Environmental Management Plan
(EMP)

To Support an Application for an **Environmental Clearance Certificate (ECC)** to Permit a Gravel Extraction from a Location situated within the Windhoek Municipality

Windhoek
Khomas Region

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APP007292

Final Report

May 2026

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INFORMATION SHEET	
Project Title Name	An Environmental Management Plan (EMP) Report in Support of an Application for an Environmental Clearance Certificate (ECC) to Permit Gravel Extraction from a Gravel Resource Situated within the Local authority of Windhoek. Windhoek Khomas Region
MEFT Application No.	**APP-007292**
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Report Status	Final
Report Date	May 2026

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ABBREVIATIONS

TERM	EXPANSION
amsl	Above Mean Sea Level
CoW	City of Windhoek
EC	Environmental Commissioner
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act (Act No. 7 of 2007)
EMP	Environmental Management Plan
EMS	Environmental Management System
ha	Hectares
IAPs	Interested and Affected Parties
km	Kilometer
KRC	Khomas Regional Council
m^2	Square meters
m^3	Cubic meter
MEFT	Ministry of Environment, Forestry and Tourism
MIME	Ministry of Industries, Mines and Energy
MSDS	Material Safety Data Sheet
NamRa	Namibia Revenue Authority
NSI	Namibia Standards Institute
OEC	Office of the Environmental Commissioner
PPE	Personal Protective Equipment
PPM	Parts Per Million
PV	Photovoltaic
SANS	South African National Standards
SME	Small and Medium Enterprises
SSC	Social Security Commission
STC	Shifengula Trading CC (the Applicant)
VAT	Value Added Tax
WGBCL	Windhoek Green Belt Conservation Landscape
WHO	World Health Organisation

DEFINITION OF TERMS

Term	Expansion :
Aggregate	Aggregate is defined as granular raw materials consisting of gravels, crushed stones, recycled concrete stones, building and plaster sand. Primarily, aggregates are used in the manufacturing of construction products which in turn are used widely in the built environments and road transport infrastructures. When using a square sieve with an aperture of 4.75 mm, 90% of sand will pass through a square sieve whilst at least 90% of coarse stone will be retained by such a sieve. The coarse stones retained on the sieve will constitute aggregates.
Anthropogenic Impact:	Human impacts on the environment which include changes to the biophysical environments, ecosystems, biodiversity and natural resources caused directly or indirectly by human activities including global warming, environmental degradation, etc.
Biodiversity:	The variability among living organisms from all sources including terrestrial marine and other aquatic ecosystem and ecological complexes which they are part of.
Cumulative Impact	In the context of mining, means the impacts of mining activities which in themselves may not be significant but may become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertaking in the area.
Decommissioning:	The process which begins after termination or cessation of mining activities or mineral processing and ends with closure. It involves, amongst others, the removal of unwanted infrastructures, making safe of the dangerous excavations and surface restoration so as to minimise the adverse environmental impacts of mining activities remaining after cessation of operation.
Environment:	All physical, chemical and biological factors and conditions which influence an object and or organism. It is also defined as the surroundings within which human beings exist and is made up of the land, water, atmosphere, plants and animal life (micro and macro) including interrelationships between the factors and the physical or chemical conditions that influence human health and well-being.
Environmental Impact:	Environmental impact is any change to the environment whether adverse or beneficial, wholly or partially, resulting from an organization activities, products or services.
Environmental Management Plan (EMP):	A working document on environmental and socioeconomic mitigation measures which must be implemented by several responsible parties during all phases of a proposed development.
General Waste	Means any waste generated on or at any premises used - (a) for residential purposes, and includes agricultural properties and small holdings; or (b) as public and/or private facilities and institutions, but does not include garden waste (unless specifically determined or authorised by Town Council subject to any conditions or limitations the Council may impose), bulky waste, business waste, builder's waste, industrial waste, hazardous waste and health care risk waste.
Gravel Reserve:	A reserve is that amount of the resource which has been quantitatively proven through drilling and other sampling methods for which the level of confidence is high.
Gravel Resource:	The extent of extractable volume is estimated with a low level of confidence, i.e. the resource is only inferred (estimated) from geological evidence and assumptions but has not been verified via drilling and other applicable sampling methods.
Hazardous waste	Means - (a) any waste containing, or contaminated by, poison; (b) any corrosive agent; (c) any flammable substance having an open flash-point of less than 90 degrees Celsius; (d) an explosive or radioactive material and substance; (e) any chemical or any other waste that has the potential even in low concentrations to have a significant adverse effect on public health or the environment because of its inherent toxicological, chemical, ignitable, corrosive, carcinogenic, injurious and physical characteristics;

