

# ENVIRONMENTAL IMPACT ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF A LODGE IN THE HOBATERE ROADSIDE CONCESSION, KUNENE REGION

2024

App - 240513003588

**GREEN EARTH Environmental Consultants** 

Project Name:	ENVIRONMENTAL IMPACT ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF A LODGE IN THE HOBATERE ROADSIDE CONCESSION, KUNENE REGION		
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### **EXECUTIVE SUMMARY**

*Green Earth Environmental Consultants* were appointed by the Proponent, Namib Wilderness Safaris (Pty) Ltd t/a Wilderness Namibia, to conduct an Environmental Impact Assessment to obtain an Environmental Clearance for the proposed construction and operation of a lodge in the Hobatere Roadside Concession, Kunene Region. The land within the immediate vicinity of the project site is predominately characterized by open land, tourism, residential and farming activities. In terms of the Regulations of the Environmental Management Act (No 7 of 2007) an Environmental Impact Assessment must be done to address the following 'Listed Activities':

#### TOURISM DEVELOPMENT ACTIVITIES

6. The construction of resorts, lodges, hotels or other tourism and hospitality facilities.

#### **OTHER ACTIVITIES**

11.2 Construction of cemeteries, camping, leisure and recreation sites.

The key characteristics/environmental impacts of the proposed project are as follows:

Impact on environment	Nature of impact
More efficient and intensive use of land.	Positive for the area and Namibia in general.
Creation of employment and transfer of skills.	Positive as employment will be created during construction and operation.
Improvement of the quality of life of families.	Women plays an important role in tourism in this area. Involving women in the project and transferring skills to them will directly improve the livelihood of families.
The creation of dust.	Negative during site preparation, construction and use.
There will be an impact on traffic.	Negative during site preparation and construction and once operational as the site will result in the increase in traffic on the main roads in the area.
The creation of noise.	Negative during construction but low and on par with the noise levels associated with the general operational activities.
Possible impact on cultural/heritage aspects.	No items of archeologic value or graves were observed during the site visit which means the impact will be low. If any items or graves are found during construction, the impact will be high and irreversible.
Impact on fauna and flora.	Animals, reptiles, and birds will be disturbed during the clearing of the land. Permits must be obtained to remove

	protected tree species.
There might be a possible visual impact.	Medium to high as land will be utilised
	for building infrastructure.
Impact on animal migration/movement.	The area will be fenced off to prevent
	wildlife and animals from damaging the
	infrastructure.
Impact on groundwater, surface water and	The impact will be negative in case of
soil.	spilling of hazardous materials during
	construction and operation.
Impact on health and safety.	Low if mitigated during construction and
	operations.

The environmental impacts during the operational phase of the proposed project:

IMPACTS DURING OPERATIONAL PHASE			
Aspect	Impact Type	Significance of impacts Unmitigated	Significance of impacts Mitigated
Ecology Impacts	-	M	L
Dust and Air Quality	-	М	L
Groundwater Contamination	-	М	L
Waste Generation	-	М	L
Failure of Reticulation Pipeline	-	М	L
Fires and Explosions	-	М	L
Safety and Security	-	М	L

The impact evaluation criterion of the proposed project:

IMPACT EVALUATION CRITERION (DEAT 2006):			
Criteria	Rating (Severity)		
Impact Type + Positive		Positive	
	O No Impact		
	-	Negative	
Significance of	L	Low (Little or no impact)	
impacts	М	Medium (Manageable impacts)	
	Н	High (Adverse impact)	

The negative impacts associated with the project are the impact on the natural vegetation, birds and other animals, the natural drainage systems, ground and surface water, waste production, noise and dust during construction and operation, the danger of residents and visitors being injured during construction, the transmission of diseases from people or to people involved in construction and operations, the loss of land during the alignment and construction of roads / infrastructure. However, mitigation measures will be provided that can control the extent, intensity, and frequency of these named impacts in order not to have substantial negative effects or results.

The type of activities that will be carried out on the site will not negatively affect the amenity of the locality and the activities do not adversely affect the environmental quality of the neighbouring farms, portions or areas. None of the potential impacts identified are regarded as having a significant impact to the extent that the proposed project should not be allowed. However, the operational activities further on need to be controlled and monitored by the assigned subcontractors and the proponent.

The Environmental Impact Assessment which follows upon this paragraph was conducted in accordance with the guidelines and stipulations of the Environmental Management Act (No 7 of 2007) meaning that all possible impacts have been considered and the details are presented in the report.

Based upon the conclusions and recommendations of the Environmental Impact Assessment Report and Environmental Management Plan following this paragraph, the Environmental Commissioner of the Ministry of Environment, Forestry and Tourism is herewith requested to:

- 1. Accept the Environmental Impact Assessment.
- 2. Approve the Environmental Management Plan.
- 3. Issue an Environmental Clearance for the proposed construction and operation of a lodge in the Hobatere Roadside Concession, Kunene Region and for the following "listed activities":

#### TOURISM DEVELOPMENT ACTIVITIES

6. The construction of resorts, lodges, hotels or other tourism and hospitality facilities.

#### **OTHER ACTIVITIES**

11.2 Construction of cemeteries, camping, leisure and recreation sites.

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# LIST OF ABBREVIATIONS

CAN	Central Area of Namibia
CITW	Children in the Wilderness
COC	Concession Operator Contract
CSR	Corporate Social Responsibility
DAC	Damaraland Adventure Camp
DMC	Destination Management Company
EC	Environmental Clearance
ECO	Environment Control Officer
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ENP	Etosha National Park
HCC	Head Concession Contract
HRC	Hobatere Roadside Concession
I&APs	Interested and Affected Parties
IRDNC	Integrated Rural Development and Nature Conservation
MEFT	Ministry of Environment, Forestry and Tourism
NCAA	Namibia Civil Aviation Authority
SQM	Square Meters
SRT	Save the Rhino Trust

### **1. INTRODUCTION**

The Proponent, Namib Wilderness Safaris (Pty) Ltd t/a Wilderness Namibia, appointed Green Earth Environmental Consultants to conduct an Environmental Impact Assessment and develop an Environmental Management Plan to obtain an Environmental Clearance for the proposed construction and operation of a lodge in the Hobatere Roadside Concession, Kunene Region.

The Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) stipulates that an Environmental Impact Assessment (EIA) report and management plan is required as the following 'Listed Activities' are involved:

#### TOURISM DEVELOPMENT ACTIVITIES

*6.* The construction of resorts, lodges, hotels or other tourism and hospitality facilities.

#### OTHER ACTIVITIES

11.2 Construction of cemeteries, camping, leisure and recreation sites.

The Environmental Impact Assessment below contains information on the proposed project and the surrounding areas, the proposed activities, the applicable legislation to the study conducted, the methodology that was followed, the public consultation that was conducted, and the receiving environment's sensitivity and any potential ecological, environmental, and social impacts.

# 2. TERMS OF REFERENCE

To be able to continue with the project, an Environmental Impact Assessment and Environmental Clearance is required. For this environmental impact exercise, Green Earth Environmental Consultants followed the terms of reference as stipulated under the Environmental Management Act.

The aim of the environmental impact assessment was:

- To ascertain existing environmental conditions on the site to determine its environmental sensitivity.
- To inform I&APs and relevant authorities of the details of the proposed development and to provide them with an opportunity to raise issues and concerns.
- To assess the significance of issues and concerns raised.
- To compile a report detailing all identified issues and possible impacts, stipulating the way forward and identify specialist investigations required.
- To outline management guidelines in an Environmental Management Plan (EMP) to minimize and/or mitigate potentially negative impacts.
- To comply with Namibia's Environmental Management Act (2007) and its regulations (2012).

The tasks that were undertaken for the Environmental Impact Assessment included the evaluation of the following: climate, water (hydrology), vegetation, geology, soils, socio economic impact, cultural heritage, groundwater, sedimentation, erosion, biodiversity, sense of place, socio-economic environment, health, safety and traffic.

The EIA and EMP from the assessment will be submitted to the Environmental Commissioner for consideration. The Environmental Clearance will only be obtained (from the DEA) once the EIA and EMP has been examined and approved for the listed activity.

The public consultation process as per the guidelines of the Act has been followed. The methods that were used to assess the environmental issues and alternatives included the collection of data on the project site and surrounding area, info obtained from the proponent and the Ministry of Environment, Forestry and Tourism and identified and affected stakeholders. Consequences of impacts were determined in five categories: nature of impact, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity.

All other permits, licenses or certificates that are further on required for the operation of the proposed project still needs to be applied for by the proponent.

# 3. NEED, DESIRABILITY AND MOTIVATION

It is believed that there is a need and desirability for the Lodge.

The **<u>need</u>** is motivated as follows:

Tourism is one of the important sources of income for Namibia and the creation and operation of facilities are important to support the sector. The proposed lodge in the Hobatere Roadside Concession, Kunene Region will be located approximately 8km west of the Etosha National Park. The entrance to the lodge will be directly to the west of the Galton Gate which is the western entrance to the Park. Main Road C35 which links Ruacana and Opuwo with Kamanjab and the rest of Namibia is a very popular and busy road for tourists as well as businesspeople traveling to the north especially those visiting the Etosha National Park, the Damaraland and Kaokoland Wilderness Area.

The Proponent, Wilderness Safaris, is a well-established local and regional tourist operator, with access to an extensive database of clients and agents who are keen to visit Namibia. Their key source markets are from the USA, Canada, Western Europe and to a lesser extent Asia, Eastern Europe and South America with a preference for the high end of the tourism market which includes upmarket amenities and treatment and a unique holiday experience. Their guests usually travel on a circuit of itineraries which includes Etosha and thus the proposed lodge will fit in perfectly into this circuit. Wilderness Namibia's 'high end' lodges have high occupancy rates and it is expected that the proposed lodge will also do well.

In the western Etosha there are two (2) existing lodges, Dolomite Camp (NWR) and Hobatere Lodge (privately owned). The high-end lodge to be constructed and operated

by the Proponent will not compete for the market of these established Lodges. The western side of Etosha is also popular amongst the high-end tourism markets as it is not as overcrowded as the areas surrounding Okakuejo, Halali and Namatoni. The establishment of this lodge will attract new visitors to the area and into Etosha and will boost the visibility of the area. The need of the proposed lodge is confirmed by the above.

The **<u>desirability</u>** is motivated as follows:

The site is desirable for the establishment of the lodge. It is located in the Hobatere Concession area which has been set aside by the Namibian Government for tourism and to allow the local community to also share in the benefits of the Namibian Tourism Sector. The natural environment is ideally suited for tourism activities due to the nature of the vegetation as well as sustainable sources of underground water sources. The site has good and safe access.

The lodge will create employment in the rural area where employment is scarce. Skills will be transferred to unskilled workers as they will be trained to work in the tourism industry. The natural resources (vegetation and game) will be protected and used as a renewable recourse to the benefit of the community, owners, workers and general economy of Namibia.

The site has been visited and it can be confirmed that it is desirable for the establishment of the proposed project.

Determining what the impact of the operations would be are broken down into different categories and environmental aspects and dealt with in the Environmental Management Plan (EMP). As per the ISO 14001 definition: *an environmental aspect is an element of an organization's activities, products and/or services that can interact with the environment to cause an environmental impact e.g., land degradation or land deterioration among others, that will cause harm to the environment.* 

All concerns and potential impacts raised during the public participation process and consultative meetings were evaluated. Predictions were made with respect to their magnitude and an assessment of their significance was made according to the following criteria:

The Nature of the activity: The possible impacts that may occur are that water will be used in the construction and operational phases, wastewater will be produced that will be handled, land will be used for the proposed activities, a sewage system will be constructed, and general construction activities will take place, namely the building of infrastructure.

The Probability of the impacts to occur: The probability of the above-named impacts to occur and have a negative or harmful impact on the environment and the community is small since the Environmental Management Plan will also guide these activities. Water will still be used, and wastewater produced, however guidelines will be set that will ensure the impact is minimum.

The Extent of area that the project will affect: The specific project will most likely only have a small impact on the proposed project site itself and not on the surrounding or neighbouring land except for noise, traffic, roads, electricity and dust and there may be a visual impact. Therefore, the extent that the project will have a negative impact on is not extensive.

The Duration of the project: The duration of the project is uncertain. Water will still be used, and waste produced on a continuous basis and the structures that were constructed will remain and may be visually unpleasing to surroundings.

The Intensity of the project: The intensity of the project is mostly limited to the site however for the above-named items/processes where the intensity of the project will be felt outside the borders of the project site.

According to the information that was present while conducting the Environmental Impact Assessment for the construction and operation of the project, no high-risk impacts were identified and therefore it is believed that the operations will be feasible in the short and long run. Most of the impacts identified were characterized as being of a low impact on the receiving and surrounding environment and with mitigation measures followed, the impacts will be of minimum significance or avoided.

# 4. BACKGROUND INFORMATION ON PROJECT

# 4.1.CONCESSION OPERATOR CONTRACT (COC)

The Government of Namibia granted the head concession of the Hobatere Roadside Concession (HRC) to the Ehi-Rovipuka Conservancy (the Concessionaire). Namib Wilderness Safaris (Pty) Ltd, the Proponent, concluded a Concession Operator Contract (COC) with the Concessionaire with Ministry of Environment, Forestry and Tourism's (MEFT) approval. The concession contract / agreement is valid for 25 years. See copy of the COC attached.

Wilderness Group was established 40 years ago and has a Namibian presence of 35 years. Wilderness Namibia operates seven up-market lodges / camps and is involved in joint ventures with five Conservancies.

# 4.2.THE PROPOSED PROJECT

Wilderness Safaris' main aim is to, through conservation, uses tourism to create jobs, uplift the community and promote the conservation of the valuable natural resources of the receiving environment of the area. The project's aim is to empower the Ehi-Rovipuka Conservancy to raise funds for conservation efforts while creating employment and skill development opportunities for community members.

Under the COC, the Proponent will upgrade the Hobatere Roadside Campsite and hand over the developed campsite and its fixed and movable assets to the Ehi-Rovipuka Conservancy to operate the campsite for their own benefit.

