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Operational Environmental Management Plan (EMP) for the existing Gross Barmen Resort in the Otjozondjupa Region

EMP

Final

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Namibia Wildlife Resorts

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1 OVERVIEW

1.1 Project Background

Namibia Wildlife Resorts (NWR) is a state-owned enterprise, mandated to run the tourism facilities within the protected areas of Namibia. NWR has several operations across the country which are owned and managed by NWR. The majority of the facilities were constructed prior to the commencement of the Environmental Management Act (EMA) (7 of 2007). As such, Environmental Impact Assessments (EIA) were never conducted for these facilities. However, the facilities are still required to comply with the provisions of the EMA and its regulations. It is therefore required that Environmental Management Plans (EMPs) be developed and implemented for the existing facilities. This EMP is compiled for the existing Gross Barmen Resort located in the Otjozondjupa Region.

1.2 Gross Barmen Resort

Gross Barmen Resort is located approximately 100 km from the capital city of Windhoek, on the banks of a tributary of the Swakop River, set between rows of palm trees, green lawns and many pleasant walks. The locality of the Gross Barmen Resort is depicted in

Figure 1-1 below.

Figure 1-1: Locality map of Gross Barmen Resort

Gross-Barmen is a popular day resort for Namibians and a stopover for tourists. Water from the mineral-rich spring has a temperature of about 65 degrees Celsius (°C), which is cooled to about 40 °C for the revitalising indoor thermal pool (MEFT, 2021). Gross Barmen includes facilities for spa and wellness, fitness, recreation, and leisure. The main attraction of the resort is the health and hydro/medical spa centre, featuring thermal springs and providing a full range of spa treatments. **Figure 1-2** below provides an aerial view of the resort.

Figure 1-2: Gross Barmen Resort

1.2.1 Accomodation facilities

The resort includes the following accomodation facilities:

- 5 Premier Chalets
- 1 Premier Family Chalet
- 9 Family Chalets
- 32 Bush Chalets
- 8 Self-Catering Units
- 18 Campsites

1.2.2 Engineering Services

1.2.2.1 Waste Disposal

The general waste at Gross Barmen Resort is collected in general waste bins onsite as shown in **Figure 1-3** below. The waste is then loaded on a truck and disposed of at the Okahandja landfill site.

Figure 1-3: General waste collection on site

1.2.2.2 Water

Gross Barmen Resort is connected to the Okahandja Town Council water reticulation system, which is supplied by NamWater. The Resort makes use of potable water for general domestic use. Additionally, Gross Barmen Resort makes use of water sourced from the hot spring for the thermal swimming pool. Gross Barmen Resort has a wastewater treatment plant on site, and the treated water is used for landscaping purposes. The water engineering infrastructure is depicted in **Figure 1-4** overleaf.

Figure 1-4: Water Engineering infrastructure

1.2.2.3 Electricity

Gross Barmen Resort is connected to the Okahandja Town Council electricity reticulation system which is supplied by NamPower.

1.2.2.4 Sewer

Gross Barmen Resort has a wastewater treatment plant on site and the treated water is used for landscaping on site. It should be noted that the current wastewater treatment plant does not have a discharge permit from the Ministry of Agriculture, Water and Land Reform (MAWLR). The proponent is to apply and obtain the relevant permit in order to be compliant.

1.2.2.5 Access

Access to Gross Barmen Resort is gained through D1972 road from Okahandja.

1.3 Archaeology

An existing grave site is located on site at the Gross Barmen resort as depicted in **Figure 1-5** below. The graves belong to the previous owners of the farm on which the Gross Barmen resort is now located. The site is considered a heritage site and should therefore not be further disturbed by the current and future activities taking place on the site.

Figure 1-5: Grave located on site

1.4 Purpose of the EMP

An Environmental Management Plan (EMP) is defined as:

"*…a plan that describes how activities that may have significant environments effects on the environment are to be mitigated, controlled and monitored*."

