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**ENVIRONMENTAL MANAGEMENT PLAN
FOR THE OPERATION AND MAINTENANCE OF
THE RUACANA EHA LODGE IN OMUSATI REGION**



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1. INTRODUCTION

Ruacana Eha Lodge in northern Namibia is situated in the Ruacana town and 22km from the Ruacana Hydro Power Station. The Ruacana Eha Lodge started off as Single Quarters which were built in the early 70s to provide accommodation and meals to NamPower employees as well as contractors/suppliers who are frequently being called upon for specific maintenance works at Ruacana Hydro Power Station. Apart from some permanent employees utilising the place it was very much underutilised during the year and only became fully occupied during the 3 to 4 months maintenance season (low Kunene River flow). In the late 90s NamPower decided to convert the Ruacana Single Quarters into a lodge (Eha) to provide services to a wider public, especially tourists and other visitors who frequented the area. The lodge was commissioned in 2003.

The lodge is nestled in the Ruacana town council district and spans a total area of 25965m². Surrounded by natural beauty, the lodge is a perfect gateway to the wonders of Ruacana Constituency like Ruacana Water fall, Otjipahuriro Campsite and many other places. The lodge offers relaxation, conferencing and fine dining. The lodge is a door step to the Ruacana falls (20 km away) and a distance away from the traditional Himba village.



Figure 1: Locality map for Ruacana Eha Lodge

1.2 Project description

The Ruacana Eha Lodge consists of 21 rooms and 1 suite, divided into luxury, standard and traditional hut. All rooms are very spacious and comfortably equipped, offering a relaxation feeling away from home. The lodge also offers 15 camp sites which includes braai facilities with water and electricity points and 6 traditional huts consisting of two beds and a braai area.



Figure 2. Ruacana Eha Lodge

The lodge features a large restaurant and bar area which offers breakfast buffet, lunch and dinner. The bar is a perfect meeting point in the evening offering a calm and amazing atmosphere for all its guests. Leisure and recreation facilities include 1 large swimming pool, a gym and 1 volley ball court yard.

The lodge is a host to a large conference room up to 42 persons with all the state of the art equipment available. The area is a perfect place for corporate meetings, events and wedding possibilities. The lodge is “physically challenged friendly”, offering ideal facilities for guests with special needs. All public areas can be reached by wheelchair using our spacious walkways.

