o only using the horn in emergencies; and o replacing exhaust systems as soon as they become noisy.	Contractor		During construction activities.	ECO	During all site visits	Photos Documents Emails

18. Fire prevention

Management Outcome: Prevention of uncontrollable fires.

Potential Impacts:

- Possible injuries
- Air pollution due to smoke
- The smoke can be a health risk
- Loss of habitat
- Damage to property

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Designated smoking areas must be allocated; • Bins must be provided for cigarette buds at the designated smoking area; • Firefighting equipment must be available on all vehicles located on site; • The local Fire Department must be informed of activities; • Contact numbers for the Fire Department and emergency services must be communicated in environmental awareness training, toolbox talks and displayed at a central location on site.	Contractor		During construction and operational activities.	ECO	During all site visits	Photos

19. Stockpile and Stockpiling Areas

Management Outcome: To reduce erosion and sedimentation as a result of stockpiling.

Potential Impacts:

- Soil erosion and siltation

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All material that is excavated during the activities (earthworks) must be stored appropriately on site; • All stockpiled material must be maintained and kept clear of weeds and alien invasive species by undertaking regular weeding and control methods; • Stockpiles must not exceed 2 m in height; • During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g., cloth, tarpaulin etc.); • Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion of the material and sediment in runoff. • Soil and construction related stockpiles must be bermed to prevent leachate and polluted runoff water from leaving the property during the construction phase. • Soil and construction related stockpiles must be located a minimum of 100m from the 1:100 year flood line (Olifantsnek Dam).	Contractor		During construction activities.	ECO	During all site visits	Photos

20. Landscaping and Rehabilitation / Remediation

Management Outcome: Environmental degradation does not occur as a result of the project.

Potential Impacts:

- Soil erosion
- Infestation of weeds and alien invasive species

Impact Management Actions	Implementation			Monitoring		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• All spoil and waste will be disposed to a licensed waste disposal site and certificates of safe disposal provided; • Stockpiled topsoil must be used for rehabilitation; • Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; • Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; • Subsoil must be ripped before topsoil is placed; • Sections of the property that will not be paved / built or that could rather be landscaped should be landscaped according to a landscape plan or planting plan; • Trees that were left on site must be maintained and included as part of the landscape plan; • If possible, the project must be timed so that rehabilitation/ landscaping can take place at the optimal time for vegetation establishment; • After site rehabilitation / landscaping, the sites must be monitored in order to ensure that rehabilitation is successful. • During the monitoring period, all alien invasive plant species must be eradicated according to an Alien Invasive Eradication Plan and bare patched reseeded / replanted.	Contractor		After construction or if possible, during the last phases of construction.	ECO	During all site visits	Photos Safe

21. Communication

Management Outcome: Proper communication with landowners, neighbours and the public						
Impact Management Actions	**Implementation**			**Monitoring**		
	Responsible person	**Method of Implementation**	**Timeframe for Implementation**	**Responsible person**	**Frequency**	**Evidence of Compliance**
• Notify landowners, neighbours and councillors at least 7 days before activities start, of the intention to commence with the construction. This should be done as the project progresses from one area to the following. • Keep a complaints register on site. • A notice board should be visible with the contact information of the Applicant, Project Manager, Contractor, Emergency Contact and ECO. • In addition to the contact information there should also be a timeframe of when work will commence and when it will be completed.	Contractor The applicant representative	Telephone calls Emails Notifications/ Posters	Before construction starts and during construction.	ECO	During all site visits	Photos Emails Signed register Complaints register

10.6 Monitoring programme

All records will be kept for at least five (5) years.

The following aspects need to be monitored and audited:
a) Compliance with EMPr, environmental authorisation and any other licenses' conditions
- Appoint an Environmental Control Officer (ECO)

b) Noise, Nuisance and Disturbance Monitoring
- A record of complaints must be kept as well as the measures taken to address these complaints.

c) Occupational Health and Safety Act (OHSA), 1993 (Act 85 of 1993) Compliance
- Register to indicate that all the employees and contractors have been informed as to their rights under the Act; and
- Accident records as per the Act - reported to the Department of Trade and Industry (DTI) and the Department of Labour (DOL).