In addition to the above, Wilderness intends to establish a high-end lodge and staff village promoting tourism and visibility of the area. The lodge will have 10 rooms (7 twins and 3 family rooms) and a swimming pool, a wildlife viewing hide, a separate research centre and staff accommodation for  $\pm 38$  staff.

The lodge activities will include game drives, nature walks, wellness activities, visiting a wildlife hide inside the roadside concession and will conduct activities inside the Etosha National Park. Permission was granted by the MEFT to build a hide in Etosha National Park at Miernes. A private access will be developed to access this facility. The design of the hide will be done in accordance with the standards of the MEFT and safety and toilet facilities will be included in the infrastructure to be build.

It is the intention to start building the infrastructure of the lodge in September 2024 and to open the lodge in 2025.

# **4.3.SITE AND PROJECT INFORMATION**

# 4.3.1.LOCALITY OF THE SITE

The proposed lodge will be located in the Hobatere Roadside Concession (HRC), Kunene Region on ridge overlooking the Otjivisandu/Mudorib river. See below *Maps* showing the locality of the site:



Figure 1: Locality of Hobatere Concession Area



Figure 2: Hobatere Concession Farm Layout



Figure 3: Location where the Wilderness Lodge will be located

### 4.3.2. SITE VEGETATION AND TOPOGRAPHY

The site lies just beyond the westernmost periphery of the Cuvelai Basin, a vast landlocked drainage system that covers much of southern Angola and northern Namibia and culminates in Etosha Pan. The fringes of the Namibian escarpment, which extends as a jagged edge along the length of the country, rise as rugged ridges across and around the site and create the western rim of the Cuvelai Basin. The hills are interspersed with large plains of yellow grass and mopane savannah in a picturesque landscape of tranquillity. The ephemeral watercourses of passing through the site drains rainwater to the west and quickly grow into impressive rivers – which remain rivers of sand for most of the year and only carry water for short periods. The Otjivisandu/Mudorib tributaries from the Hoanib River.

The highest peaks in Ehi-Rovipuka reach close to 1,500 metres above sea level, while the surrounding plains lie at around 1,200 metres.

The lodge site is surrounded by low hilly areas overlooking the river. The lodge will be constructed on this hilly area. See below photos showing the site's vegetation and topography:





Figure 4: Vegetation on the project site and surroundings

# 4.3.3.LODGE DESIGN AND CONSTRUCTION

The design and construction of the lodge and supporting infrastructure will comply with Wilderness' strict development guidelines to ensure that the development blends in with the natural environment and landscape preserving the area's sense of place. The Proponent appointed Migs and Drew Architects to design the lodge and supporting infrastructure. The lodge and guest rooms will be placed strategically around the site and utilize natural products from the area, aligned with the ambiance of the natural environment with raised walkways for safety.

See below the site unitization plan as proposed by the Architects:



Figure 5: Migs and Drew Architects Site utilisation plan



*Figure 6: Migs and Drew Architects Site utilisation plan (zoomed)* 

WILDERNESS SAFARI'S PROPOSED LODGE - HOBATERE CONCESSION, ETOSHA				
migs + drew ARCHITECTS - concept design materiality				
This document is based on initial high only. No final designs have been com	level concept design ideas and is intended for use with the EIA submission pleted, but our design is likely to include the following:			
The Accommodation will consist of:	<ul> <li>7 Guest Units about 80m<sup>2</sup> with a sitting area.</li> <li>1 Guest Unit to be slightly bigger with a second en-suite room (small bathroom)</li> <li>1 Luxury Villa that has a private plunge pool.</li> <li>All suites to have HVAC.</li> <li>Raised walkways between Main Area and Suites 1.5m above natural ground level.</li> <li>A minimum of 30m between the suites.</li> </ul>			
The Main Area will consist of:	<ul> <li>Dining, lounge, bar, pool, kitchen, short term stores &amp; office.</li> <li>Small hide at the camp waterhole.</li> <li>Dining boma.</li> <li>Small spa for massages, etc.</li> </ul>			
Back of House to include:	<ul> <li>1 Lodge Manager suite</li> <li>1 Tour leader / private guide suite</li> <li>Further 36 staff in staff village (2/4 bedroom units)</li> <li>Ablution facilities</li> <li>Laundry</li> <li>Bulk Stores</li> <li>Office</li> <li>Canteen</li> <li>Recreational room</li> <li>Water tanks – plumbed to main area and suites</li> <li>PV array and battery storage for entire camp</li> </ul>			
Aesthetic, Look and feel:	<ul> <li>In keeping with the natural environment of the area.</li> <li>Modest and considered architectural design.</li> <li>Rooted in location.</li> <li>Potentially partially buried in the landscape to reduce the visual impact of the structures.</li> </ul>			
Materiality:	<ul> <li>Use of natural stone from the site for cladding and construction.</li> <li>Concrete and brick structures.</li> <li>Aluminum and glass sliding doors and windows.</li> <li>Timber decking and walkways</li> </ul>			
Roof typology + finish:	<ul> <li>Flat concrete roofs to reduce the visual impact of the buildings.</li> <li>Either planted with indigenous plants or covered with local stone etc.</li> </ul>			

Figure 7: Details of project obtained from Migs and Drew Architects

The proposed lodge facilities will be as follows:

#### **Guest facilities**

The lodge will include 8 rooms (18 beds) which includes a family room.

The main area will include:

- A swimming pool and spa
- Curio shop
- Wildlife viewing area
- Kitchen and restaurant area
- Research centre
- Office
- Storerooms

Typical materials to be used for the construction of the guest facilities:

- The structures will be on a raised platform with wooden decking of floating concrete floors.
- Materials to be used include tananlith wooden poles, thatch grass, wooden/composite wooden decking, canvas, aluminium / wooden window and doors, cement and concrete, steel, thatched roofs, tiles, glass and mosquito netting.
- The room development will include a shade patio and modern appliances like air conditioners and mini bar fridges.

The rooms and main area will be connected via wooden walkways.

#### The staff facilities

A staff village which will include the following facilities will be constructed:

- Management, pilot and guide housing
- Junior staff housing
- Staff kitchen, laundry and staff canteen
- Entertainment area
- Shared ablution facilities junior staff
- The village will be fenced in for the safety of the staff

Typical materials to be used for the construction of the staff facilities:

- Zink roofs, ceiling boards and isolation materials, canvas, talanith poles, shutter boards, wooden beams, shade netting, concrete, mosquito gauze, glass and steel, wire steel poles, and diamond mesh and barbed wire.
- Alternatively prefabricated polystyrene-filled panels with an Alu-zinc exterior on steel frames with wooden and Linoleum/tile floors with glass windows and zinc roof will be used for the construction of the staff housing.

#### Vehicle/guest parking area

Guests will not be allowed to drive to the lodge. A separate parking area for guests visiting the lodge will be created close to the main road from where they will be collected and driven to the lodge with specially prepared game drive *GREEN EARTH Environmental Consultants* 23

vehicles by staff of the lodge. The parking will be shaded and will have guard facilities.

#### Workshop and back-of-house facilities

- A workshop for vehicles and lodge maintenance will be developed.
- All chemicals, gas and fuel will be stored in an appropriately designed storage facilities.
- Fuel storage facilities of 3 X 2200L tanks on stands to be placed in a bunded area for the refuelling of vehicles.
- A wash bay with functional oil traps to wash vehicles.
- Staff will be trained to deal with oil spills and to set up soil treatment area in case of an oil spill.
- Used oil will be collected in sealed drums, stored in a bunded area, to be removed from site and disposed of at approved municipal site.
- The workshop and back of house facilities will be constructed from the same materials as the staff quarters.

See below architectural impression of the proposed workshop and back of house facilities:

3.3	Workshop and back-of-house areas.
3.3.1	Wilderness will develop a workshop area back of house for vehicle and lodge facilities maintenance. All chemicals, gas and fuel will be stored in appropriately designed storage
	facilities back of house.
3.3.2	Fuel storage is typically done in 3 x 2200L tanks on stands located in a bunded area and
	refuelling of vehicles takes place over an impermeable base.
3.3.3	Wilderness will construct a suitable vehicles wash bay and a functional oil trap to wash vehicles.
3.3.4	Wilderness will conduct training with staff for oil/fuel spills and set up a soil treatment area in
	case of such emergencies.

3.3.5 Used oil will get stored in sealed drums over an impermeable base and removed from the site when full.



Figure 8: Concept drawing fuel tank and vehicle wash bay with a sand oil trap



Figure 9: Concept drawing of a workshop and used oil storage

# 5. WILDLIFE WATER POINTS

It is the intension to develop two wildlife water points on the concession area. These water points will be focal areas for game drives.

The one water point will be developed in the lodge area, to be visible from the lodge, at S 19.283219° E 14.426180°. A second water point will be developed in the vicinity of the main borehole at S 19.279678° E 14.452598°.

2 X 10 000L water tanks, enclosed by a wall to prevent damage by large animals will be installed at these water points to provide backup water. The waterhole design will be as such as to blend in with the surrounding natural environment.

See photo below for the proposed locality of the waterholes:



Figure 10: Waterhole and borehole locations

# 6. ACTIVITIES TO BE OFFERED AT THE LODGE

The proposed Lodge will offer the following services and activities:

Activities in the concession area:

- High-end full board services including meals, refreshments, cocktail and bar services, a gift shop and wellness offering at the spa.
- Guided nature-based activities including the following:
  - Appropriately trained, qualified and experienced guides will be used.
  - Game drives will be offered in five (5) suitably converted game drive vehicles.
  - o Guided nature walks.
  - A partial undergoing/photographic hide (viewing points about 50cm above ground) will be constructed near the water hole to allow safe close up game viewing. The hide will be designed and constructed to blend in with the environment with comfortable seating.
  - The viability of cultural or village visits will be investigated in cooperation with the Ehi-Rovipuka Conservancy.



Figure 11: Track development plan

Activities outside of the concession area:

- Exclusive excursions will be offered to Wilderness guests, guided by Wilderness guides and transported in specially developed game drive vehicles, into the Etosha National Park.
- Wilderness obtained conditional approval to develop a private access gate into the Etosha National Park at coordinates S 19.274630° E 14.466590° as is indicated in Paragraph 3.4 of the amended head concession agreement. The gate will be developed in such a manner as to prevent access for other parties and the MEFT will be provided with a key to use the gate for their management purposes.
- Only guests on guided Wilderness Safari vehicles will be allowed to use this gate.
- Guests undertaking activities into Etosha under their own arrangements must make use of the Galton Gate for access.
- Under the Head Concession Agreement, provision is made for use of existing tracks and the development of additional tracks in the Renostervlei and Miernes area for exclusive use by Wilderness Guests. Wilderness is in negotiations with the MEFT for the upgrading of the facilities in this area to include a more naturallooking water point, hide and supporting infrastructure. The upgrade of the infrastructure as well as additions will be done with the approval and guidance of the MEFT.
- The standard fees as applicable for day visitors will be paid over to the MEFT.



Figure 12: Etosha track development plan

# 7. BULK SERVICES AND INFRASTRUCTURE

The proposed lodge facility will require the following services:

### 7.1.ACCESS

The project site / Concession area will be accessed from the existing access from Road C35. A new road will have to be built from this existing road to provide access to access the new lodge site. Other (game viewing) roads in the Concession area will still be discussed with the Conservancy. There is an existing airstrip in the Hobatere North Concession which may be accessed and used and which might need an access road from the airstrip to the camp. See below *Map* indicating the roads:



Figure 13: Roads that is connecting the lodge

The existing concession entry road is in green and the yellow roads would be proposed game drive roads that will be built at some stage. The yellow road meeting the green road at a "T" is the proposed entrance road off the existing concession road. The purple line is the concession border line between Hobatere Roadside Concession and Hobatere North Concession. The following details was obtained from the Proponent:

#### **Road Access**

- 9.6. Wilderness will develop a suitable entry point for self-drive guests.
- 9.7. Wilderness will create a 2 x 4 parking area for travellers with smaller vehicles.

#### 9. Access and aerodrome

Guests visiting the lodge will travel via air and or road. In general, Wilderness operates a charter air service and other flying operators will bring in the majority of guests.

Flying access

- 9.1. Wilderness will invest in upgrading the runway located at S 19.323866° E 14.374542° in the Hobatere North concession to current NCAA standards.
- 9.2. The access via air is an essential part of guest movements for Wilderness.
- 9.3. The access to the runway is provided in the HCC Annexure 3 point 2. A. V.
- 9.4. Wilderness will place the requisite crash and safety equipment on site.
- 9.5. Wilderness will engage with Hobatere North's concessionaire to create a track from the Eastern end of the runway to the road to avoid excessive traffic passing by Hobatere lodge.

#### 12. Hobatere roadside campsite access and rights

- 12.1. The campsite area its access road and the developed area must be carved out from the Concession Operator Contract.
- 12.2. The Conservancy and Wilderness agree that the campsite area will not have access to activities and tracks inside the HRC.
- 12.3. The publicly accessible track to Hobatere lodge and the Kamdesha gate from the C35 remains open to the public.
- 12.4. The Wilderness and EC further agree that guests and visitors to the campsite will not have any rights to the exclusive traversing area inside Etosha National Park or the exclusive access gate.
- 12.5. Visitors to the campsite will have access to the campsite grounds and the viewing platform overlooking the waterhole.
- 12.6. Visitors to the campsite can access the ENP via the Galton gate and access the publicly accessible roads in ENP subject to the park rules.

To reduce their footprint as much as possible on this site, a dedicated parking area for drive-in guests from which they will be collected and driven into the camp will be created. Food delivery will follow the same principal with no food trucks being allowed to enter but products to be collected and driven into the camp from the same dedicated parking and deliveries area.

### 7.2.WATER SUPPLY / REQUIREMENTS

Water for the lodge operations will be obtained from groundwater, to be extracted via two existing boreholes on the site. Water will be used sparingly in the construction and operational phase.

The water from the boreholes on site will go through a RO Plant / Aqua system in order to reach drinking standards. The preferred water treatment system that are used currently is a Met Aqua system from incoming source to tank as well as a R/O system with dispenser for drinking water in the lodge.