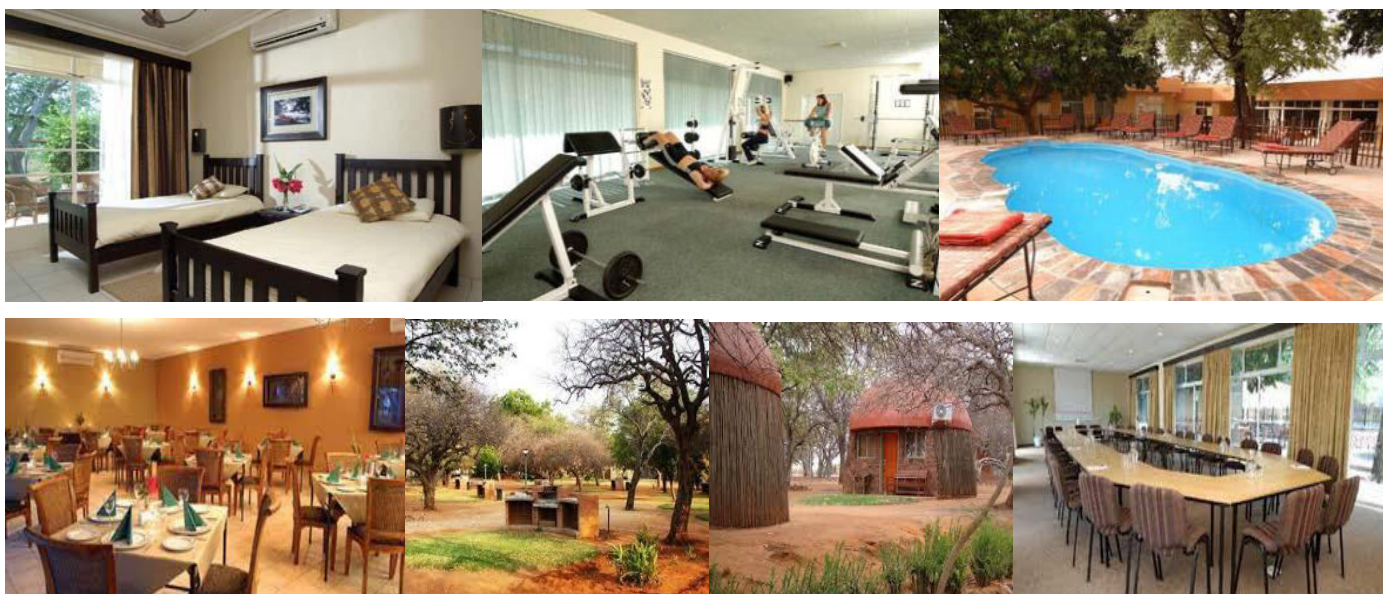


Figure 3. Some of the facilities at Ruacana Eha Lodge (Accommodation, Gym, swimming pool area, restaurant and bar, camping sites and conferences centre).

1.3 Area description

The Ruacana Eha lodge is located in Ruacana town in Ruacana constituency, Omusati Region. The majority of the population in the Ruacana constituency engage in livestock farming, especially with cattle, goats and sheep. However, the minority of the population is involved in crop farming, particularly maize and Mahangu. The dominant tree species in the constituency is Mopane trees which are usually used for the construction of traditional households. Wild animals such as hyenas, elephants, jackals and lions can be found in area.

Due to its beautiful sceneries, the constituency attract both local and foreign tourist, especially those who travel to enjoy the beauty of Otjipahuriro Hippo Pool and Ruacana Waterfall. Ruacana Eha Lodge is one the accommodation facilities used by tourist when visiting the constituency.

Oshifo is the Administrative Centre of the Constituency. The Ruacana Town has a total population of about 8,000. It has diverse of culture that comprises of Ovatus, Tjimbas, Himbas, Dhembas and Aawambo. It has a private sector with a wide variety of economic activities and the most dominant being trading which includes formal and informal markets. The shops and cuca shops provide essential goods to local population and neighbouring Angola.

The lodge is situated in townland with so much anthropogenic disturbances such as residential dwellings, and roads (gravel and tarmac). The natural environment has been altered and most of the vegetation have been cleared. The lodge have different tree species which have been planted that include fruit trees such as mango and guava other greenery for aesthetic purposes. The lodge also have a small garden where vegetables such as lettuce, tomatoes and green peppers are grown and used as ingredients in the food preparation process.

1.4 Purpose of this Environmental Management Plan (EMP)

The purpose of this Environmental Management Plan (EMP) is to provide procedures, methods and specific environmental guidance that will be used to control and minimize the environmental and social impacts of all operational activities associated with Ruacana Eha Lodge. The EMP is intended to manage, mitigate and guide management actions in order to ensure that avoidable adverse impacts of the Ruacana Eha Lodge operations are prevented and positive benefits are enhanced. The EMP further aims at ensuring that decision making at the Lodge contributes to achieving its EMP objectives, in order to improve sustainability, reduce its long term environmental impact, and increase the welfare of employees, guests.

The scope of this EMS covers all the activities related to the operations of the Lodge including all future upgrades.

Objectives of the environmental management plan are:

- To ensure that all relevant legislation are complied with during the operation of the Lodge
- To ensure that all environmental aspects are effectively identified monitored and managed and effective mitigation measures are taken and implemented.
- To ensure that the operation activities associated with the Lodge do not result in undue or reasonably avoidable adverse environmental impacts;
- To outline functions and responsibilities of the responsible persons involved in the operation of the lodge towards environmental and social management;
- To propose mechanisms for monitoring compliance, and preventing long term or permanent environmental degradation through an adaptive management approach to continuous improvement;
- To promote environmental awareness and understanding among employees and contractors through training;

2. POLICY AND LEGAL FRAMEWORK

Legal compliance is an important aspect of sound environmental management. Environmental legislation in Namibia was initially promulgated because environmental degradation must at the very least be minimised and at the most prevented. The table below list all related legislations which are applicable to the operation of Eha Lodge.