An EMP is one of the most important outputs of the EA process as it synthesises all the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. It provides a link between the impacts identified in the Environmental Impact Assessment (EIA) Process and the required environmental management on the ground during project implementation and operation. It is important to note that an EMP is a legally binding document and a person who contravenes the provisions of this EMP may face imprisonment and/or a fine. This EMP is a living document and should be amended to adapt to project changes and/or environmental conditions and feedback from compliance monitoring.

The purpose of this document is therefore to guide environmental management throughout the following life-cycle stages of the proposed development, operation, and decommissioning.

The following phases are addressed in this EMP:

- **Operation** - the period during which the facilities are operational.
- **Decommissioning** – Should the development be closed; this phase will be implemented.

1.5 Environmental Assessment Practitioner (EAP)

GCS Water Environmental Engineering Namibia (Pty) Ltd ("GCS" hereafter) has been appointed by Namibia Wildlife Resorts (NWR) as independent environmental consultants to prepare the required Environmental Management Plan (EMP) for the proposed development. The EMP is to be submitted with the supporting documents as part of the application for an Environmental Clearance Certificate (ECC) to the Environmental Commissioner at the Department of Environmental Affairs (DEA) of the Ministry of Environment, Forestry and Tourism (MEFT). The EMP will also be used by Contractors as well as the Proponent in guiding them during the operations to ensure that impacts on the environment are limited or avoided altogether.

1.6 Legal Requirements

The contents of the EMP must meet the requirements Section 8 (j) of the EIA Regulations. The EMP must address the potential environmental impacts of the activity on the environment throughout the project life cycle. It must also include a system for assessment of the effectiveness of monitoring and management arrangements after implementation. NWR therefore has the responsibility to ensure that the proposed activity conforms to the principles of the EMA and must ensure that any contractors appointed by them also comply with such principles.

Table 1-1 below lists the requirements of an EMP as stipulated by Section 8 (j) of the EIA Regulations.

Table 1-1: Applicable and relevant Namibian legislations and guidelines for the EA process

Legislation	Permit/Approval/Requirement	Contact Details
Environmental Management Act 2007 Environmental Impact Assessment (EIA) Regulations (EIAR) (GG No. 4878)	Amendments (required every 3 years) to this EMP will require an amendment of the ECC for these developments. Activities listed in Government Notice (GN) No. 29 of GG No. 4878 require an ECC. Activity 6 The construction of resorts, lodges, hotels or other tourism and hospitality facilities	Mr Damian Nchindo Department of Environmental Affairs, Ministry of Environment, Forestry and Tourism Tel: 061 284 2701
Water Act 54 of 1956	Prohibits the pollution of underground and surface water bodies (S23 (1)). Liability of clean-up costs after closure/abandonment of an activity (S23 (2)).	Mr Witbooi (Department of Water Affairs): Tel: (061) 208 7226
Water Resources Management Act No.11 of 2013	The act provides for the management, protection, development, use and conservation of water resources; and provides for the regulation and monitoring of water services and to provide for incidental matters. The objects of this Act are to: Ensure that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (Section 68).	

Legislation	Permit/Approval/Requirement	Contact Details
Forestry Act 12 of 2001	The Act provides for the management and use of forests and related products / resources. It offers protection to any living tree, bush or shrub growing within 100 metres of a river, stream or watercourse on land that is not a surveyed erven of a local authority area. In such instances, a licence would be required to cut and remove any such vegetation. These provisions are only guidelines.	If there are trees within the proposed footprint of the project area that need to be removed, the proponent should notify the local Forestry Department of the number and/or type of trees to be removed to allow exploration activities and apply for permit to remove protected tree species.
National Heritage Act (27 of 2004)	Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains. Section 48 ff sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Section 51 (3) sets out the requirements for impact assessment. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Heritage sites or remains are defined in Part 1, Definitions 1, as "any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface".	Ms. Erica Ndalikokule National Heritage Council of Namibia erica@nhc-nam.org
Namibia Tourism Board Act 21 of 2000	To establish the Namibia Tourism Board and to provide for its functions; to provide for the registration and grading of accommodation establishments; to provide for the declaration of any sector of the tourism industry as a regulated sector and for the registration of businesses falling within a regulated sector; and to provide for matters incidental thereto.	Namibia Tourism Board info@namibiatourism.com.na +264 61 290 6000