The following details on water was obtained from the proponent:

6. Water provision		
6.1.	Wilderness completed pump tests on two existing boreholes in July 2022. The main water supply will come from a borehole located at S 19.275018° E 14.454218° the sustainable yield tested at this borehole was 9 cubic metres per hour.	
6.2.	This borehole is approximately 3.4 km from the proposed site.	
6.3.	An underground pipeline will bring water from the borehole to the site.	
6.4.	Wilderness will use a three-phase solar pump to supply water to the camp.	
6.5.	Water storage will be done using 4 x 10 000L water tanks. Wilderness will build a wall around the outside of the water tanks to prevent damage from elephants.	
6.6.	The backup borehole is located at S 19.274774° E 14.437757° this is low-yield borehole only providing around 0.5 cubes per hour.	
6.7.	The chemical analysis of the water is very good and tested as Type A, very safe for human consumption.	

# 7.3. ELECTRICITY

The extraction of water from the boreholes, operation of the lodge facilities as well as supporting infrastructure will require electricity / power. The electricity requirements for the site will be provided from the installation of an onsite PV (solar installation) Plant with storage facilities.

Cables will be below ground / underground. There will be battery backup and a silent generator in case of power failure. The PV Plant will be a minimum of 500kV. The plant will be separate and not mounted on the roofs of the lodge infrastructure. A private contractor will be appointed to manage the PV Plant.

See below details on the electricity provision obtained from the proponent:

A silent backup diesel generator will be installed at the back of house area to provide electricity in case of additional power is required.

<sup>5.</sup> Electricity
Wilderness will investigate the power options with two viable alternatives.
A solar plant located in the workshop area with batteries for storage. (Most likely)
Wilderness uses experienced electrical engineering companies and installers using the latest proven technology.
Connecting to the Nampower line on the main road via an underground cable.
Wilderness will fit a suitable silenced backup generator that will run in case of emergencies only.



Figure 14: PV Solar array example

# 7.4. SEWAGE (HOUSEHOLD AND KITCHEN) DISPOSAL

Household sewer will be generated from people employed on the site and from guest visiting the lodge.

A Septic Tank system combined with Herringbone soakaways will be installed. The waste generated from the activities on the site will be collected and pumped into a septic tank system whereafter it will be treated via a Clarius Fusion Water Treatment Facility (or similar facility) to special standard before it will be dispersed into the herringbone network for leaching into the ground. The herringbone soak-away will be installed away from the river banks to ensure that the treated water does not seep into the river system and that it is taken up by the trees and other vegetation. This system will be installed at least 3 km away from the borehole to be used for the extraction of potable water to provide for the activities at the lodge.

The following wastewater details was obtained from the proponent:

#### 8. Wastewater

8.1. A sewerage system will be developed to treat wastewater before disposing thereof the most likely option is a modern sewerage treatment plant.

- 8.2. Kitchens are fitted with a suitable grease trap before the water enters the sewerage system. There are a variety of options available and development will take place after consultations with suppliers.
- 8.3. The most like option would be Clarus fusion wastewater treatment plant.
- 8.4. Wilderness will also consider using use large volume dual chambered septic tanks as used in most current operations.
- 8.5. The outgoing water will be released into underground soak-away systems.
- 8.6. Wilderness will investigate a greywater system to potentially reuse greywater and reduce over water usage.
- 8.7. Wilderness will investigate the option of a greywater reclamation plant.



Figure 15: Clarus fusion design drawing



Figure 16: Concept drawing for a herringbone soak-away system

# 7.5. STORM WATER AND DRAINAGE

No permanent infrastructure should be erected in areas subject to a 1:50year flood risk. The site's exposure to flood risk will be determined to ensure that the infrastructure is safeguarded from damage from seasonal flooding.

The design of the lodge will include provision for storm water infrastructure to accommodate storm water received from adjacent areas through natural surface drainage. Appropriate storm water infrastructure will be constructed to prevent any damage to the site or adjacent areas.

### 7.6.SOLID WASTE

The solid waste generated on the site will be collected by the proponent and be disposed of at an approved landfill site. Hazardous Waste which might be generated on the site will be dealt with in accordance with the required procedures for hazardous waste.

The management of solid waste will be dealt with as follows: All waste will be separated into paper / plastics, glass and tins. This will be done in well maintained and marked bins and cleared weekly. There will be a burn cage situated about 3km from camp where all paper will be burnt. All plastics, glass and tins will be sent off site for disposal at municipal dumps. All suitable perishables will be collected separately and removed daily by conservancy members to be used as pig feed.

The solid waste generated from the activities on the site will be managed in the following way:

#### 4. Waste management

- 4.1 Wilderness will set up a fenced-in waste management area, this will include a burn pit and waste storage cage.
- 4.2 Wilderness will set up a sealed organic waste pit for the kitchen's organics waste or seek a viable alternative for example a pig farmer in the close vicinity.
- 4.3 Wilderness will remove all waste from the site.
- 4.4 Materials suitable for recycling will be removed to Windhoek for processing.
- 4.5 The remainder of the waste is disposed of at a waste processing facility.



Figure 17: Concept drawing for solid waste storage and an incinerator

# 7.7.FIRE PROTECTION

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. A specialist Fire Protection Specialist will be contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure. The following details was obtained from Wilderness Safari's:

There should be a fire station at three main locations:

- The maintenance yard or workshop area,
- Close to the main area or camp office,
- The staff village.

Each fire station must have a minimum of:

- three buckets of sand (this needs regular replacing due to hardening of sand),
- an axe,
- a spade,
- three rakes,
- three portable fire extinguishers, and
- six fire beaters.

### 8. RUNWAY INSPECTION DETAILS

The following information was obtained from Wilderness Safari's:

The Hobatere runway inspection occurred on 10 October 2022 by Johan Fourie and Gerhard Thirion. The location of the runway is S19 19' 23" E14 22' 28". The runway itself is in good condition with slight damage around 1.1 km from Western end. The surface is in a good overall condition. The total length of the runway is 1600m and its 14.5 – 15m broad. There is a mountain ridge approximately 180 - 200m North of the runway running alongside it. There is a ridge toward runway 06 about 1km away from where the threshold would be. Trees around 300 - 400m from a future threshold on runway 24. See below *Map* of the runway:



Figure 18: Runway Map

There is presently no crash equipment in place. Wilderness will need to construct a fire shed and stock it with equipment. There is no firefighting equipment at present.

Apron and aircraft stands: at runway 06 there is an old shed / barn and a concrete block with enough space for one aircraft. There is also an area around runway 24's end large enough for an Apron. No cable / to tie and aircraft down is present.

Currently there are no ablution or other facilities available for guests. Developing suitable guest facilities is important going forward.

There are currently just turning circles with no demarcation. To bear higher loads of traffic, concrete turn pads is advisable and turning circles should be clearly defined.

Threshold and runway edge markers: There are no threshold and runway edge markers. Thresholds can be set 200m from either end of the runway leaving 1200m of the runway with a 200m threshold on either end. Runway edge markers are required every 100m along the runway edges.

The runway surface is in an excellent condition overall, one rough area would need some work about 500m from runway 24 or 1.1km from runway 06, the remainder of the runway is in great condition. The runway shoulders should be graded to clear grass.

The runway strip will require work. There are trees at around 20m from the centre line. Levelling the erosion ditch on the northern side of the runway along most of its length is important presently because this can cause damage if an aircraft runs of the runway. The southern side of the runway should be graded up to the tree line.

The tree line varies but at about 20m from the centre line larger trees occur, and grass on the shoulders. The erosion ditch on the norther side should be levelled and the shoulder should be graded to remove grasses.
Visual navigation aids: a new windsock should be placed at the runway and the demarcation signs around it should be made. The runway name and runway designator markers on each runway should be added. The windsock should be replaced and the area should be clearly demarcated.

# 9. APPROACH TO THE STUDY

The assessment included the following activities:

a) Desktop sensitivity assessment

Literature, legislation and guidance documents related to the natural environment and land use activities available on the portion and area in general were reviewed to determine potential environmental issues and concerns.

b) Site assessment (site visit)

The proposed project site and the immediate surrounding area were assessed through several site visits to investigate the environmental parameters on site to enable further understanding of the potential impacts on site. The final site visit took place on 16 March 2024.

c) public participation

The public was invited to give input, comments and opinions regarding the proposed project. Notices was placed in the Namibian and New Era Newspapers on two consecutive weeks (7 and 14 March 2024) inviting public participation and comments on the proposed project (see attached). A notice was also displayed on the site (see attached). The final date for receiving comments was 28 March 2024. A public meeting was held on 8 February 2024. See attached a copy of the Attendance Register showing the names of the people who attended the meeting.

d) Scoping

Based on the desk top study, site visit and public participation, the environmental impacts were determined in five categories: nature of project, expected duration of impact, geographical extent of the event, probability of occurring and the expected intensity. The findings of the scoping have been incorporated in the environmental impact assessment report below.

#### e) Environmental Management Plan (EMP)

To minimize the impact on the environment, mitigation measures have been identified to be implemented during planning, construction, and implementation. These measures have been included in the Environmental Management Plan to guide the planning, construction and operation of the development which can also be used by the relevant authorities to ensure that the project is planned, developed, and operated with the minimum impact on the environment.

# **10. ASSUMPTIONS AND LIMITATIONS**

It is assumed that the information provided by the proponent (Namib Wilderness Safaris (Pty) Ltd t/a Wilderness Namibia), project managers and architect is accurate. No alternative portions/sites for the proposed project were examined. The site was visited several times and any happenings after this are not mentioned in this report. (The assessment was based on the prevailing environmental conditions and not on future happenings on the site.) However, it is assumed that there will be no significant changes to the proposed project, and the environment will not adversely be affected between the compilation of the assessment and the implementation of the proposed activities.

# 11. ADMINISTRATIVE, LEGAL AND POLICY REQUIREMENTS

To protect the environment and achieve sustainable development, all projects, plans, programs and policies deemed to have adverse impacts on the environment require an EIA according to Namibian legislation. The administrative, legal and policy requirements to be considered during the Environmental Assessment for the proposed project are the following:

- The Namibian Constitution
- The Environmental Management Act (No. 7 of 2007)
- Other Laws, Acts, Regulations and Policies

#### THE NAMIBIAN CONSTITUTION

Article 95 of Namibia's constitution provides that:

"The State shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the following:

Management of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future; in particular, the Government shall provide measures against the dumping or recycling of foreign nuclear and toxic waste on Namibian territory." This article recommends that a relatively high level of environmental protection is called for in respect of pollution control and waste management.

Article 144 of the Namibian Constitution deals with environmental law and it states:

"Unless otherwise provided by this Constitution or Act of Parliament, the general rules of public international agreements binding upon Namibia under this Constitution shall form part of the law of Namibia". This article incorporates international law, if it conforms to the Constitution, automatically as "law of the land". These include international

agreements, conventions, protocols, covenants, charters, statutes, acts, declarations, concords, exchanges of notes, agreed minutes, memoranda of understanding, and agreements (Ruppel & Ruppel-Schlichting, 2013). It is therefore important that the international agreements and conventions are considered (see section 4.9).

In considering these environmental rights, Namib Wilderness Safaris (Pty) Ltd t/a Wilderness Namibia (the Proponent) should consider the following in devising an action plan in response to these articles:

- Implement a "zero-harm" policy at that would guide decisions.
- Ensure that no management practice or decision result in the degradation of future natural resources.
- Take a decision on how this part of the Constitution will be implemented as part of the Proponent's Environmental Control System (ECS).

#### **CONCLUSION AND IMPACT**

The proposed activity is in line with the Namibian Constitution as it will actively promote and maintain the welfare of the people and a zero-harm policy will be followed to minimise any negative impacts on the receiving environment.

#### ENVIRONMENTAL MANAGEMENT ACT (NO. 7 OF 2007)

The Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012) of the Environmental Management Act (No. 7 of 2007) that came into effect in 2012 requires/recommends that an Environmental Impact Assessment and an Environmental Management Plan (EMP) be conducted for the following listed activities to obtain an Environmental Clearance Certificate:

#### TOURISM DEVELOPMENT ACTIVITIES

6. The construction of resorts, lodges, hotels or other tourism and hospitality facilities.

#### OTHER ACTIVITIES

11.2 Construction of cemeteries, camping, leisure and recreation sites.

Cumulative impacts associated with the development must be included as well as public consultation. The Act further requires all major industries and mines to prepare waste management plans and present these to the local authorities for approval.

The Act, Regulations, Procedures and Guidelines have integrated the following sustainability principles. These need to be given due consideration, particularly to achieve proper waste management and pollution control:

#### Cradle to Grave Responsibility

This principle provides that those who handle or manufacture potentially harmful products must be liable for their safe production, use and disposal and that those who initiate potentially polluting activities must be liable for their commissioning, operation and decommissioning.

#### **Precautionary Principle**

It provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach must be adopted.

#### The Polluter Pays Principle

A person who generates waste or causes pollution must, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

#### Public Participation and Access to Information

In the context of environmental management, citizens must have access to information and the right to participate in decisions making.

#### **CONCLUSION AND IMPACT**

The proposed activity will fit in with the surrounding land use activities and not have a negative impact on the prevailing environment.

#### **OTHER LAWS, ACTS, REGULATIONS AND POLICIES**

The laws, acts, regulations, and policies listed below have also been considered during the Environmental Assessment.