	(f) any waste consisting of a liquid, sludge or solid substance, resulting from any manufacturing process, industrial treatment or the pre-treatment for disposal purposes of any industrial or mining liquid waste, which in terms of any law, order or directive relating to drainage and plumbing may not be discharged into any drain or sewer.
Industrial waste	Means any waste generated as a result of business, commerce, trade, wholesale, retail, professional, manufacturing, maintenance, repair, fabricating, processing or dismantling activities, but does not include general waste, garden or bulky waste, builder's waste, business waste, hazardous waste or health care risk waste.
Pollution	Means any change in the environment caused by – (a) any waste, substance or matter; or (b) noise, odour, dust or heat, emitted from or caused by any activity, including the storage or treatment of any waste, substance or matter, building and construction, and the provision of any service, whether engaged in by any person or an organ of state if that change has an adverse effect on public health or well-being of people.
Public Participation Process	The process of involving all affected parties in the design, planning and operation of a project. The process requires that the proponents give the parties to be consulted notice of the matter in sufficient form and detail to allow them to prepare their views on the matter. They are also given a reasonable amount of time to prepare their views and an opportunity to present their views to the proponents, who consider the views presented, fully and impartially.
Scoping Process	Scoping is that process of the EIA during which key environmental issues and impacts that have to be addressed are identified, and ultimately defining the scope and focus of the assessment.
Sensitive Area:	A sensitive area or environment is described as an area or environment where a unique ecosystem, habitat for plant and animal life, wetlands or conservation activity exists or where there is high potential for ecotourism.
Sustainable Development	"Development that meets the needs of the current generation without compromising the ability of future generations to meet their own needs and aspirations" –World Commission on Environment and Development (1987). "Improving the quality of human life while living within the carrying capacity of supporting ecosystems" - Caring for the Earth: A Strategy for Sustainable Living, by the International Union for Conservation of Nature (IUCN), the United Nations Environment Programme and the World Wide Fund for Nature (1991).
Waste	Means any substance or matter whether solid, liquid or any combination thereof, irrespective of whether it or any constituents thereof may have value or other use, and includes – (a) any undesirable, rejected, abandoned or superfluous matter, material, residue of any process or activity, product, by-product; (b) any matter which is deemed useless and unwanted; (c) any matter which has been discarded, abandoned, accumulated or stored for the purposes of discarding, abandoning, processing, recovery, reuse, recycling or extracting a usable product from such matter; or (d) products that may contain or generate a gaseous component

1. INTRODUCTION

This is Environmental Management Plan (EMP) is compiled in terms of the Environmental Management Act (Act No. 7 of 2007) for the proposed gravel exaction to be undertaken on Erf 320 of Farm Windhoek Town and Townlands No. 31 in the Khomas Region. The project promotor is Shifengula Trading CC (STC, for short). The EMP should be read in conjunction with the Environmental Impact Assessment (EIA) conducted into the envisaged activity.

The objective of the EMP is to serve as a standalone tool to manage and safeguard the environmental impacts associated with the aforesaid activity. The EMP is also prepared to support the application for an Environmental Clearance Certificate (ECC) to be submitted to the Ministry of Environment, Forestry and Tourism (MEFT).

The underlying aim is to ensure that the environmental impacts emanating from the gravel extraction (APF) which operation entails the mining of gravel, processing of such gravel, transport and distribution of final products to end users, are managed, mitigated and kept to a minimum. In this regard, guidelines have been provided according to which compliance monitoring can be performed during the lifespan of APF.

1.1. Purpose

It is the purpose of this EMP to provide clearly defined actions that should be implemented by the proponent during the gravel extraction activities. The EMP is a dynamic document, flexible and responsive to new and changing circumstances i.e. it should be updated as and when required. Any substantive changes to the current scope of gravel production, i.e. upgrading of sand by washing it mechanically, will require the amendment of the EMP. Copies of this document should be kept at the site office for ease of reference.

1.2. Acceptance of the EMP

The acceptance of this EMP by the Environmental Commissioner will confer a legal obligation to STC to comply with the mitigations measures recommended and presented in this document. Should STC fail to comply with such requirements, it is deemed a contravention of the Environmental Management Act (Act No. 2 of 2007) and as such is criminally prosecutable.

1.3. Objectives of the EMP

The implementation of this EMP will be a recurring process that converts mitigation measures into actions and through monitoring, review and corrective actions, ensures conformance with the overall aims and objectives. These objectives are to:

- Ensure compliance with the conditions of the ECC once the same has been granted for the gravel operation by the EC.
- Implement practical measures to prevent, minimize, mitigate or rehabilitate areas impacted by the gravel extraction operation.
- Conserve significant aspects of the biophysical and social environments.
- Protect human health and ensure safety of the employees and individual members of the general public when visiting the premises and during the delivery of gravel to end-users.
- Develop workable methods which ensure that the gravel operation is carried out in manner which is technically sound, socially acceptable and environmentally sustainable

2. ROLES AND RESPONSIBILITIES

The parties listed in the Table 1 below are expected to fulfill various roles and responsibilities to ensure the effective implementation of this EMP during the lifespan of the gravel operation.