Table 1 Legislation applicable to the operation of Eha Lodge

Legislation	Section	Implication
The constitution of the republic of Namibia	Article 95(l)	<p>This article provides for duty to guard against the “degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia”</p> <p>States that “policies aimed at maintaining the ecosystems, essential ecological processes and biological processes for the benefit of all Namibians....” should be promoted</p>
Environmental Management Act no 7 of 2007	<p>Section 3</p> <p>Section 27</p> <p>Section 32</p> <p>All other applicable sections</p>	<ul style="list-style-type: none"> • All activities performed should be in line with the following principles: <ul style="list-style-type: none"> ○ Interested and affected parties should have an opportunity to participate in decision making ○ Listed activities should be subject to an EIA ○ Polluter should pay for rehabilitation ○ Pollution should be minimized ○ Cultural and natural heritage must be protected and respected ○ Activities which cause damage to the environment should be reduced, limited and controlled ○ Reduce, re-use and recycling of waste must be promoted • Environmental assessments should be carried out for listed activities. The proposed activity can be classified under the following range of activities: <ul style="list-style-type: none"> ○ Water use and disposal ○ Land use and transformation ○ Tourism development activities ○ Infrastructure • These sections details the process to be followed in order to obtain a clearance certificate • All existing listed activities must obtain a clearance certificate within one year of the law coming into effect (February 2013). Therefore, all existing activities which can be considered a listed activity should apply for clearance.
EIA Regulations GN 29 and 30 of EMA (2012)	<p>GN 29</p> <p>GN 30</p>	<ul style="list-style-type: none"> • Identifies and list certain activities that cannot be undertaken without an environmental clearance certificate • Provides the regulations governing the environmental assessment (EA) process. <p>Listed activity: The construction of leisure and recreational sites</p>
Water Act no 54 of 1956	<p>Section 21 and 22</p> <p>Section 23</p> <p>All other applicable sections</p>	<ul style="list-style-type: none"> • Conditions in terms of the disposal and management of effluent are to be adhered to • Necessary steps shall be taken in order to prevent water pollution. • Any person wilfully or negligently does any act which could pollute public or private water including underground water shall be guilty of an offence
Township and Division of Land Ordinance 11 of 1963	All applicable sections	<ul style="list-style-type: none"> • This ordinance regulate subdivisions of portions of land falling within a proclaimed Local Authority area

Local Authority Act No. 23 of 1992	Section 34-47 All other applicable sections	<ul style="list-style-type: none"> • Gives prescription on the manner in which a town council or municipality should be managed by the town or Municipal Council particularly with regards to water and sewage. • The purpose of the Local Authorities Act is to provide for the determination, for purposes of local government, of local authority councils; the establishment of such local authority councils; and to define the powers, duties and functions of local authority councils; and to provide for incidental matters
Labour Act no 11 of 2007, Regulations	Chapter 2, section 3 Chapter 4 Part A, section 39 Section 40 Section 41 Section 42 All other applicable sections	<ul style="list-style-type: none"> • Restricts employment of children under the age of 16 • The employer shall provide a working environment that is safe, without risk and with adequate facilities and arrangements for the welfare of employees. • Provide employees with adequate PPE if reasonably necessary. • Employer shall provide training to all employees in all aspects of health and safety. • Ensure the use, handling, storage or transport of articles or substance is safe and without a risk to their health. • The employer shall identify hazards attached to any work that is performed or may be performed by any of his/her employees including the risks or potential risks to their health and safety • Employer must take due care to ensure that business operations on its premises does not expose risk on the health and safety of persons either than its employees. • Employees must take reasonable care to ensure their own safety and health at the work place. • Employees may leave the work site if reasonable measures to protect their health are not taken.
Public and Environmental Health Act no 1 of 2015	<ul style="list-style-type: none"> • Section 52 Section 53	<ul style="list-style-type: none"> • A person generating waste must ensure that the waste generated is kept and stored under conditions that causes no harm to human health or damage to the environment. • Waste must only be disposed of at a waste disposal site, including an incinerator approved by the local authority concerned.
Nature conservation Ordinance No 11 of 1976	All applicable sections	<ul style="list-style-type: none"> • Provides for the legislation regarding the protection of indigenous plants
Water Resources Management Act no 24 of 2004	Section 56 Section 70 All other applicable sections	<ul style="list-style-type: none"> • No discharge of effluent may take place without a permit <ul style="list-style-type: none"> ○ Effluent is defined under this Act as any liquid discharge that occurs as a result of domestic, commercial, industrial or agricultural activities • No wastewater, effluent or waste water is to be discharged or deposited directly or indirectly into a water resource • Construct a waste water treatment facility where it is likely to constitute a direct or indirect source of pollution.
Hazardous Substances	All applicable sections	<ul style="list-style-type: none"> • To provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly

Ordinance 14 of 1974		<p>sensitizing or flammable nature or the generation of pressure thereby in certain circumstances;</p> <ul style="list-style-type: none"> • To provide for the division of such substances into groups in relation to the degree of danger; • To provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances; and to provide for matters connected therewith.
National heritage Act 27, 2004	All applicable sections	<ul style="list-style-type: none"> • Provides for the protection and conservation of places and objects of heritage significance.