	Laws, Acts, Regulations & Policie	s consulted:
Electricity Act	In accordance with the Electricity	The Proponent must abide to
(No. 4 of 2007)	Act (No. 4 of 2007) which provides	the Electricity Act.
	for the establishment of the	
	Electricity Control Board and	
	provide for its powers and	
	functions; to provide for the	
	requirements and conditions for	
	obtaining licenses for the provision	
	of electricity; to provide for the	
	powers and obligations of licenses;	
	and to provide for incidental	
	matters: the necessary permits and	

Table 1: Laws. Acts, Regulations and Policies

	licenses will be obtained.						
Pollution	The Pollution Control and Waste	The Proponent must adhere to					
Control and	Management Bill is currently in	the Pollution Control and					
Waste	preparation and is therefore	Waste Management Bill.					
Management	included as a guideline only. Of						
Bill (guideline	reference to the mining, Parts 2, 7						
only)	and 8 apply. Part 2 provides that						
	no person shall discharge or cause						
	to be discharged, any pollutant to						
	the air from a process except						
	under and in accordance with the						
	provisions of an air pollution						
	license issued under section 23.						
	Part 2 also further provides for						
	procedures to be followed in						
	license application, fees to be paid						
	and required terms of conditions						
	for air pollution licenses. Part /						
	states that any person who sells,						
	stores, transports or uses any						
	nazardous substances of products						
	containing nazaroous substances						
	all notity the competent						
	section (2) of the presence and						
	quantity of those substances. The						
	competent authority for the						
	purposes of section 74 shall						
	maintain a register of substances						
	notified in accordance with that						
	section and the register shall be						
	maintained in accordance with the						
	provisions. Part 8 provides for						
	emergency preparedness by the						
	person handling hazardous						
	substances, through emergency						
	response plans.						
Water	The Water Resources	The Act must be consulted.					
Resources	Management Act (No. 11 of 2013)	Fresh water abstraction and					
Management	stipulates conditions that ensure	waste-water discharge permits					
Act	effluent that is produced to be of a	should be obtained when					
	certain standard. There should	required. The actual water					
	also be controls on the disposal of	usage will be recorded and					
	sewage, the purification of effluent,	reported to the MAWLR.					
	measures should be taken to						
	ensure the prevention of surface						
	water resources should be used in						
	and groundwater pollution and water resources should be used in						

	a sustainable manner.				
Solid and	Provides for management and	The Proponent must abide to			
Hazardous	handling of industrial, business and	the solid waste management			
Waste	domestic waste.	provisions.			
Management					
Regulations:					
Local					
Authorities					
1992					
Hazardous	The <b>Ordinance</b> applies to the	The Proponent must abide to			
Substances	manufacture, sale, use, disposal	the Ordinance's provisions.			
Ordinance	and dumping of hazardous	·			
(No. 14 of	substances, as well as their import				
1974)	and export and is administered by				
,	the Minister of Health and Social				
	Welfare Its primary purpose is to				
	prevent hazardous substances				
	from causing injury ill-health or the				
	death of human beings				
Atmospheric	Part 2 of the <b>Ordinance</b> governs	The proponent should adhere			
Pollution	the control of novious or offensive	to the stipulations of the			
Prevention	dases The Ordinance prohibits	Atmospheric Pollution			
Ordinance of	anyono from carrying on a	Provention Ordinance			
Namibia (No	schodulod process without a	Trevention Ordinance.			
11 of 1076)	registration cortificate in a				
11011970)	registration certificate in a				
	controlled area. The registration				
	certificate must be issued in it can				
	be demonstrated that the best				
	for proventing or reducing the				
	for preventing or reducing the				
	escape into the atmosphere of				
	noxious or offensive gases				
	produced by the scheduled				
Mature	process.	The survey and survey and			
Concernation	Ordinance (No. 4 of 1075) covers	implementation is not leasted			
Conservation	Ordinance (No. 4 of 1975) covers	implementation is not located			
Ordinance	game parks and nature reserves,	In a demarcated conservation			
	ine nunting and protection of wid	area, national park or unique			
	animais, problem animais, fish and	environments.			
	Ministry of Environment Forest				
	willistry of Environment, Forestry				
	and Iourism (MEFI) administer it				
	and provides for the establishment				
	of the Nature Conservation Board.				
Forestry Act	The Forestry Act (No. 12 of 2001)	No removal of protected tree			
	specifies that there be a general	species or removal of mature			
	protection of the receiving and	trees should happen. The			
	surrounding environment. The	Ministry of Environment,			

	protection of natural vegetation is	Forestry and Tourism should		
	of great importance, the Forestry	be consulted when required.		
	Act especially stipulates that no			
	living tree bush shrub or			
	indigenous plants within 100m from			
	any river stream or watereautrea			
	any liver, stream of watercourse,			
	may be removed without the			
	necessary license.			
Labour Act	The Labour Act (No. 11 of 2007)	The proponent and contractor		
	contains regulations relating to the	should adhere to the Labour		
	Health, Safety and Welfare of	Act.		
	employees at work. These			
	regulations are prescribed for			
	among others safety relating to			
	hazardous substances, exposure			
	limits and physical hazards.			
	Regulations relating to the Health			
	and Safety of Employees at Work			
	are promulgated in terms of the			
	Labour Act 6 of 1992 (GN156.			
	GG1617 of 1 August 1997).			
Communal	Communal land is land that	Consent should be obtained		
Land Rights	belongs to the State and is held in	from Traditional Authorities		
gg	trust for the benefit of the	Communal Boards Chiefs		
	traditional communities living in	Kings Queens etc. if required		
	those areas Communal land			
	cannot be bought or sold but one			
	can be given a customary land			
	right or right of lossohold to a part			
	of communal land in cocordance			
	of communal land in accordance			
	with the provisions of the			
	Communal Land Reform Act			
	(No. 5 of 2002) and Communal			
	Land Reform Amendment Act			
	(No. 13 of 2013). The Communal			
	Land Reform Act provide for the			
	allocation of rights in respect of			
	communal land to establish			
	Communal Land Boards to provide			
	for the powers of Chiefs and			
	Iraditional Authorities and boards			
	in relation to communal land and to			
	make provision for incidental			
	matters. Consent and access to			
	land for the proposed project			
	should be requested from the			
	relevant traditional authority			
	through the Regional Council and			

	Regional Communal Land Boards.			
Traditional	The Traditional Authorities Act	Traditional Authorities should		
Authorities	(No. 17 of 1995) provide for the	be consulted when required.		
Act (No. 17 of	establishment of traditional			
1995)	authorities, the designation and			
	recognition of traditional leaders; to			
	define their functions, duties and			
	powers; and to provide for matters			
	incidental thereto.			
Public and	The Public and Environmental	The proponent and contractor		
Environmental	Health Act (No. 1 of 2015) provides	should adhere to the Public		
Health Act	with respect to matters of public	and Environmental Health Act.		
	health in Namibia. The objects of			
	this Act are to: (a) promote public			
	health and wellbeing; (b) prevent			
	injuries, diseases and disabilities;			
	(c) protect individuals and			
	communities from public health			
	risks; (d) encourage community			
	participation in order to create a			
	healthy environment; and (e)			
	provide for early detection of			
	diseases and public health risks.	THE NEW YORK OF THE		
	All protected heritage resources	The National Heritage Council		
Heritage Act	discovered need to be reported	should be consulted when		
(110. 27 01	Heritage Council (NHC) and	required.		
2004)	require a permit from the NHC			
	before it may be relocated. This			
	should be applied from the NHC			
National	No person shall destroy damage	The proposed site for		
Monuments	excavate. alter. remove from its	development is not within any		
Act of	original site or export from	known monument site both		
Namibia (No.	Namibia:	movable or immovable as		
28 of 1969) as	(a) any meteorite or fossil; or	specified in the Act, however		
amended until	(b) any drawing or painting on	in such an instance that any		
1979	stone or a petroglyph known or	material or sites or archeologic		
	commonly believed to have been	importance are identified, it		
	executed by any people who	will be the responsibility of the		
	inhabited or visited Namibia before	developer to take the required		
	the year 1900 AD; or	route and notify the relevant		
	(c) any implement, ornament or	commission.		
	structure known or commonly			
	believed to have been used as a			
	mace, used or erected by people			
	referred to in paragraph; or			
	(d) the anthropological or			
	archaeological contents of graves,			

Public Health Act (No. 36 of 1919)	caves, rock shelters, middens, shell mounds or other sites used by such people; or (e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section. Under this act, in section 119: "No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health."	The proponent will ensure that all legal requirements of the project in relation to protection of the health of their employees and surrounding residents is protected and will be included in the EMP. Relevant protective equipment shall be provided for employees in construction. The development shall follow requirements and specifications in relation to water supply and sewerage handling and solid waste management so as not to threaten public health of future residents on this piece of land
Soil Conservation Act (No. 76 of 1969)	The objectives of this Act are to: Make provisions for the combating and prevention of soil erosion; Promote the conservation, protection and improvement of the soil, vegetation, sources and	Only the area required for the operations should be cleared from vegetation to ensure the minimum impact on the soil through clearance for construction.
Air Quality Act	The Air Quality Act (No. 39 of	The proponent and contractor
(N0. 39 of 2004)	<b>2004)</b> intends to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto.	should adhere to the Air Quality Act.
Vision 2030	Namibia's overall development	The proposed project is an
and National Development	ambitions are articulated in the Nation's Vision 2030. At the	Important element in employment creation.
Plans	operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National	

Planning Commission in the Office	
of the President. Currently the	
Government has so far launched a	
4th NDP which pursues three	
overarching goals for the Namibian	
nation: high and sustained	
economic growth; increased	
income equality; and employment	
creation.	

#### CONCLUSION AND IMPACT

It is believed the above administrative, legal and policy requirements which guide and governs development will be followed and complied with in the planning, implementation and operations of the activity.

A flowchart indicating the entire EIA process is shown in the Figure below.



Figure 19: Flowchart of the Impact Process

# **12. AFFECTED RECEIVING ENVIRONMENT**

## **12.1. BIODIVERSITY AND VEGETATION**

The area forms part of the Tree and Shrub Savannah Biome (specifically the Highland Savannah). The project site is showing evidence of some human interference and informal tracks can be observed on the site. See *Map* below showing the biomes:



Figure 20: Biomes in Namibia (Atlas of Namibia, 2002)

Only the necessary plants/vegetation will be removed for the construction activities. The natural characteristics of the project site namely the vegetation clearance and the destruction of habitats is expected to further on have a low impact on the environment before the mitigation measures are taken and after the mitigation measures are taken, the impact will be very low.

No animal migration routes were observed through the site although there is evidence that it is occasionally visited by larger game from the presence of scattered game droppings. The site must therefore be fenced in order to protect infrastructure game damage.

#### CONCLUSION AND IMPACT

The activities will have a low impact on vegetation, shrubs and trees. It will have a low impact on the movement of game if it will be fenced to protect infrastructure from damage.

# 12.2. GEOLOGY AND SOILS

The Project Area is located in the Khomas Trough on a geological area classified as Damara Supergroup and Gariep Complex. See *Map* below showing the geology:



Figure 21: Geology of Namibia (Atlas of Namibia Project, 2002)

The Khomas Trough was formed during sedimentation of the Late Proterozoic Damara Sequence. The basin that was filled by a thick sequence, now preserved as metagreywackes and pelites of the Kuiseb Formation, which were subsequently multiply deformed and thrusted during the Damaran Orogeny. Minor lithologies included are graphite schists, calc-silicates and scapolite schists (*Grunert, 2003*).

The project site is generally even with some higher areas at places. Natural slopes are seen near natural drainage courses on the project site. The soil is suitable for development however the soil is also erodible and should not be cleared unnecessarily from vegetation if not required for the placement of buildings or roads. Unnecessary clearing of soil will lead to erosion (*Grunert, 2003*).

#### **CONCLUSION AND IMPACT**

The activities will not impact on the geology, soils and geohydrology of the area. The surface drainage canals will be kept open in order that water can flow through.

# **12.3. SOCIO ECONOMIC ENVIRONMENT**

The majority of land uses around the project site are characterized by residential, tourism and farming activities; therefore, the lodge development will not have a negative impact on the social environment.

The activities and the development will have a positive impact on the socio-economic environment. Positive impacts associated with the project will be in the form of additional job opportunities during construction as well as in operation. The community will also benefit from skills and technology transfer. The spending power of locals is likely to increase because of employment during the construction and operational phase.

Employment will be provided during the construction time and during operations at the lodge. Local people especially from the community and the concession area will first be considered for jobs. Training and staff development will also be provided.

Job title	Staff members
Area manager (Shared role in Wilderness portfolio) – (this role is already in existence)	1
Lodge General manager	1
Assistant managers	3
Guides	5
Chefs	5
Scullery (Helps with cooking staff meals as well)	2
Staff chef	1
Service staff (Waitresses and Barman)	6
Housekeepers	6
Mechanic	1
Maintenance and airstrip attendants	5
Spa therapists	2
Total staff complement	38

Table 2: Staff structure and breakdown

The following information is on Wilderness Safari's social responsibility:

- Community (especially the Ehi-Rovipuka conservancy) engagement is a main priority for Wilderness Safari's.
- Wilderness Safari's will educate and empower the community.
- The goal is to establish and maintain sound, equitable, beneficial partnerships with the community.
- Children will be educated on sustainable development, leadership development and to care for their natural heritage.

#### CONCLUSION AND IMPACT

The activities will have a positive impact on the community since employment will be created.

#### 12.4. CLIMATE

In broad terms, the climate can be described as semi-arid, with summer rainfalls and highest temperatures occurring during October and February. Maximum temperatures recorded in the area vary just under 40 degrees Celsius with an average annual

temperature of 18 - 20 degrees Celsius (Weather - the Climate in Namibia, 1998 – 2012).

Rainfall in the form of thunderstorms is experienced in the area during the summer months between October and April. It is further characterised by relatively high average mean annual rainfall of 520mm in comparison to 250mm for the entire country. Over 70% of the rainfall occurs in the period between November and March with mean annual gross evaporation of 2600-2800mm (*Weather - the Climate in Namibia*, 1998 – 2012).



Figure 22: Average temperatures (Atlas of Namibia Project, 2002)

#### CONCLUSION AND IMPACT

The activities will not have an impact on the climate.

## **12.5. CULTURAL HERITAGE**

The proposed project site is not known to have any historical significance prior to or after Independence in 1990. The specific area does not have any National Monuments and the specific site has no record of any cultural or historical importance or on-site resemblance of any nature. No graveyard or related article was found on the site however there are graveyards close to the site and these graves should be protected.

#### CONCLUSION AND IMPACT

The activities will not have an impact on the cultural heritage of the site.