Legislation	Permit/Approval/Requirement	Contact Details
National Policy on Tourism 2008	The National Policy on Tourism for Namibia aims to provide a framework for the mobilisation of tourism resources to realise long term national goals defined in Vision 2030 and the more specific targets of the Third National Development Plan, namely, sustained economic growth, employment creation, reduced inequalities in income, gender as well as between the various regions, reduced poverty, and the promotion of economic empowerment.	Department of Tourism and Gambling, Ministry of Environment, Forestry and Tourism +264 61 284 2178
Water Resources Management Act No 11 of 2013	Provide for the management, protection, development, use and conservation of water resources; to provide for the regulation and monitoring of water services and to provide for incidental matters. Part 13 of the Act relates to the control of water pollution.	Mr Beajah Wohler Ministry of Agriculture, Water and Land Reform Directorate Water Resource Management Policy and Water Law Administration Beajah.Wohler@mawf.gov.na

1.7 Assumptions and Limitations

This EMP has been drafted with the acknowledgment of the following assumptions and limitations:

- This EMP has been drafted based on the scoping-level assessment of impacts conducted for the proposed development. No detailed specialist studies were included as part of the assessment; and
- The mitigation measures recommended in this EMP document are based on the risks/impacts which were identified based on the provided project description and site investigation. Should the scope of the project change, the risks will have to be reassessed and mitigation measures provided will be revised accordingly.

1.8 Report Structure

This EMP lays out the management actions for the existing operations at the site. The EMP addresses the following phases:

- **Operation phase** - the period during which the facility will be operational and conducted by the proponent and/or their contractors; and
- **Decommissioning phase**: the period during which the Proponent may decide to discontinue the operations and its associated activities.

2 ROLES AND RESPONSIBILITIES

NWR (the Proponent) is ultimately responsible for the implementation of the EMP. The Proponent may delegate this responsibility at any time, as they deem necessary, from planning and design to operation and maintenance phase and decommissioning phase (if considered). The delegated responsibility for the effective implementation of this EMP will rest on the following key individuals which may be fulfilled by the same person:

- Proponent's Representative; and
- Environmental Control Officer.

2.1 Proponent's Representative

If the Proponent does not personally manage all aspects of the planning and design, operation and decommissioning activities, referred to in this EMP, they should assign this responsibility to a suitably qualified individual referred to in this plan as the Proponent's Representative (PR). The Proponent may decide to assign the role of a PR to one person for both phases. Alternatively, the Proponent may decide to assign a separate PR for each component i.e., planning and design, operation, and decommissioning phase. The PR's responsibilities are included in **Table 2-1** below.

Table 2-1: Responsibilities assigned to the Proponent's Representative for the operation and decommissioning phases

Responsibility	Project Phase
Managing the implementation of this EMP and updating and maintaining it when necessary	Throughout the lifetime of the project
Management and monitoring of individuals and/or equipment on-site in terms of compliance with this EMP	Throughout the lifetime of the project
Issuing fines for contravening EMP provisions	Throughout the lifetime of the project

2.2 Environmental Control Officer

The Proponent should assign the responsibility of overseeing the implementation of the whole EMP on the ground during the life-cycle of the project to a designated person, referred to in this EMP as the Environmental Control Officer (ECO). The Proponent may decide to assign this role to one person for each project phase or may assign separate individual ECOs to oversee EMP implementation during each phase. The ECOs will have the following responsibilities:

- Management and facilitation of communication between the Proponent, PR and Interested and Affected Parties (I&APs) with regard to this EMP;
- Conducting site inspections (recommended minimum frequency is bi-annually) of all areas with respect to the implementation of this EMP (monitor and audit the implementation of the EMP);
- Advising the PR on the removal of person(s) and/or equipment not complying with the provisions of this EMP;
- Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP; and
- Undertaking an annual review of the EMP and recommending additions and/or changes to this document.