3. EMP ROLES AND RESPONSIBILITIES

It is the responsibility of the Ruacana Eha Lodge management to ensure that all the environmental management actions are carried out effectively and timeously. It is important to note that the successful implementation of the EMP is, however dependent on clearly defined roles and responsibilities by several stakeholders. Below are the key employees that are responsible for the management of environmental and social issues during the operation of Lodge:

The Lodge Manager shall ensure that:

- Environmental requirements are adequately covered in any external service provider's contracts.
- Corrective actions are identified for non-compliances.
- Appropriate records and information regarding compliance with environmental requirements are maintained.
- That the Lodge remains in compliance with the requirements of this EMP, through regular communication and monitoring.
- Complaints and grievances from stakeholders are resolved timeously

The NamPower SHEW Section shall:

- Ensure that all requirements with regards to this EMP are fulfilled.
- Assist the Lodge Manager in ensuring the Lodge remains in compliance with this EMP.
- Provide SHEW inductions for the external service providers and awareness training for the employees.
- Audit the implementation of this EMP by the Lodge.
- Advise the employee on actions or issues impacting on the environment and provide appropriate recommendations to address these matters.
- Ensures that continual improvement is made with regard to the environmental performance at the Lodge.

Lodge SHE representative shall:

- Ensure adequate training and education of all staff involved in EMP implementation.
- Keep record on environmental data.
- Make recommendation to the SHEW section regarding EMP performance as part of an overall commitment to continuous improvement
- Report any incidents or non-conformances with the EMP to the SHEW section.

4. OPERATIONAL PHASE ACTIVITIES, MANAGEMENT AND MITIGATION MEASURES

4.1 Description of activities related to the operation of the Lodge

The table below summarises the activities which are undertaken as part of the operation of the Lodge as well as the aspects and impacts associated with these activities.

Table 2 Description of the activities related to the operation the Ruacana Eha Lodge and related environmental aspects and impacts

Activity		Description	Associated: Aspects and Impacts	
Accommodation:	Rooms	The lodge offers accommodation to its guests this includes: exclusive and standard rooms, traditional hats and camping areas	-The use of water -The use of energy Waste generation	-Contribution to resource (water and energy) depletion -Contribute to filling up of landfill space
	Rest camps		-The use of water -The use of energy -Waste generation -Burning wood	-Contribute to resource depletion. -Soil and underground water pollution -Contributing to resource (energy) depletion. -Contributes to filling up of landfill space. Generated waste water can result to soil and water pollution if not managed properly.

				-Air pollution and contributing to deforestation and climate change.
Gardening	Maintaining and upkeep of the Lodge's garden area	-Carbon sink -Use of water -Use of pesticides	-Reducing CO2 concentration from the atmosphere -Contribution to the depletion of water resources. -Soil and water pollution	
Generator	The lodge has a generator that provides back up power in case of a power outage.	-Oil spills -Noise -Air Emissions	-Soil pollution -Noise pollution -Air pollution	
Food preparation and beverages	Provision of meals and drinks to all Lodge guests	-Use of energy -Use of water -Waste generation	-Contributes to resource (energy) depletion. -Contributes to resource (water) depletion -Filling up of landfill space. -Soil and water pollution if not managed properly.	
Laundry services	Provision of laundry services and house-keeping for the whole Lodge	-Use of water -Use of energy -Waste generation -Use of chemicals (detergents)	-Contribute to resource (water) depletion. -Contributes to the depletion of energy resources -Filling up of landfill space soil and water pollution	
Recreational facilities	The lodge offers recreational facilities for relaxation. These facilities include:	-Use of water -Use of energy -Waste generation	-Contribute to resource (water) depletion. -Contributes to the depletion of energy resources Filling up of landfill space	

	Swimming pool and Gym		
Medical services	Provision of medical services to employees (Clinic accommodated at the lodge for employees at Ruacana)	Medical waste generation	-Human health impacts

4.2 MITIGATION AND MANAGEMENT MEASURES

In order to ensure that the potential impacts are eliminated and/or minimised, it is necessary to ensure that the various activities related to the operation of the Ruacana Eha Lodge are adequately managed and monitored. Table 4.2 below outlines mitigation measures as well as objectives to be achieved. Each mitigation measure is also assigned to a responsible person.