# 13. IMPACT ASSESSMENT AND EVALUATION

The Environmental Impact Assessment sets out potential positive and negative environmental impacts associated with the proposed project site. The following assessment methodology will be used to examine each impact identified:

Criteria	Rating (Severity)		
Impact Type	+	Positive	
	0	No Impact	
	-	Negative	
Significance of impact being either	L	Low (Little or no impact)	
Ŭ	М	Medium (Manageable impacts)	
	н	High (Adverse impact)	

Table 3: Impact Evaluation Criterion (DEAT 2006)

Probability:	Duration:		
5 – Definite/don't know	5 - Permanent		
4 – Highly probable	4 – Long-term (impact ceases)		
3 – Medium probability	3 – Medium term (5 – 15 years)		
2 – Low probability	2 – Short-term (0 – 5 years)		
1 – Improbable	1 - Immediate		
0 - None			
Scale:	Magnitude:		
Scale: 5 – International	Magnitude: 10 – Very high/don't know		
Scale: 5 – International 4 – National	Magnitude: 10 – Very high/don't know 8 - High		
Scale: 5 – International 4 – National 3 – Regional	Magnitude: 10 – Very high/don't know 8 - High 6 - Moderate		
Scale: 5 – International 4 – National 3 – Regional 2 – Local	Magnitude: 10 – Very high/don't know 8 - High 6 - Moderate 4 - Low		
Scale: 5 – International 4 – National 3 – Regional 2 – Local 1 – Site only	Magnitude: 10 – Very high/don't know 8 - High 6 - Moderate 4 - Low 2 - Minor		

The impacts on the receiving environment are discussed in the paragraphs below:

# **13.1. IMPACTS DURING THE CONSTRUCTION ACTIVITY**

Some of the impacts that the project / lodge will have on the environment includes water will be used for the construction and operation activities, electricity will be used, a sewer system will be constructed and wastewater will be produced on the site that will have to be handled.

## 13.1.1. WATER USAGE

Water is a scarce resource in Namibia and therefore water usage should be monitored and limited in order to prevent unnecessary wastage. The proposed project will make use of water in its construction phase and operations.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
	,					Unmitigated	Mitigated
Water	-	2	2	4	2	L	L

#### 13.1.2. ECOLOGICAL IMPACTS

The proposed infrastructure will be constructed in a natural area which is covered with vegetation. Special care should be taken to limit the destruction or damage of the vegetation. However, impacts on fauna and flora are expected to be minimal. Disturbance of areas outside the designated working zone is not allowed.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-	1	2	4	2	L	L

## 13.1.3. DUST POLLUTION AND AIR QUALITY

Dust generated during the transportation of building materials; construction and installation of bulk services, and problems thereof are expected to be low and site specific. Dust is expected to be worse during the winter months when strong winds occur. Release of various particulates from the site during the construction phase and exhaust fumes from vehicles and machinery related to the construction of bulk services are also expected to take place. Dust is regarded as a nuisance as it reduces visibility,

affects the human health and retards plant growth. It is recommended that regular dust suppression be included in the construction activities, when dust becomes an issue.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
	71-					Unmitigated	Mitigated
Dust & Air Quality	-	2	2	2	2	М	L

#### 13.1.4. NOISE IMPACT

An increase of ambient noise levels at the proposed site is expected due to the construction activities. Noise pollution due to heavy-duty equipment and machinery might be generated. It is not expected that the noise generated during construction will impact any third parties due to the distance of the neighbouring activities. Ensure all mufflers on vehicles are in full operational order; and any audio equipment should not be played at levels considered intrusive by others. The construction staff should be equipped with ear protection equipment.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
	71-					Unmitigated	Mitigated
Noise	-	2	1	4	2	М	L

# 13.1.5. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and general public are of great importance. Workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). A health and safety officer should be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the workplace.

Safety issues could arise from the earthmoving equipment and tools that will be used on site during the construction phase. This increases the possibility of injuries and the contractor must ensure that all staff members are made aware of the potential risks of injuries on site. The presence of equipment lying around on site may also encourage criminal activities (theft).

Sensitize operators of earthmoving equipment and tools to switch off engines of vehicles or machinery not being used. The contractor is advised to ensure that the team is equipped with first aid kits and that these are available on site, at all times. Workers should be equipped with adequate personal protective gear and properly trained in first aid and safety awareness. No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises. Proper barricading and/or fencing around the site especially trenches for pipes and drains should be erected to avoid entrance of animals and/or unauthorized persons. Safety regulatory signs should be placed at strategic locations to ensure awareness. Adequate lighting within and around the construction locations should be erected, when visibility becomes an issue.

Impact evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signi	licance
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	М	L

## 13.1.6. CONTAMINATION OF GROUNDWATER

Care must be taken to avoid contamination of soil and groundwater. Use drip trays when doing maintenance on machinery. Maintenance should be done on dedicated areas with linings or concrete flooring. The risk can be lowered further through proper training of staff. All spills must be cleaned up immediately. Excavations should be backfilled and sealed with appropriate material, if it is not to be used further.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
	21					Unmitigated	Mitigated
Groundwater	-	2	2	2	2	М	L

## 13.1.7. SEDIMENTATION AND EROSION

The area is mostly covered by vegetation. The vegetation is stabilizing the area against wind and water erosion. Vegetation clearance and creation of impermeable surfaces could result in erosion in areas across the proposed area. The clearance of vegetation will further reduce the capacity of the land surface to slow down the flow of surface water, thus decreasing infiltration, and increasing both the quantity and velocity of surface water runoff. The proposed construction activities will increase the number of impermeable surfaces and therefore decrease the amount of groundwater infiltration. As a result, the amount of storm water during rainfall events could increase. If proper storm water management measures are not implemented this will impact negatively on the water courses close to the site.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	cance
						Unmitigated	Mitigated
Erosion and Sedimentation	-	1	2	4	2	М	L

#### 13.1.8. GENERATION OF WASTE

This can be in a form of rubble, cement bags, pipe and electrical wire cuttings. The waste should be gathered and stored in enclosed containers to prevent it from being blown away by the wind. Contaminated soil due to oil leakages, lubricants and grease from the construction equipment and machinery may also be generated during the construction phase.

The oil leakages, lubricants and grease must be addressed. Contaminated soil must be removed and disposed of at a hazardous waste landfill. The contractor must provide containers on-site, to store any hazardous waste produced. Regular inspection and housekeeping procedure monitoring should be maintained by the contractor.

The Proponent intends to appoint and contract specialist waste managers to collect and dispose of the waste generated on the site. The proponent must ensure that the subcontractors complied with the applicable Namibian Legislation, Policies and Practices.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
	71-					Unmitigated	Mitigated
Waste	-	1	2	4	2	М	L

#### 13.1.9. CONTAMINATION OF SURFACE WATER

Contamination of surface water might occur through oil leakages, lubricants and grease from the equipment and machinery during the installation, construction and maintenance of bulk services at the site. Oil spills may form a film on water surfaces in the nearby streams causing physical damage to water-borne organisms.

Machinery should not be serviced at the construction site to avoid spills. All spills should be cleaned up as soon as possible. Hydrocarbon contaminated clothing or equipment should not be washed within 25m of any surface water body.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Surface water	-	2	2	4	3	М	L

# 13.1.10. TRAFFIC AND ROAD SAFETY

All drivers of delivery vehicles and construction machinery should have the necessary driver's licenses and documents to operate these machines. Speed limit warning signs must be erected to minimise accidents. Heavy-duty vehicles and machinery must be tagged with reflective signs or tapes to maximize visibility and avoid accidents.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Traffic	-	2	2	4	3	М	L

# 13.1.11. FIRES AND EXPLOSIONS

There should be sufficient water available for firefighting purposes. Ensure that all firefighting devices are in good working order and are serviced. All personnel have to be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. It is advised that a specialist Fire Protection Specialist is contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Fires and Explosions	-	2	2	4	2	М	L

# 13.1.12. SENSE OF PLACE

The placement, design and construction of the proposed project should be as such as to have the least possible impact on the natural environment. The proposed activities will not have a large/negative impact on the sense of place in the area since it will be

constructed in a manner that will not affect the neighbouring portions and it will not be visually unpleasing.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Nuisance Pollution	-	1	1	2	2	L	L

# **13.2. IMPACTS DURING THE OPERATIONAL PHASE**

# 13.2.1. ECOLOGICAL IMPACTS

Staff and visitors should only make use of walkways and existing roads to minimise the impact on vegetation. No firewood may be collected on the site. Minimise the area of disturbance by restricting movement to the designated working areas during maintenance and drives.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Ecology Impacts	-	1	2	4	2	L	L

# 13.2.2. DUST POLLUTION AND AIR QUALITY

Vehicles transporting goods and staff will contribute to the release of hydrocarbon vapours, carbon monoxide and sulphur oxides into the air. Possible release of sewer odour, due to sewer system failure of maintenance might also occur. All maintenance of bulk services and infrastructure at the project site has to be designed to enable environmental protection.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust & Air Quality	-	2	2	4	4	М	L

#### 13.2.3. CONTAMINATION OF GROUNDWATER

Spillages might also occur during maintenance of the sewer system. This could have impacts on groundwater especially in cases of large sewer spills. Proper containment should be used in cases of sewerage system maintenance to avoid any possible leakages. Oil and chemical spillages may have a heath impact on groundwater users. Potential impact on the natural environment from possible polluted groundwater also exits.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater contamination	-	2	2	4	2	L	L

## 13.2.4. GENERATION OF WASTE

Household waste from the activities at the site and from the staff working at the site will be generated. This waste will be collected, sorted to be recycled and stored in on site for transportation and disposal at an approved landfill site.

The Proponent intends to appoint and contract specialist waste managers to collect and dispose of the waste generated on the site. The proponent must ensure that the subcontractors complied with the applicable Namibian Legislation, Policies and Practices.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Waste Generation	-	1	2	2	2	М	L

## 13.2.5. FAILURE IN RETICULATION PIPELINES

There may be a potential release of sewage, stormwater or water into the environment due to pipeline/system failure. As a result, the spillage could be released into the environment and could potentially be health hazard to surface and groundwater. Proper reticulation pipelines and drainage systems should be installed. Regular bulk services infrastructure and system inspection should be conducted. Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Failure of Reticulation Pipeline	-	1	1	4	2	М	L

#### 13.2.6. FIRES AND EXPLOSIONS

Food will be prepared on gas fired stoves. There should be sufficient water available for firefighting purposes. Ensure that all fire-fighting devices are in good working order and are serviced. All personnel have to be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site. Regular inspections should be carried out to inspect and test firefighting equipment by the contractor.

The Proponent will put in the necessary fire protection infrastructure / extinguishers as per requirements. It is advised that a specialist Fire Protection Specialist is contracted to introduce a proper fire protection plan with the required infrastructure and to oversee the annual auditing and maintenance of the infrastructure.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Signific	ance
						Unmitigated	Mitigated
Fires and Explosions	-	2	1	4	2	М	L

## 13.2.7. HEALTH, SAFETY AND SECURITY

The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Personal Protective Equipment). Workers should be warned not to approach or chase any wild animals occurring on the site. No open flames, smoking or any potential sources of ignition should be allowed at the project location. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significa	ance
						Unmitigated	Mitigated
Safety & Security	-	1	2	4	2	М	L

### **13.3. CUMULATIVE IMPACTS**

These are impacts on the environment, which results from the incremental impacts of the construction and operation of the proposed project when added to other past, present, and reasonably foreseeable future actions regardless of what person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In relation to an activity, it means the impact of an activity that in it may not become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertakings in the area.

Possible cumulative impacts associated with the proposed project include sewer damages/maintenance, vegetation and animal disturbance, uncontrolled traffic and destruction of the natural environment. These impacts could become significant especially if it is not properly supervised and controlled. This could collectively impact on the environmental conditions in the area. Cumulative impacts could occur in both the operational and the construction phase.

Impact Evaluation

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cumulative Impacts	-	1	3	4	3	L	L

#### 14. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) provides management options to ensure impacts of the proposed construction and operation are minimised. An EMP is an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the operations are prevented, and the positive benefits of the projects are enhanced.

The objectives of the EMP are:

- ✓ to include all components of the proposed project.
- ✓ to prescribe the best practicable control methods to lessen the environmental impacts associated with the project.
- ✓ to monitor and audit the performance of the project personnel in applying such controls.
- ✓ to ensure that appropriate environmental training is provided to responsible project personnel.

The EMP acts as a document that can be used during the various phases of the proposed project. The contractor as well as the management and staff should be made aware of the contents of the EMP. See *Appendix* for EMP.

#### 15. CONCLUSION

The EIA has been completed in line with the requirements of the Environmental Management Act, 2007 and Regulations and it is concluded and recommended that the specific site identified namely Hobatere Roadside Concession, Kunene Region, has the full potential to be used for the proposed lodge activities. The identified environmental and social impacts can be minimized and managed through implementing preventative measures and sound management systems. It is recommended that the environmental performance be monitored regularly to ensure compliance and that corrective measures be taken if necessary.

In general, the construction and operation of the proposed project would pose limited environmental risks, provided that the EMP for the activity is used properly. The EMP should be used as an onsite tool during the construction and operation of the project. Parties responsible for non-conformances of the EMP should be held responsible for any rehabilitation that has to be undertaken. After assessing all information available on this project, Green Earth Environmental Consultants are of the opinion that the proposed project site is suitable for the proposed activities. The accompanying EMP will focus on mitigation measures that will remediate or eradicate the negative or adverse impacts.