d) Groundwater monitoring (borehole water suitability for use)
- The existing borehole on site (drilled June 2022) will be sampled and analysed bi-annually (wet and dry seasons) to check water quality suitability for domestic use (human consumption).
- Water quality parameters: pH, Electrical Conductivity (EC), Total Dissolved Solids (TDS), Chloride (Cl), Sulphate (SO_4), Nitrate (NO_3), Ammonium (NH_4), ortho-Phosphate (o-PO_4), Fluoride (F), Calcium (Ca), Magnesium (Mg), Sodium (Na), Potassium (K), Aluminium (Al), Iron (Fe), Manganese (Mn), E.coli, Total Coliforms, Total Hardness, Alkalinity.
- Water level monitoring to ensure over-abstraction is not taking place, there is no impact on the groundwater table and abstraction is not affecting other groundwater users adversely.

10.7 Record keeping and reporting

10.6.1 Compliance recording and reporting

Accurate and up-to-date records will be kept by the ECO of all system malfunctions resulting in non-compliance with the EMPr, environmental authorisation and licenses.

10.6.2 Incident recording and reporting

The applicant will also, within 24 hours, ensure that the relevant authorities are notified of the occurrence or detection of any incident which has the potential to cause, or has caused pollution of the environment, health or safety risks or which is a contravention of any EMPr, environmental authorisation or license condition. The applicant is then to submit an action plan, indicating measures, which will be taken to:
- Correct the impacts resulting from the incident;
- Prevent the incident from causing any further impact; and
- Prevent a recurrence of a similar incident.

10.6.3 Complaints recording and reporting

A complaints register will be kept and all complaints from the public / community will be noted therein as well as measures taken to rectify the situation as described above.

10.7 Environmental awareness plan

10.7.1 Objectives

The objectives of an environmental awareness plan are to:

- Inform employees, landowners, contractors and visitors of any environmental risk which may result from their presence, work or activities, and
- Inform employees, landowners, contractors and visitors of the manner in which the identified possible risks must be dealt with in order to avoid pollution or degradation of the environment and health and safety hazards.

In general, the purpose of implementing an environmental awareness plan is to optimise the awareness of those on the property and partaking in the activities, which have the potential to impact negatively on the environment, and in doing so, promote the goal of sustainable development.

10.7.2 Communication

Both objectives of the environmental awareness plan indicate that employees, landowners, contractors and visitors must be informed of environmental matters. Information sharing is only possible through effective communication channels.

The goal for proficient communication is to provide structures for effective communication, participation and consultation that relate to the occupational health and safety hazards, environmental hazards and the Safety, Health, Environment and Quality (SHEQ) management system.

The objective of the communication procedure is to ensure effective communication flow, involvement of all levels of employees in the communication chain and to comply with the requirements in terms of ISO 9001:2008 clause 5.5.3 and ISO 14001:2004 clause 4.4.3.

10.7.3 Communication responsibility

It will be the responsibility of the SHEQ officer to communicate the environmental awareness plan with employees, landowners, contractors and visitors. Should the SHEQ officer struggle with information or should there be a query regarding certain environmental issues it can be discussed with the appointed ECO during construction.

The communication can be done in the following way:

- As part of toolbox talks;
- Posters or information sheets on the notice board, within the ablution facility or at specific spots such as at the drinking water point or waste bins;
- Visitors entering the site could be given an induction or a brochure of the main environmental and safety risks;
- Environmental awareness training for the contractors and their staff members as well as the applicant’s representative that will be working on site. This should be done before the construction commences.

10.7.4 Aspects covered

The following Environmental Risks / Aspects should be covered as part of the Environmental Awareness Plan:

- Water saving / conservation;
- Waste management / Recycling;
- Importance of PPE;
- What are sensitive areas (Olifantsnek Dam);
- Erosion;
- Alien Invasive Species;
- Risk of spillages (fuel, oil, cement and hazardous material);
- Dust
- Noise
- Importance of nature and why we protect it.

11 CONCLUSIONS & RECOMMENDATIONS

Based on the impact assessment (Section 9), it is clear that mostly the construction activities and to a lesser degree, the operation of the guest lodge can potentially have a negative impact on the environment. The significance of the impact can, however, be mitigated / managed to a low to moderate low significance.