3 ENVIRONMENTAL MANAGEMENT PLAN ACTIONS

3.1 Key Potential environmental impacts to be managed

The following key potential impacts have been identified per project phase and are summarised in **Table 3-1** below.

Table 3-1: Summary of key potential environmental impacts per project phase

	Project Phase	Potential impacts identified in the EA
1	Operation	Health and safety, soil, surface and groundwater contamination, wildlife disturbance, dust, noise, environmental degradation, erosion, archaeological and social impacts.
2	Decommissioning	Health and safety, soil, surface and groundwater contamination, wildlife disturbance, dust, noise, environmental degradation, erosion, archaeological and social impacts.

The aim of the management actions of the EMP is to avoid potential impacts where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts.

Management actions recommended to manage the potential impacts outlined above are presented in the following tables. The management actions were compiled based on the two project phases:

- Operation and maintenance phase management actions (during operation of the facility) (**Table 3-2**).
- Decommissioning phase (**Table 3-3**)

The responsible persons at NWR should assess these commitments in detail and should acknowledge their commitment to the specific management actions detailed in the table of the next subchapters.

3.2 Phase 1: Operational Phase Management Actions

The management actions for the operational phase during which the facility is operational will take place are listed in **Table 3-2**.

Table 3-2: Operation phase management actions

Environmental Feature	Impact	Management Actions
EMP training	Lack of EMP awareness and the implications thereof	• Employees appointed for work (construction, maintenance etc.) must ensure that all personnel are aware of necessary health, safety, and environmental considerations applicable to their respective work.
Monitoring	EMP non-compliance	• The ECO or the Proponent/Proponents Representative should monitor the implementation of this EMP. • The Proponents Representative should inspect the site at least on a monthly basis. • Bi-annual audits should be conducted of site activities by an external ECO.
Waste Management	Visual impact and soil contamination	• The site should always be kept tidy. • All domestic and general waste produced daily should be disposed of correctly. • No waste may be buried or burned. • Waste containers (bins) should be emptied regularly and removed from site to the nearest municipal waste disposal site. Records of collection should be kept for auditing purposes. • All recyclable waste needs to be taken to the nearest recycling depot. • Adequate separate waste containers (bins) for hazardous and domestic / general waste must be provided on site. • Staff should be sensitised to dispose of waste in a responsible manner and not to litter.
Hazardous Waste	Soil and groundwater contamination	• Adequate separate waste containers (bins) for hazardous and domestic / general waste must be provided on site. • Hazardous waste should be disposed of at a facility that is able to receive such waste and records of disposal should be kept.

Environmental Feature	Impact	Management Actions
		• Maintenance and washing of vehicles and machinery on site should take place only at a designated workshop area that is on a bunded, impermeable surface.
Biodiversity	Loss of Biodiversity	• Trees and plants protected under the Forest Act No 12 of 2001 are not to be removed without a valid permit from the local Department of Forestry. • Off-road driving should not be allowed on site. • No alien vegetation should be introduced on site.
Noise	Disturbance to fauna	• Noise restrictions should be in place on site to minimise disturbance.
Health and Safety	Health and Safety on site	• Ensure first aid training and environmental awareness training is provided to staff • Fire extinguisher training should be provided to a designated member of staff who will act a fire marshal during fire events. • Any accidents/incidents occurring on site should be reported to MEFT and other relevant authority within 24 hours.
Employment	Recruitment	• Local employment and use of local businesses/suppliers should be encouraged to promote and improve the local economy as far as reassembly possible. • Should the required services and/or goods not be available locally then look to other localities for these services/goods.
Ablution	Sanitation	• Separate ablutions should be available for men and women and should clearly be indicated as such. • Sewage waste needs to be removed on a regular basis to the nearest approved sewage disposal site. • Workers responsible for cleaning the toilets should be provided with latex gloves and masks.
Water Management	Water saving Groundwater contamination	• Water saving mechanisms should be implemented on site e.g., installation of water saving devices where practical.