## 16. **RECOMMENDATION**

It is therefore recommended that the Ministry of Environment, Forestry and Tourism through the Environmental Commissioner support and approve the Environmental Clearance for the proposed construction and operation of a lodge in the Hobatere Roadside Concession, Kunene Region and to issue an Environmental Clearance for the following 'Listed Activities':

#### TOURISM DEVELOPMENT ACTIVITIES

6. The construction of resorts, lodges, hotels or other tourism and hospitality facilities.

#### **OTHER ACTIVITIES**

11.2 Construction of cemeteries, camping, leisure and recreation sites.

#### LIST OF REFERENCES

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#### APPENDIX A: NEWSPAPER NOTICES



#### THE NAMIBIAN THURSDAY 7 MARCH 2024 17 lassifieds namibian Tel: +264-61-279 632 / 279 646 • Fax: +264-61-22 9206 • email: classifieds@namibian.com.na DEADLINE: 12H00 - 2 WORKING DAYS PRIOR TO PLACEMENT INDEX / Notice Other • Legal. Legal. The use Periods A and B signature Characterization of the three periods and three periods • Vehicles for Sale • • Legal • • Legal • • Legal • · Legal · 1210 Anniversaries 1220 Weddings Announcements 1230 Bintiday Wishes 1240 Resistons 1250 Graduations 1260 Special Messages 1270 Thank You Messag 1280 Valentine's Messag Opportunities • 00 YOU URCENTLY NEED CASHT GH up to 75% of your vehicles due in 45 met Justa car Vooo-lash when you need & Admath 351 451 455 CLACO2400000283 Division) notice of his or her intertion to delend and serve tilt's legal practitioner, which notice must give an address or poste restante) referred to in rule 14(30) for the service on the defendant of all notices to the defendant of all notices on the defendant of all notices of the defendant of all notices es to have further pleadings served on him or her by way of deteronic means, such notice of defence. 2 Simulta-neously with the delivery of the notice of intertion to de-liver the return in terms of rule (64), which contains the fol-liver the return in the case of defendant: 'laj in the case of a natural person, his or her full names, identify number where available and if a Na-mibian citizen or any other full names, identify number address of where available address of other (b) in the case of a close corporation, rumber, postal address and registered officio referred to in section 25 of the Close Cor-la's referred to in paragraph (a) of at least one mimber or officer as 1988) and the particulars referred to in PROE CLACOMODOCEB3 NEED CASH? Bing you cir and ve gile you 55% of 5 Kive. No other chommit medided 25 30% intest rive? involts. Cartact IR/2011fram rive?involts.Cartact IR/2011fram rive?involts.cartact IR/2011fram SALVAGE VEH Date: 13 MARCH 2024 Auction 10h00 tegistration: 7-13 March 2024 Refundable Deposit N\$ 10 000.00 CASH Business & Finance CLA0240000 1410 Opportunities 1420 Business for Sale 1430 Taxi Licences Place 391 Platnu Prosperita um St. Services • Wanted • 7420 House & Garden 1810 General 7440 Communications & Security 7450 Lot & Missing 7460 Transport Wanted & Offered ERICLES ON AUCTION 29-year-old lady looking for domestic work for 3 days in a week only in Windhoek. 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For any further information please call. (061) 228 901 3210 Food & Beverages Sind is your application assumption to a checkles Work privated spectra dustational applications set provid strumments to the internet Resource Man- service and the service of the service of the service infill Arrange 68:228.017 County Date: Applications must reach as by the VMB Coly structure application countred with the must be application CLAX094400005030 Goods 3610 Wanted 3630 For Sale 3700 Auctions Auctioneer Renando Burger - 081 147 7480 Health & Beauty 3910 Health & Beauty Website www.pro-ex.com.na CLA02ettent# Hospitality 4010 Hospitality (See also Travel & Tourism) • Offered • NOW HRINS FOR UKUSA CANADA NURSES/CAREGNERS/SOCIAL INORKERS Cal - 771 187/9554 - 771549/1753 (WhatAsp) Web www.careemail-stright.can • Legal • Housing & Property GIPF CALL FOR PUBLIC PAR-TIGIPATION/COMMENTS ENVIRONMENTAL IMPAOL ROMMENTAL IMPAOL ROMMENTAL IMPAOL ROMMENTAL MANAGE MENT PLAN TO OBTAIN AN ENVIRONMENTAL CLEARANCE FOR THE RE-ZONING OF PORTION A THE REMAINDER OF POR-TION 7 (ARBEIDSKROON) OF THE FRAM OKAHAND-JA TOWNLANDS NO. 277 FROM "UNDETERMINED' TO TOTOLEDAL 30 B CAM BE USED FOR A CATTLE ABATTOIR Green Earth Envi-rormental Consultants have been appointed to attend to and complete an Environ-ment Pain (EMP) to obtain an Environmental Clearance Certificate as per the require-ment Pain (EMP) to obtain an Environmental Clearance Certificate as per the require-ment Pain (EMP) to obtain an Environmental Clearance Certificate as per the require-ment Pain (EMP) to obtain an Environmental Clearance Certificate as per the require-ment Pain (Chemistic) To the Event Act No. 7 of 2007) and the Environmental tions (GN 30 in GG 4/86 of 6 Fotion 363 of the Remainder of Portion 7 (Theopla) Town-timed' to Special' and to ob-tain consent to use Portions of a cattle abattor on a portion of the From Orbital Town-timed' to 2007. 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Flora Thatsway CLAC/230005559 serce of Africa Guestinose Flora served the GIPF family as a committed Records Administrator in our Operations Departm Travel & Tourism LLACK20000558 Eserce / Kita Bachas, Source Sel Ruan Dar, Nochopk A. Works, D.Y. Min, An andion, and Jashing Frei Kita D. Jana: Establishi Hindia C. C. ACR4000111 Sing Jack In Kitali. Danis Inn Kitali. Danis Inn Kitali. Danis Inn Kitali. Sang Jack Inn Kitali. Danis Inn Kitali. Sang Jack Inn Kitali. Bacis Inn Kitali. C. ACR40000552 Our hearts go out to Flora's family, linends, and all those who had the privilege of knowing her. We hope you find strength in unity and the support you need to overcome this challenging time. 7800 Travel & Tourism Flora's impact in her work and life will never be forgotten Rates and Deadlines • For Rent • Nonasdal 27: 2 Settoon shall house 167,000 p/m, votar included. Call SI/ISESIND / BirlSI/IDEI for DISCLAIMER





#### APPENDIX B: NOTICE ON SITE



#### APPENDIX C: HOBATERE CONCESSION OPERATOR CONTRACT

	CONCESSION OPERATOR CONTRACT
	For the
	HOBATERE ROADSIDE CONCESSION AND
	TRAVERSING ACTIVITIES
	in
	ETOSHA NATIONAL PARK
	Between
	Ehirovipuka Conservancy
herein repre	esented by Mr. S. Muzuma in the capacity as Chairperson and duly authorized to do so by the Conservancy
	(The Concessionaire)
	And
	Namib Wilderness Safaris t/a Wilderness Namibia
herein repre	sented by Ms. A. Margull in her capacity as director and duly authorized thereto to enter this agreement
	(The Operator)
	(hereinafter referred to as "the Parties")

IN THE WITNESS WHEREOF, the undersigned representatives, being duly authorised thereto by their respective institution, have signed this contract in duplicate in English.

Execution on behalf of the Concessionaire:

SIGNED AT Wind Ho EKON 081 OVEMBER ...... 2023.

One

For and on behalf of THE CONCESSIONAIRE

WITNESS

who warrants their authority hereto

Execution on behalf of the Operator:

SIGNED AT WINDHOST ON OS HOUENBER 2023.

WITNESS

For and on behalf of THE OPERATOR

who warrants their authority hereto

#### APPENDIX D: CONTRACT / AGREEMENT



# Annexure 3: Joint venture agreement signatures

Wilderness and the Ehi-Rovipuka conservancy agrees that the proposed joint venture agreement as indicated in the letter and proposal document is accepted by both parties for presentation to the Ministry of Environment Forestry and Tourism to draw up the joint venture agreement operators contract.

perint

SEGEREDT M. MUZUMA

Mpones

WITNESS NAME & SIGNATURE

2023 06

CHAIRPERSON EHI-ROVIPUKA CONSERVANCY

DATE:

ALEXANDRA MARGULL

CEO WILDERNESS NAMIBIA

DATE:

2023 00/04

DATE:

WITNESS NAME & SIGNATURE

2023

DATE:


To whom it may concern

I, Alexandra Margull in my capacity as CEO of Wilderness Namibia, hereby give permission to Siegfried Bandu !Aebeb, ID 770610107 in his capacity as Consultant to Wilderness Namibia, to sign on my behalf the Proposed Joint Venture Agreement between Wilderness Namibia and the Ehi – Rovipuka Conservancy pertaining to the Hobatere Roadside concession

Regards

Alexandrø Margull CEO Wilderness Namibia

	Ehi-Rovipuka Conservacy/ Community Forest	
	. 2023-04-06	C.
	P.O.BOX 192 Kamanjab Celi no: 0814347386 ehirovipuka.conservancy 2001@gmaH.com	
Namib V	/ildemess Safaris (Ptv) Ltd. Reg. No. 87/085	
	Directors: A Marcull T Knoetze	
T: *	264 61 274 500 E + 264 61 239 455	
Onr Schinz & Merensky St	reet, Windhoek, Namibia. P.O. Box 6850, Windh	oek, Namibia
w	www.ildernessdestinations.com	

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### WILDERNESS

# Document Register – Proposed Joint venture agreement between Wilderness and the Ehi-Rovipuka conservancy.

This register is kept to record the movement of documents between the stakeholders.

Document	Copies	Recipient	Recipient	Date
		Name	signature	
Final Joint venture proposal	1	Etti-Rasipuki Conserviney	9	
Supporting letter for the joint venture proposal	1	Sti-Rovipulla Conservation	· ·	Cyl
Final Joint venture proposal	1	WWF	ma	Egerver Egerve
Supporting letter for the joint venture proposal	1	WINF	11 Con	0.00112 - 0.0012 - 0.00112 - 0.00112 - 0.00112 - 0.00112 - 0.00112 - 0.00112
Final Joint venture proposal	1	Instalennass Vanizin		hi-Rov
Supporting letter for the joint venture proposal	1	Millerness Nom Bin	MI.	
Electronic copy of the documents	1	EAI-ROVI PULCA Consider Unica		

The Namib Lodge Company (Pty) Ltd. Reg. No. 95/332 Directors: A Margull, D De La Harpe, K Awarab E: info@wilderness.com.na T: + 264 61 274 500; \* F: + 264 61 239 455 Cnr Schinz & Merensky Street, Windhoek, Namibia. PO. Box 6850, Windhoek, Namibia

www.wildernessdestinations.com

# **APPENDIX E: ATTENDANCE REGISTER**

- 15h00 - Wildern	less offices	
Nature of Interest/ Impact:	Contact Details (phone number and email address):	Signature:
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EIA MEETANE	0812438743 com gerhardt@wildernes destinations, com	à A=
EAP	L	m
Green Earth	canen @greenearth	#
	- 15400 - Wildern Nature of Interest/ Impact: EIA- first MeRton EIA Matrane EAA Green Earth	- 15400 - Wilderness OFAces Nature of Interest/ Impact: ELA- Method EIA- Method EIA- Method Contact Details (phone number and email address): Od1 1457221 Linder Guilderss): ELA- Method Green Earth Carier & greenearth

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# APPENDIX F: MEETING HELD 24 FEBRUARY PHOTOS





## APPENDIX G: MINUTES OF MEETINGS

м	nutes of the first Joint Management Committee of the Hobatere Roadside Concession held on 8 February 2024 at the Ehirovipuka Conservancy office.
1.	Welcome and opening
	Fabiola Katamila (FK) from MEFT welcomed everybody and opened the meeting.
2.	Attendance and apologies
	The attendance register was signed by all present (see attached).
3.	Introductions
	The meeting participants introduced themselves.
4.	Establishment of Joint Management Committee (JMC)
	It was resolved that the JMC will comprise one member each from MEFT, the concessionaire and the operator. Each JMC member can bring other people to JMC meetings if they should choose to do so.
	It was resolved that a JMC member unable to attend a scheduled meeting must nominate a alternate for that specific meeting who will act on their behalf.
	The JMC members are:
	MEFT Chief Warden Bakker Manuel, chair     Concessionnaire Siegfried Muzuma, vice-chair     Operator Hamish Hofmeyr, secretary
5	
5.	FK listed the compliance obligations.
	<ul> <li>Establish JMC by 8 February 2024: Wilderness noted that although this committee is established 3 months after signature date the effective date of the concession operator contract (COC) is the date when the compliance events are completed.</li> <li>Performance bond: Wilderness gave the original documentation to MEFT and a copy was emailed to the concessionaire.</li> </ul>
	<ul> <li>Training: Wilderness will start employment 3 months before the lodge is anticipated to be completed and training will be done on the job. A guide training course with 4 participants from the conservancy will start in the week after this meeting.</li> <li>Single purpose entity: Wilderness will have this in place before construction commences.</li> <li>Detailed design and EIA: Wilderness explained that these are compliance events. MEFT</li> </ul>
	noted that the concessionaire should help the operator to obtain the environmental clearance certificate.

- Project programme: Wilderness already completed and submitted a project programme but will do so again at the next JMC.
- Insurance: Wilderness will have this in place for construction and once lodge operations commence.
- Concession fees: Wilderness explained that in terms of the operator contract fees will start when lodge operations commence and clarified that there are no other agreements in this regard with the concessionaire.
- Employment: Wilderness explained that unskilled labour from the Conservancy will be needed during the construction and road building phase and also 3 to 6 months before lodge operations commence (refer training bullet above). Wilderness noted that they will employ a contractor to build the camp and are not directly involved in construction.
- Social plan: Wilderness provided a overview of the future plans 7 scholarships, eco club and eco gardens, participation in the annual CITW children's camp and in future a dining hall to be fully funded from donations which sourcing is already in progress.

#### 6. Any other business

A question was posed about the service station which was to be build at the campsite as part of the previous operators plan. Wilderness clarified that the area should be kept pristine and that further development was not allowed as per the documented agreement between the parties.

There was a further discussion about the campsite which is outside the remit of the JMC.

#### 7. Closing

FK thanked everybody and closed the meeting.