11.1 EAP Opinion

It is the opinion of the EAP that the project may continue from an environmental perspective based on the following:

- **Location:** The site is located within the town of Olifantsnek (part of town based on SDF) with a beautiful view of the Olifantsnek Dam, and in close proximity to the MPE, Kgaswane Nature Reserve and MBR (tourist attractions).
- **Access and road infrastructure:** The site is accessible from the R24 route between Johannesburg and Rustenburg which has recently been upgraded and provides access into the town of Olifantsnek. Stubb Street is north of the site and MacKenzie directly east and a gravel road west.
- **Land use:** The property is currently zoned as a park (public open space) but belongs to a private entity and has belonged to private entities for at least the last 40 years. The property is therefore not public ownership. The property is currently unused except for illegal waste dumping.
- **Cultural heritage:** No sites of archaeological or cultural heritage significance will be impacted. A heritage impact assessment exemption letter was compiled due to the low sensitivity and disturbance of the site (Archaetnos, 2022).
- **Biodiversity:**
  - The site is not located within the MPE.
  - The site is located within the MBR buffer zone.
  - Both terrestrial (ESA1) and aquatic (CBA) biodiversity are rated as very high by the screening tool. The NW Biodiversity Sector Plan (Table 13: 3) indicates Tourism & Accommodation as restricted with site-specific conditions & controls (the same as for open space).
  - No threatened or protected species were identified during the biodiversity study (TBC, 2022).
  - An alien invasive eradication programme will control alien and invasive vegetation on site during construction and operation.
- **Services:** There are no municipal services in Olifantsnek.
  - However, solid domestic type waste will be collected by RLM.
  - Electricity will be sourced from Eskom.
  - Water supply will be from a borehole (see Appendix D for Geohydrology study). A WUL application will be lodged (eWULaas reference: WU26056). Water can be abstracted / used at a sustainable rate of 12m^3/day as is required by the development.
  - Sewage will be stored in a septic tank and pumped for off-site disposal. The septic tank is to be placed in the south western corner of the site for a negligible impact.
- **Socio-economic:** The project will result in a major financial investment in the area (R25 million) and create jobs, 150 during the construction phase and 12 during the operational phase.
- **Fatal flaws:** No fatal flaws from an environmental perspective.
- **Need and desirability:** The property has a beautiful view of the Olifantsnek Dam (see photographs), and is in close proximity to the other tourist attractions in the area such as the MPE, Kgaswane Nature Reserve and MBR. No other functioning guest lodge in Olifantsnek exists as could be determined. The guest lodge can therefore provide accommodation for:
  - Tourists – international and national
  - Parents of the scholars of REC (from southern Africa) who visit the school to:

        - Attend school events.
        - Attend functions
        - Collect children for holidays
    - Visitors to school for camps & functions:
        - Guest speakers
        - VIPs

11.2 Conditions

The project can be authorised under the following conditions:

- Compliance with EMPr.
- Proper implementation of the specialists' recommendations.
- Obtain a Water Use License (WUL) from DWS for groundwater abstraction, sewage management and proximity to Olifantsnek Dam.
- Rezone the property through SPLUMA.

12 REFERENCES

Archaetnos Culture & Cultural Resource Consultants, 2022. Letter for HIA exemption request: Proposed vegetation clearance (Activity 12 of Listing 3) and development of self-standing units and guest lodge (Activity 6 of Listing 3) with associated roads (Activity 4 of Listing 3) on Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province. 24 May 2022.

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The Biodiversity Company, 2022. The Terrestrial & Freshwater Ecology Assessments for the Proposed Development of Erf 185 Olifantsnek JQ, Rustenburg Local Municipality, Bojanala Platinum District Municipality, North West Province. May 2022.

Legislation:

- Conservation of Agricultural Resources Act (CARA), 1983 (Act 43 of 1983)
- Constitution of the Republic of South Africa (CRSA), 1996 (Act 108 of 1996)
- National Environmental Management Act (NEMA), 1998 (Act 107 of 1998)
- National Environmental Management: Biodiversity Act (NEM:BA), 2004 (Act 10 of 2004)
- National Environmental Management: Protected Areas Act (NEM:PAA), 2003 (Act 57 of 2003)
- National Environmental Management: Waste Act (NEM:WA), 2008 (Act 59 of 2008)
- National Heritage Resources Act (NHRA), 1999 (Act 25 of 1999)
- National Water Act (NWA), 1998 (Act 36 of 1998)