Table 4.2 Mitigation measures during operation

Aspect	Mitigation objectives	Management and Mitigation measure	Responsible person
<p>Social: creation of jobs, environment Offering students internship opportunities.</p>	<p>To promote socio-economic developments</p>	<p>No management measures required as this have positive impacts.</p>	<p>Lodge Manager</p>
<p>Environmental awareness</p>	<p>Minimise the occurrence of environmental aspect and minimise their impact on the environment</p>	<ul style="list-style-type: none"> • All staff to receive environmental awareness training. • Refresher environmental awareness training to be available when required. • The SHEW section through the SHE representative shall erect and maintain information posters at key locations at the lodge. • All staff are to be made aware of their individual roles and responsibilities in achieving compliance with the EMP. 	<p>SHEW section Lodge Manager Lodge SHE representative</p>
<p>Oil spills</p>	<p>Ensure that the petroleum product spills are prevented and if not, the impacts are minimised.</p>	<ul style="list-style-type: none"> • Construct a bund wall around the generator to contain any potential spill. • Spill kits and drip trays must be made available onsite. • In an event of a spill, contaminated soil must be bio-remediated onsite. 	<p>SHEW Section Lodge Manager SHE representative</p>

<p>LPG handling and storage</p>	<p>Minimise impacts related to LPG</p>	<ul style="list-style-type: none"> • NamPower Spill Response procedure to be implemented. • All gas cylinders to be used and stored in a upright position • Make sure supplier adheres to correct filling procedures and all cylinders are checked by an appropriate inspection body. • NamPower Spill Response procedure to be implemented 		
<p>Use of natural resources</p>	<p>Water</p>	<p>To ensure that the resources are used sustainably in order to prevent resource depletion</p>	<ul style="list-style-type: none"> • Develop a closed circuit water system at the swimming pool to enable water re – circulation • Rainwater harvesting - this water can be used to water the garden. • Develop an awareness program on water saving measures • Ensure planned and reactive maintenance on taps and pipes. • Cover swimming pool when not in use to prevent evaporation • Corrective action shall be taken immediately should there be any leaking tap or pipe. • Capturing and verifying the water meter readings on a monthly basis • Conduct monthly inspection to identify water leaks • Sustainable and efficient use of available natural resource (limit wastage) • Water saving tips should be shared with both employees and lodge guests. 	<p>Lodge manager</p> <p>SHE representative</p> <p>SHEW Section</p>

	Energy		<ul style="list-style-type: none"> • Develop an awareness program on energy efficiency and energy saving techniques for both employees and lodge guests. • All rooms should be fitted with LED lights. • Install solar geysers to save on energy consumption • The use of gas stoves for cooking must be promoted. 	
Noise	To reduce nuisance and health impacts emanating from increased noise levels.	<ul style="list-style-type: none"> • All noise generating activities should be kept to a minimum. • Implement noise control measures such as no loud music or other noise disturbing activities especially during the night. • Compliance with relevant standards, specifications and legislation concerning noise should be adhered to. 	<p>SHEW Section</p> <p>Lodge manager</p>	
Waste management	To avoid, manage and mitigate potential impacts on the environment caused by, incorrect storage, handling and general disposal of general and hazardous solid waste.	<ul style="list-style-type: none"> • Sufficient, covered waste collection bins shall be provided at the lodge. • Waste shall be segregated into separate bins and clearly marked for each waste type. • Staff shall be trained in waste management. • Bins shall be emptied regularly. • General waste shall be disposed of at recognised and registered waste disposal sites/recycling companies. • Hazardous waste shall be disposed of at a registered hazardous waste disposal site. Maintain a record of safe disposal certificates for the hazardous waste after safe disposal and a copy should be emailed to SHEW 	<p>Lodge manager</p> <p>SHE representative SHEW Section</p>	

		<ul style="list-style-type: none"> • Recycling of waste should be promoted. • Colour coded recyclable waste bins should be made available at the lodge. 	
Waste water management	To avoid, manage and mitigate potential impacts on the environment caused by waste water.	<ul style="list-style-type: none"> • The lodge wastewater is discharged into the Ruacana town council sewer system • In the event of a failure or overflow of the waste water drains, an actions should be implemented to minimise the sewage discharged into the environment. • Preventative and corrective maintenance shall be conducted on pipes conveying the wastewater. • Discharge of the waste water into the environment shall be prevented at all cost. • The waste water generated at the campsite shall be discharged into the town council sewer system. • Information posters shall be placed at different locations of the lodge to warn visitors against environmental pollution including intentional wastewater release into the environment. 	Lodge manager SHEW Section
Hazardous Substances	Minimise the risk of impact to the environment through safe storage, handling use and disposal of	<ul style="list-style-type: none"> • Drip trays must be available to contain accidental spills. • All hazardous substance must be stored in original containers as defined in the Material Safety Data Sheets (MSDS). • Each Hazardous substance should be supplied with an MSDS. • Containers should be clearly marked to indicate contents, quantities and safety requirements. 	Lodge manager