### **APPENDIX H: WATER SAMPLE TESTS**

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Parameter D H Electrical C Furbidity Total Disso - Alkalinity Total Alkali Total Hardn Ca-Hardnes Mg-Hardne Chloride as	conductivity lved Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> f	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A	Hu Group A 6-9 150 1 1 300 375 290 250 1.5	ecommended man consum 5.5-9.5 300 5 5 650 650 420 600 2.0	maximum li           group C           4-11           400           10           1300           1300           1000           840           1200           3.0	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0
Parameter b H Electrical C Furbidity Fotal Disso - Alkalinity Fotal Alkali Fotal Hardne Ca-Hardnee Chloride as Fluoride as Sulphate as	conductivity lved Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> f CI <sup>°</sup> F	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200	ecommended iman consum 5.5-9.5 300 5 5 650 650 420 600 2.0 600	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200	2500 2057 1500-3000 2.0-6.0 1000
Parameter > H Electrical C Furbidity Fotal Disso - Alkalinity Fotal Alkali Fotal Ardne Ag-Hardne Chloride as Fluoride as Sulphate as Nitrate as N	conductivity lived Solids (calc.) as $CaCO_3$ nity as $CaCO_3$ ness as $CaCO_3$ ss as $CaCO_3$ ss as $CaCO_3$ ss as $CaCO_3$ f F F s $SO_4^{2^2}$	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A A A A	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200 10	ecommended iman consum Group B 5.5-9.5 300 5 5 650 650 420 600 2.0 600 2.0 600 2.0	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100
Parameter H Electrical C Turbidity Total Disso P-Alkalinity Total Alkali Total	Conductivity lived Solids (calc.) as $CaCO_3$ nity as $CaCO_3$ ness as $CaCO_3$ ss as $CaCO_3$ ss as $CaCO_3$ is CI F F a $SO_4^{2^2}$	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A	Hu Group A 6-9 150 1 300 375 290 250 1.5 200 10	ecommended iman consum Group B 5.5-9.5 300 5 5 650 650 420 600 2.0 600 2.0 600 2.0	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 10
Parameter H Electrical C Furbidity Fotal Disso P-Alkalinity Fotal Alkali Total Alka	Conductivity lived Solids (calc.) as $CaCO_3$ nity as $CaCO_3$ ness as $CaCO_3$ as as $CaCO_3$ as as $CaCO_3$ as as $CaCO_3$ by a constant of the second s	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A A B B A A A A A A A B	H Group A 6-9 150 1 1 300 375 290 250 1.5 200 10 10	ecommended man consum <u>Group B</u> 5.5-9.5 300 5 650 650 420 600 2.0 600 2.0 600 2.0 400	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           800	mits Livestock watering 6000 2550 2057 1500-3000 2.0-6.0 1000 100 10 2000
Parameter - H - H - Control Control - Alkalinity - Alkalinity - Alkalinity - Total Hardr - Chloride as - Hardne - Chloride as - Sulphate as - Nitrate as N - Nitrate as N - Sodium as - Podassium	Conductivity as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> as as CaCO <sub>3</sub> a CI <sup>°</sup> F <sup>°</sup> s SO <sub>4</sub> <sup>2°</sup> Na as K	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A A A A A A A	H Group A 6-9 150 1 300 375 290 250 1.5 200 10 100 200	ecommended iman consum Group B 5.5-9.5 300 5 5 650 500 420 600 2.0 600 2.0 600 2.0 600 2.0 400 400	maximum li           Group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           840           1200           3.0           1200           40           800           800	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 10 2000
Parameter - H - H - Control Control - Alkalinity - Alkalinity - Alkalinity - Control Control - Alkali - Control Control - Alkali - Control Control - Alkali - Control - Contr	conductivity as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ess as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> cCl <sup>-</sup> F <sup>-</sup> SSO <sub>4</sub> <sup>2-</sup> N Na as K as Mg	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A A A A A A A	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200 10 10 100 200 70	ecommended iman consum Group B 5.5-9.5 300 5 5 650 650 420 600 2.0 600 2.0 600 2.0 600 2.0 400 400 400 100	maximum li           Group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           800           800           200	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 100 10 2000 500
Parameter - H - Electrical C - Furbidity - Cala Disso - Alkalinity - Cala Alkali - Cala Hardne: - Alkali - Cala Hardne: - Cala Hardn	conductivity lived Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ca Ca F F a SO <sub>4</sub> <sup>2</sup> .	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A A A A A A A	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200 10 10 100 200 70 150	ecommended man consum <u>Group B</u> 5.5-9.5 300 5 5 650 420 600 2.0 600 2.0 600 2.0 400 400 400 100 200	maximum li           Group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           800           800           200           400	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 10 2000 500 1000
Parameter - H - Electrical C - Furbidity - Total Disso - Alkalinity - Total Alkali - Total - Total - Total - Total - Total - Total - Total - Total - Total - Total -	Conductivity lived Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> ss as Mn	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68 0.01	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A A A A A A A	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200 10 10 100 200 70 150 0.05	ecommended man consum Group B 5.5-9.5 300 5 5 650 420 600 2.0 600 2.0 600 2.0 600 2.0 400 400 400 100 200 1.0	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           800           800           200           400           2.0	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 10 2000 500 1000 10
Parameter - H - H - Clectrical C - Furbidity - Cal Disso - Alkalinity - Cal Alkali - Cal - Cal Alkali - Cal - Cal Alkali - Cal - C	conductivity lived Solids (calc.) as $CaCO_3$ nity as $CaCO_3$ ness as $CaCO_3$ ss as $CaCO_3$ ss as $CaCO_3$ ss as $CaCO_3$ c Cr F F a SO $_4^{2^2}$ N Na as K n as Mg Ca a as Mn	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68 0.01 0.32	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A A B A B B	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200 10 10 100 200 70 150 0.05 0.1	ecommended man consum <u>Group B</u> 5.5-9.5 300 5 650 420 600 2.0 600 1.0 1.0 1.0 1.0	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           200           400           200           400           200           200           2.0           2.0	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 10 2000 500 10000 10 10
Parameter - H - H - Clectrical C - Furbidity - Total Disso - Alkalinity - Total Alkali - Total - Total - Total Alkali - Total Alkali - Total - Total	Conductivity lived Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> (Cl) F SoO <sub>4</sub> <sup>2-</sup> Na as K as Mg Ca as Mn 4, at 25°C	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68 0.01 0.32 7.1	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A A B B A A A A A A A A A A B B A A A B B	Hu Group A 6-9 150 1 1 300 375 290 250 1.5 200 10 10 100 200 70 150 0.05 0.1	ecommended iman consum Group B 5.5-9.5 300 5 5 650 420 600 20 400 400 20 400 400 100 200 1.0 1.0	maximum li           group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           200           400           200           400           2.0	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 100 500 500 1000 10 10 10
Parameter Parameter	Conductivity lived Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> as as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> (CI F F SO <sub>4</sub> <sup>2-</sup> Na as K as Mg Ca as Mn d, at 25°C idex	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68 0.01 0.32 7.1 0.0	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A A B B A A A A A A A A A A B A A A B B B	Hu Group A 6-9 150 1 300 375 290 250 1.5 200 10 100 200 70 150 0.05 0.1 >0=scalinc. <	ecommended iman consum <u>Group B</u> 5.5-9.5 300 5 5 650 650 600 2.0 600 5000 2.0 600 2.0 6000 2.0 6000 2.0 6000 2.0 6000 2.0 6000 2.0 6000 2.0 6000 2.0 6000 2.0000000000	maximum li           Group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           200           400           2.0           stable	mits Livestock watering 6000 2550 2057 1500-3000 2.0-6.0 1000 100 100 100 500 1000 100 1000 10
Parameter o H Electrical C Furbidity Fotal Disso 2-Alkalinity Fotal Alkalin Ca-Hardnes Mg-Hardne Chloride as Fluoride as Fluoride as Sulphate as Nitrate as N Sodium as Potassium Vagnesium Salcium as Manganese ron as Fe Stability ph angelier Ir Avznar Indy	Conductivity lived Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> as as CaCO <sub>3</sub> as as CaCO <sub>3</sub> ca cr F as SO <sub>4</sub> <sup>2-</sup> Na as K as Mg Ca as Mn d, at 25°C ndex ex	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68 0.01 0.32 7.1 0.0 7.0	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A A B B A A A B B B A A A B B B A A A B B B A A A B B B A A B	Hu Group A 6-9 150 1 300 375 290 250 1.5 200 10 10 200 70 150 0.05 0.1 >0=scaling, < <6.5=scaling, <	ecommended iman consum <u>Group B</u> 5.5-9.5 300 5 5 650 650 600 2.0 600 5.0 600 5.0 600 5.0 600 5.0 600 2.0 600 500 500 600 2.0 600 500 500 600 500 500 500 500 500 50	maximum li           Group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           200           400           200           400           2.0           2.0           stable           >6.5 and <7.5	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 100 500 1000 100 101 2000 500 1000 10 10 10 10 10 10 10 10
Parameter p H Electrical C Turbidity Total Disso P-Alkalinity Total Alkali Total Alkali Total Hardne Ca-Hardnes Mg-Hardne Chloride as Fluoride as Sulphate as Nitrate as N Sodium as Sodium as Magnesium Calcium as Manganese Iron as Fe Stability pH Langelier In Ryznar Inde Corrosivity	conductivity lived Solids (calc.) as CaCO <sub>3</sub> nity as CaCO <sub>3</sub> ness as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ss as CaCO <sub>3</sub> ca c Cr F F a SO <sub>4</sub> <sup>2-</sup> d Na as K as Mg Ca as Mn d, at 25°C dex ex ratio	Value 7.1 114.0 4.1 641 0 385 322 170 152 115 1.1 51 0.5 <0.01 132 3.3 37 68 0.01 0.32 7.1 0.0 7.0 0.6	Units mS/m NTU mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	Classification A B B A A A A A A A A A B B A A A B B A A A B B A A A B B B A A A A B B B A A A B B B B A B	Hu Group A 6-9 150 1 300 375 290 250 1.5 200 10 100 200 70 150 0.05 0.1 >0=scaling, < <6.5=scaling, < Applies to w	ecommended man consum <u>Group B</u> 5.5-9.5 300 5 650 500 420 600 2.0 600 2.0 600 2.0 600 2.0 400 400 400 1.0 1.0 0=corrosive, 0=t >7,5=corrosive, attribute of the other attribute of the set of the se	maximum li           Group C           4-11           400           10           1300           1000           840           1200           3.0           1200           40           800           800           200           400           2.0           2.0           stable           ≥6.5 and ≤7.5           pe 7-8	mits Livestock watering 6000 2500 2057 1500-3000 2.0-6.0 1000 100 100 100 500 1000 10 100 10

which also contains dissolved oxygen ratios <0.2 no corrosive properties ratios >0.2 increasing corrosive tendency

laren\_ e. I. Carew

Deputy Section Head This test report is only valid without any alterations and shall not be published or reproduced except in full, with written consent of the laboratory. Page 1 of 3

Windhoel Analytical Laboratory info@analab.com.n Tel +264 61 210 132 Cell +264 81 611 8843 71 Newcastle Stree Walvis Bay walvisbaylab@analab.com.n Cell +264 81 122 1588 OUR QUALITY IS IN THE DETAIL Unit 16, Ben Amathila Ave PO Box 86782, Windhoek, Namibia Remark: Overall classification of water, considering only constituents that have been tested for: Group B: good quality water Interpretation based on guidelines for the evaluation of drinking water for human consumption, DWA, Namibia, April 1988 and South African Water Quality Guidelines Volume 5: Agricultural water use: Livestock watering, Second Edition, 1996 For practical reasons, the guidelines are divided into four groups. The highest group assigned to any of the constituents determines the classification of the water as a whole. Group A: excellent quality water Group B: good quality water Group C: low risk water Group D: high risk or water unsuitable for human consumption Ideally water should be either Group A or Group B. If water is classified as Group C, the situation is not yet critical, but attention should be given to those constituents over the Group B limit. If however, the water is classified as Group D urgent and immediate attention is required to reduce the levels of the problem constituents in the water to suitable levels. Sample acceptance: Sample was collected in bottles provided by the laboratory. Sample was suitable for testing rew I. Carew **Deputy Section Head** This test report is only valid without any alterations and shall not be published or reproduced except in full, with written consent of the Page 2 of 3 laboratory

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Tel +264 61 210 132 Cell +264 81 611 8843 71 Newcastle Street

#### Walvis Bay:

walvisbaylab@analab.com.na Cell +264 81 122 1588 Unit 16, Ben Amathila Ave.