Environmental Feature	Impact	Management Actions
		• Should any hazardous material and wastes be produced these shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials. • Hazardous and non-hazardous waste shall be stored separately at all times and should be disposed at a facility that is licenced to receive such waste.
Archaeology	Archaeological Impacts	• Existing heritage or archaeological sites may not be disturbed by the operations at the facility. • These should be demarcated to limit access to the sites. • Should a heritage site or archaeological site be uncovered or discovered on site, a "chance find" procedure should be applied in the order they appear below: o If operating machinery or equipment, stop work; o Demarcate the site with danger tape; o Determine GPS position if possible; o Report findings to the construction foreman; o Report findings, site location and actions taken to superintendent; o Cease any works in immediate vicinity; o Visit site and determine whether work can proceed without damage to findings; o Determine and demarcate exclusion boundary; o Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by archaeologist; o Inspect site and confirm addition to project GIS; o Advise the National Heritage Council of Namibia (NHCN) and request written permission to remove findings from work area; and o Recovery, packaging and labelling of findings for transfer to National Museum.

Environmental Feature	Impact	Management Actions
Traffic	Traffic Impacts	• Introduce speed limits and signage within the facility. • Roads to be clearly demarcated. • No off-road driving to be permitted on site.
Wastewater	Surface and groundwater contamination	• The discharge of effluent into the environment and required monitoring is to be done in accordance with the discharge permit as issued by MAWLR for the wastewater treatment facility. • Bi-annual monitoring of groundwater and surface water resources (as applicable).

3.3 Phase 2: Rehabilitation and Decommissioning Management Actions

The facility is expected to be permanent and is not anticipated to be decommissioned. However, the decommissioning impacts have been assessed. The table below (**Table 3-3)** presents the management action for decommissioning phase, should this take place.

Table 3-3: Decommissioning phase management actions

Environmental Feature	Impact	Management Actions
Employment	Loss of employment	• The Proponent should inform the employees, of its intentions to close the facility, and the expected date of such. • The Proponent should raise awareness of the possibilities for work within the tourism sector.
Rehabilitation	Soil and Groundwater contamination	• An inspection of the soil and groundwater contamination must be undertaken to determine the presence, nature and extent of contamination on site. • This will guide the level and kind of remediation to be undertaken on site. • Prior to the infrastructure being destroyed, all residue products must be carefully removed for recycling or safe disposal. • Solid materials must be used for filling. Only clean soil should be used for filling purposes.
Waste Management	Pollution	• Contaminated soil must be removed from site and disposed at a facility that is able to receive such waste. • No waste may remain on site after the closure of the facility. • Waste must be disposed of at an approved waste facility. Proof of disposal certificates must be available.

3.4 Recommendations for Monitoring

In order to prevent and minimize the above-mentioned environmental impacts, the following site monitoring measures need to be done:

- Monitor whether provisions as set out in the EMP has been complied with.
- Non-compliance is to be recorded and discussed at weekly site meetings and timeous remedial actions taken.
- Monitoring feedback is to be recorded using the attached checklist (**Appendix B**).

4 CONCLUSION

Based on the recommendation given in this EMP, GCS is confident that the activities, as described in **Chapter 1** of the EMP may be granted an Environmental Clearance Certificate, provided that the EMP is implemented and that all the legal requirements pertaining to this development are complied with.

APPENDIX A: CV OF EAP