	hazardous substances	<ul style="list-style-type: none"> • Hazardous substances must be handled, stored and disposed in accordance with the MSDS • Ensure all employees are trained on the handling and storage of hazardous substance. • Use and /or storage of materials, fuels and chemicals which could potentially leak into the ground must be controlled in a manner that prevents such occurrences. • All fuel storage tanks should be bunded. The bunded area must be of sufficient capacity to contain a spill/leak from stored containers, 110% of the total volume. • Adequate firefighting equipment shall be made available at all hazardous storage areas. • No smoking shall be allowed within the vicinity of the hazardous storage area. • Designated smoking areas should be made available for employees and guests • Symbolic safety signs should be placed at hazardous substance storage area 	
Pest and weed management	to minimise the impact of pesticide and herbicide application on the environment	<ul style="list-style-type: none"> • Only registered pesticide and herbicides should be applied • The application should be done under the supervision of a pest control officer • The application should be done in accordance with the MSDS and herbicide/pesticide manufacture's instruction. 	

Emergency procedure	Enable a rapid and effective response to all types of environmental Safety and health emergencies	<ul style="list-style-type: none"> • Emergency numbers to be readily posted on a notice board on site. • NamPower emergency procedures to be consulted in case of emergency. 	SHE representative
Prevention of disease	To minimize the spread of HIV/AIDS	<ul style="list-style-type: none"> • Support awareness raising campaigns to be conducted on various topics associated with HIV/AIDS. Employees to be encouraged to do voluntary HIV testing. HIV results to be kept confidential. 	Lodge manager SHEW Section

5. MONITORING AND AUDITING

Environmental inspections and audits must be conducted during the operational phase of the lodge. The environmental inspections and audits conducted at the lodge will cover all management procedures, the requirements of this plan and will be carried out by the NamPower SHEW section. Inspection and audit reports detailing the inspection and audit results shall be prepared by the SHEW section and communicated to the lodge Manager. Records of inspection and auditing report shall be kept and will be made available during inspection and audits.

3 6. NON-COMPLIANCE AND GRIEVANCES PROCEDURES

The lodge Manager shall ensure that the employees and external service providers comply with the requirements outlined in this EMP. In the event of non-compliance the following recommended process shall be followed:

- Non – compliances will be identified during inspections or audits carried out by the SHEW Section and reported to the lodge Manager for corrective actions.
- lodge Manager shall notify the employees about the non-compliance
- Corrective and preventative actions must be implemented on an agreed timeframes
- Follow – up inspections shall be conducted to assess whether the corrective and preventative actions were implemented effectively

Managing complaints raised by the stakeholders during the operation of the lodge is of utmost importance. A register must be kept at the lodge to record complaints from the public and stakeholders. Complaints and grievances from the stakeholders should be handled in a fair and timeous manner.

7. RECORD KEEPING

Record keeping is important for the effective functioning and implementation of an EMP. A record keeping system must be established to ensure adequate control of updating and readily

availability of all documents required for the effective functioning and implementation of the EMP. EMP documentation to be kept for record keeping include but not limited to:

- A copy of an EMP
- EMP implementation activities
- Awareness training records
- Induction records
- Audit and Inspection reports

8. TRAINING

Environmental awareness training and capacity building of all operational employees and contractors involved in the EMP is key. All those responsible for the management, implementation and operation of any aspect of the EMP shall be adequately trained for their roles. Training records shall be maintained at the lodge, for each employee in order to provide evidence for auditing/inspection purposes.

9. REVIEW AND UPDATE OF THE EMP

In order to ensure effective environmental performance, the SHEW section shall review and update the EMP every three years. The EMP shall be reviewed to evaluate environmental controls and procedures to make sure they are still applicable to the activities being carried out. When reviewing, the environmental team should consider all the non-compliances reported, corrective action reports and all the data collected onsite.

10 CONCLUSION

All management measures and legal requirements outlined in this EMP should be implemented in order to ensure environmental compliance and protection by all parties undertaking the operational activities. This will ensure that potential negative impacts are identified, avoided or mitigated.