PO Box 86782, Windhoek, Namibia

#### TEST REPORT

To:	Namib Wilderness Safaris
	P.O.Box 6850
	MARIN Alle Alle And In

Date of sampling

Analytical Laboratory Services

2022/07/19; 11:50

OUR QUALITY IS IN THE DETAIL

	P.O.Box 6850		Date received:	20/Jul/22
	Windhoek		Date analysed:	20 - 27 July 2022
			Date reported:	27/Jul/22
Attn:	Johan Fourie		Client Reference no.:	PO-169076
e-mail:	johanf@wilderness.co	m.na	Quotation no.:	none
Tel:	081-125 1341 / 061-23	74500	Lab Reference:	1221164
			Enquiries: Ms N	/anuela Mayer
Sample det	ails	water sample		
Location of	sampling point	5		
Description	of sampling point	Hobatere 2		

Test item number	1221164/2						
				Re	ecommended	I maximum l	imits
				Hu	man consum	ption	Livestock
Parameter	Value	Units	Classification	Group A	Group B	Group C	watering
pH	7.0		А	6-9	5.5-9.5	4-11	
Electrical Conductivity	105.8	mS/m	А	150	300	400	
Turbidity	6.5	NTU	С	1	5	10	
Total Dissolved Solids (calc.)	602	mg/l					6000
P-Alkalinity as CaCO <sub>3</sub>	0	mg/l					
Total Alkalinity as CaCO <sub>3</sub>	465	mg/l					
Total Hardness as CaCO <sub>3</sub>	389	mg/l	В	300	650	1300	
Ca-Hardness as CaCO <sub>3</sub>	187	mg/l	А	375	500	1000	2500
Mg-Hardness as CaCO <sub>3</sub>	202	mg/l	А	290	420	840	2057
Chloride as Cl	48	mg/l	А	250	600	1200	1500-3000
Fluoride as F	1.2	mg/l	А	1.5	2.0	3.0	2.0-6.0
Sulphate as SO42-	48	mg/l	А	200	600	1200	1000
Nitrate as N	1.3	mg/l	А	10	20	40	100
Nitrite as N	<0.01	mg/l					10
Sodium as Na	92	mg/l	А	100	400	800	2000
Potassium as K	3.8	mg/l	А	200	400	800	
Magnesium as Mg	49	mg/l	A	70	100	200	500
Calcium as Ca	75	mg/l	A	150	200	400	1000
Manganese as Mn	0.25	mg/l	в	0.05	1.0	2.0	10
Iron as Fe	0.08	mg/l	А	0.1	1.0	2.0	10
Stability pH, at 25°C	6.9	8-90 <del>-</del> 000)					
Langelier Index	0.1	scaling		>0=scaling, <0	)=corrosive, 0=	stable	
Ryznar Index	6.9	stable		<6.5=scaling,	>7,5=corrosive	>6.5 and <7.5	i=stable
Corrosivity ratio	0.3	increasing co	prosive tendency	Applies to wa	ter in the pH ra	nge 7-8	

increasing corrosive tendency Applies to water in the pH range 7-8

which also contains dissolved oxygen

ratios <0.2 no corrosive properties

ratios >0.2 increasing corrosive tendency

aren e. I. Carew

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	Apolytical Windhoek
	I aboratory (1011 Cell +264 81 611 834
	Laboratory Walvis Bay
	Services walvisbaylab@analab.com.n
	DUR QUALITY IS IN THE DETAIL Unit 16, Ben Amathila Ave
	PO Box 86782, Windhoek, Namibi
кетак:	Overall classification of water, considering only constituents that have been tested for: Group C: low risk water
Interpretation based on South African Water Qu	guidelines for the evaluation of drinking water for human consumption, DWA, Namibia, April 1988 and ality Guidelines Volume 5: Agricultural water use: Livestock watering, Second Edition, 1996
For practical reasons	the quidelines are divided into four groups.
The highest group as	signed to any of the constituents determines the classification of the water as a whole.
Group A: excellent qu Group B: good quality	Jality water ∕ water
Group C: low risk wa	ter
Group D: nigh risk or	water unsuitable for human consumption
Ideally water should be a	be either Group A or Group B. If water is classified as Group C, the situation is not yet critical, but
urgent and immediate	e attention is required to reduce the levels of the problem constituents in the water to suitable levels.
Sample acceptance	Sample was collected in bottles provided by the laboratory. Sample was suitable for testing
0	
Masen .	<u>e ·</u>
<ol> <li>Carew Deputy Section He</li> </ol>	ead
This test report is of	nly valid without any alterations and shall not be published or reproduced except in full, with written consent of the

# APPENDIX I: BOREHOLE DISCHARGE TESTS

D N		IERN RVIC			VORK: +264 CELL: +264 8 1500 Sam N Tsumeb. 1	67 222 680 81 480 5375 Jujoma Dr Namibia		
IRRIGATIO	N SPECIA	ALISTS · A STALLAT	AGRICUL IONS • E	TURAL TUR	N-KEY SOLU PUMP INST			
		м	AIN C	DISCHAR	RGE TES	T FORM	1	
NAME:	JOHAN F	OURIE			DIAMETER:	7"		
TEL. NO.:				B/HOLE NO.: RIVER SIDE G25-2,06 16016				
P.O BOX:	10/07/20	22		B/HC		45.14		
EADM:	18/07/20			STAND		45IVI		
F-MAIL	WILDER	NE33 3F		STAND		OUUVIIVI		
STANDING	W/L:	8M			GPS:			
	ST	EP TES	ST			MAI	N TEST	
Pump Time [min]	Step 1	Step 2	Step 3	Recovery	Pump Time [min]	Water Level [m b collar]	Flowmeter Reading [m³/h]	Recove
1	-				1	9	3.53	25
2	9				3	11.5	8.63	22
3		-			5	14.5	11.41	12.5
4	8			0	7	18.9	13.60	9
5		-			10	25.5	13.91	
10					20	33.5	10.58	
15	-				25	34	10.62	
20					30	34.5	10.49	
25	4 14				40	35.3	10.48	
30					50	35.4	10.21	
35					60 (1hr)	35.3	10.31	
40	-				70	36.4	10.26	
50	3				80	36.5	10.21	
60					90	37.4	10.33	
9	-				100	37.5	10.12	
	-	-			120 (2hrs)	37.3	10.02	
0					180 (3brs)			
					210			
					240 (4hrs)			
					270			
					300 (5hrs)			
					360 (6hrs)			
3	-				420 (7hrs)			
			· · · · · · · · ·		480 (8hrs)			
					540 (9hrs)			
					600(10hrs)			

	ORTH SE	HERN RVIC A DIVISION ( ALISTS - ) STALLAT			VORK: +264 CELL: +264 8 1500 Sam N Tsumeb, 1 RN-KEY SOLU PUMP INSTA	67 222 680 11 480 5375 Iujoma Dr Namibia ITIONS • BOP ALLATIONS •	RE HOLE TESTING	G•SOLAR		
-		M					W AGRITURF PRO	DUCTS CC		
NAME:	JOHAN F			JISONA	DIAMETER:	6"				
TEL. NO.:				E	HOLE NO .:	HILL SIDE 3	0236			
P.O BOX:				B/HC	DLE DEPTH:	81M				
DATE:	18/07/202	22		PU	PUMP DEPTH: 72M					
FARM:	WILDER	NESS SA	FARI	STAND I	PIPE HIGHT:	300MM				
E-MAIL:					DURATION:					
STANDING	W/L:	25			GPS:					
	ST	EP TES	ST			MAI	NTEST			
Pump Time [min]	Step 1	Step 2	Step 3	Recovery	Pump Time [min]	Water Level [m b collar]	Flowmeter Reading [m³/h]	Recovery		
1					1	31	13,71	65		
2					3	42	11,15	55.6		
3					5	56	7.38	53		
4					7	65	2.13	50.4		
5					10	66.8	1.44	48.5		
7					15	67.8	1.08	44.8		
10					20	68.3	1.17	41.6		
15					25	68.7	1.06	41		
20					30	69	1.01	38.2		
25					40	69.1	1.04			
30					50	69.1	1.01			
35					60 (1hr)	69.1	1.01			
40					70					
50					80	36.5	10.21			
60					90	37.4	10.33			
					100	37.5	10.12			
					120 (2hrs)	37.3	10.02	-		
					150					
					180 (3hrs)		9			
					210					
					240 (4hrs)					
					270		-			
					300 (5hrs)					
					360 (6hrs)		-	ļ		
					420 (7hrs)					
					480 (8hrs)		-			
					540 (9hrs)			<u> </u>		
					600(10hrs)		-	<b> </b>		
	12 N				720 (12hrs)	2	2	0		

### APPENDIX J: WATER TREATMENT FOR HUMAN CONSUMPTION







# Metaqua® 187 L Polyphosphate-combination as corrosion inhibitor and hardness stabilizer for drinking water systems

#### Applications

Metaqua<sup>®</sup> 187 L is a combination product based on polyphosphate. It is used as Hardness Stabilizer and corrosion inhibitor for Hard water.

The polyphosphate-combination stabilizes Water Hardness and reduces corrosion and the formation of brown water primarily in sections of low flow or stagnation zones.

#### Product description

Metaqua<sup>®</sup> 187 L is a combination product based on sodium polyphosphates.

Appearance: white granulated powder

Phosphate content: 90.5 ± 2.0 % t-PO<sub>4</sub>

Conversion factors:  $PO_4$ -content x 0.7473 equates  $P_2O_5$ -content  $PO_4$ -content x 0.3261 equates P-content

pH (1 % solution): approx. 6.5

Max. solubility in 1 litre water at 20 °C: ca. 1.000 g

#### Legal requirement:

The composition of Metaqua<sup>®</sup> 187 L and the recommended dosage is in accordance with the German Drinking Water Ordinance. Metaqua<sup>®</sup> 187 L is complying with DIN EN standards as well as the requirements in this respect to the, FAO/WHO Expert Committee on Food Additives" (7. and 19. Report).

#### Mode of action

Metaqua<sup>®</sup> 187 L stabilizes the water hardness and prevents the formation of scale deposits in warm and cold water even at high pH. The corrosion inhibition of Metaqua<sup>®</sup> 187 L at steel-, galvanised steel- and copper systems is based on the formation of a protective layer by the phosphates.

Metaqua<sup>®</sup> 187 L prevents the formation of brown water. It masks heavy metal ions like iron or manganese.

The polyphosphate component of Metaqua® 187 L also works as orthophosphate reservoir. In long water lines the polyphosphate hydrolyzes to orthophosphate. Thus the corrosion protection of end lines is also assured.

#### Dosage:

The dosage to be applied depends on water parameters and operating conditions. The general dosage of Metaqua<sup>®</sup> 187 L is in the range of 3.0 to 5.0 g Metaqua<sup>®</sup> 187 L per m<sup>3</sup> water.

Process control includes monitoring of the effect of the water conditioning as well as an analytical control of the water quality.

#### Application:

Metaqua® 187 L is applied as 1-40% solution.

Metaqua<sup>®</sup> 187 L should be added continuously by an automatic dosing system proportional to the quantity of drinking water.

The complete dosing equipment (containers, pumps, pipes) must be made of acid resistant material.

It is recommended to use soft water for the dosage solution. During the dissolvation Metaqua<sup>®</sup> 187 L should be added slowly and under stirring into the water. Higher Temperatures until 50°C fastens the dissolution.

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#### PRODUCT INFORMATION - METAQUA® 187 L

#### Analysis:

The determination of Metaqua<sup>®</sup> 187 L is made by standard test methods (see Method of Analysis A 21 E inorganic phosphate) in consideration of the PO<sub>4</sub> content of the raw water.

1 g/m<sup>3</sup> Metaqua<sup>®</sup> 187 L = 0.90 g/m<sup>3</sup> t-PO<sub>4</sub><sup>3-</sup> 1 g/m<sup>3</sup> t-PO<sub>4</sub><sup>3-</sup> = 1.11 g/m<sup>3</sup> Metaqua<sup>®</sup> 187 L

#### Storage:

Storage containers and barrels have to be impervious to light and closed tightly.

#### Precautions:

For further information please see material safety data sheet.

The expiry date of the product is given on the packaging labels.

#### Certification

Our quality management system (ISO 9001:2008) and environmental management system (ISO 14001:2005) are successful certified by DQS.

The information contained herein reflects our current level of technical knowledge and experience. It does not constitute a legal warranty of particular characteristics or of fitness for a specific purpose and, due to the abundance of possible influences, does not exempt the user from making its own examinations and taking appropriate precautionary measures. It shall be the responsibility of the recipient of our products to respect any intellectual property rights and comply with any laws or other provisions.

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Revision Date: 2013-09-05

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# APPENDIX K: CURRICULUM VITAE OF CHARLIE DU TOIT

1.	Position:	Environmental Practitioner								
2.	Name/Surname:	Charl du Toit								
3.	Date of Birth:	29 October 1960								
4.	Nationality:	Namibian								
5.	Education:	Name of Institution Degree/Qualification			University of Stellenbosch, South Africa Hons B (B + A) in Business Administration and Management					
		Date Obtaine	d		1985-1987					
		Name of Insti	Name of Institution			f Stellenbo	sch, South Africa			
		Degree/Quali	Degree/Qualification		BSc Agric Hons (Chemistry, Agronomy and Soil Science)					
		Date Obtaine	Date Obtained			1979-1982				
		Name of Insti	tution		Boland Agricultural High School, Paarl, South Africa					
		Degree/Quali	fication		Grade 12					
		Date Obtaine	d		1974-1978					
6.	Membership of Professional Association:	EAPAN Mem	ber (Me	emb	ership Numl	ber: 112)				
7.	Languages:			<u>Sp</u>	eaking	Reading	Writing			
		English		Go	bod	Good	Good			
		Afrikaans		Go	bod	Good	Good			
8.	Employment	From	То		Employer		Position(s) held			
	Record:	2009	Prese	ent	Green Ear	th	Environmental			
					Environme	ntal	Practitioner			
					Consultant	S				
		2005	2008		Elmarie Du	u Toit	Manager			
					Town Plan	nina	5			
					Consultant	s				
		2003	2005		Pupkewitz	-	General Manager			
					Megabuild					
		1995	2003		Agra Coop Limited	erative	Manager Trade			
					Namibia		Chief Agricultural			
		1989	1995		Developme	ent	Consultant			

		Corporation		
		Ministry of	Agricultural	
1985	1988	Agriculture	Researcher	

### Certification:

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engaged.

IMA.

Charl du Toit

# APPENDIX L: CURRICULUM VITAE OF CARIEN VAN DER WALT

- **Position:** Environmental Consultant
- 2. Name/Surname: Carien van der Walt
- **3. Date of Birth:**6 August 1990
- 4. Nationality: Namibian
- 5. Education:

Institution	Degree/Diploma	Years
University of Stellenbosch	B.A. (Degree) Environment and	2009 to 2011
	Development	
University of South Africa	B.A. (Honours) Environmental	2012 to 2013
	Management	

### 6. Membership of Professional Associations:

EAPAN Member (Membership Number: 113)

### 7. Languages:

Language	Speaking	Reading	Writing
English	Good	Good	Good
Afrikaans	Good	Good	Good

### 8. Employment Record:

From	То	Employer	Positions Held
07/2013	Present	Green Earth Environmental Consultants	Environmental
			Consultant
06/2012	03/2013	Enviro Management Consultants Namibia	Environmental
			Consultant
12/2011	05/2012	Green Earth Environmental Consultants	Environmental
			Consultant

### 9. Detailed Tasks Assigned:

Conducting the Environmental Impact Assessment, Environmental Management Plan, Public Participation, Environmental Compliance and Environmental Control Officer

### **Certification:**

I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes myself, my qualifications, and my experience. I understand that any wilful misstatement described herein may lead to my disqualification or dismissal, if engage.

Carien van der Walt

# APPENDIX M: ENVIRONMENTAL MANAGEMENT PLAN