Table 1: Roles of the Parties

Party	Roles and Functions or Responsibilities
Environmental Commissioner (EC) of the Office of the Environmental Commissioner (OEC)	Some of these are: • Granting of the ECC • Enforcing compliance with the terms of the ECC & EMP • Reviewing this EMP and any future revisions thereof. • Undertaking site audits and inspections at their discretion. • Reviewing annual audit reports • Reviewing serious onsite incidents and accidents reports • Enforcing legal mechanisms for contraventions to the EMP and ECC.
City of Windhoek (CoW) **Environmental Officer Planning (EOP)**	Some of roles are to: • Ensure that the commitments made in the approved EMP are complied with by the promotor at all times. • Conduct site inspections and environmental audits at their discretion of the gravel extraction operation. • Protect the natural, social, and economic environment from potential detrimental impacts caused by gravel extraction. • Monitor and control activities within the municipal area to ensure adherence to local, national, and international environmental legislation, policies, and conventions. • Enforce compliance of the EMP to ensure that the development is conducted in an environmentally acceptable and safe manner.
Shifengula Trading CC (STC) or the Promotor	Amongst the roles of STC or the promoter, are the following: • Comply with the provisions as outlined in this EMP. • Comply with the conditions of the ECC, once the same has been granted. • Ensure that all prospective employees who are hired to work at the gravel extraction site are trained and inducted on the content of this EMP. • Report any significant environmental incidents or accidents and emergencies to the relevant authorities. • Perform internal audits of the EMP implementation annually • Rehabilitate all mined out areas. • Maintain a high standard of housekeeping rules.

3. ARRANGEMENT OF THE EMP

The EMP has been arranged to cover the environmental aspects under these headings:

- Provision for Operational Infrastructure and Accessories
- Gravel Extraction (Mining) and Processing
- Generic Environmental Aspects
- Socio-economic Environmental Aspects
- Aspects Related to Monitoring, Reporting and Final Rehabilitation

3.1. Provisions for the Infrastructures and Accessories

STC will have to establish operational infrastructure and accessories as listed below. An access road to the project site has to be graded and widened to accommodate the heavy machinery and tipper trucks that will be used in the operation. Mitigation measures have been provided with respect to establish, to maintain and to rehabilitate such support infrastructure on cessation of gravel production.

- Access road to the Gravel Extraction Site
- Establishing of the Gravel Extraction Facilities
- Establishing of Support Services & Infrastructure (machine parking, maintenance/service yard, site office, onsite sanitation, tools & equipment storage, etc.)

Table 2: EMP for the Erection of Support Infrastructure

1. Establishing the Access Road to the Site • Select the route which allows for the minimum removal of bushes and trees. • The proposed road should be surveyed and properly demarcated before construction starts. • Existing old internal farm routes should be followed where those exist, as far as practically possible. • Sensitive areas such as watercourses and steep gradients should be avoided, as far as is practicable. • No more than two routes should be constructed to the gravel extraction site.	
Timing	**Prior to starting with gravel extraction**
Party Responsible	**Promotor / or as delegated by the Promotor**
2. Establishing of the Gravel Extraction Facilities • Select the area and demarcate the minimum reasonably required piece of land which accommodates the current and future needs of the operation. • The site selected should involve the least removal of vegetation, bush and plants. • Take the predominant wind direction into account. • Avoid sensitive areas such as watercourses, raised areas, etc. • Avoid cutting down mature trees • The site selected should be fenced in with access controlled via a single lockable entrance • Where appropriate support infrastructures (workshop area, equipment storage yard, site office, parking for vehicles and trucks, etc.) should be established on the same premises as the Aggregate Processing Facility. • Try to locate the APF in such a way that it is out of sight of the people using the single-track gravel road on the farm.	

Timing	Prior to starting with gravel extraction
Party Responsible	Promotor / or as delegated by the Promotor

3. Establishment of Support Infrastructure (Laydown Areas, Workshop, Site Office, etc.)

- Where feasible locate support infrastructures on the same premises as for APF
- The storage area should be securely fenced and all hazardous substances such as: fuel, oil, lubricants, oil filters, etc. stored in there.
- Repair and servicing of machinery & equipment should take place in such area.
- Drip pans or thin concrete slab or facility with PVC lining should be used to prevent oil leaking into the ground.
- No vehicle may be repaired at any other location but in the maintenance yard.
- Access to the maintenance yard must be controlled and if possible padlocked so as to avoid theft and vandalism

Timing	Prior to starting with gravel extraction
Party Responsible	Promotor / or as delegated by the Promotor

4. Refuelling of Machines & Vehicles on Site

- Adequate fuel (diesel) can be kept on the premises with the permission of the line ministry
- Refueling should be carried out on a hard impermeable surface or over drip pans to ensure spilled fuel is captured and cleaned up.
- Defective hoses, valves and containment structures should be promptly repaired.
- Refueling of machinery at working sites should be done from a suitable container, such as a jerry can container or fuel bowser.

Timing	Check daily and report weekly throughout the project lifespan
Party Responsible	Promotor / or as delegated by the Promotor

5. Handling of Hazardous Products

- Suitable covered receptacles must be available at the workshop for the temporary safekeeping of hazardous wastes (oil filters, old batteries, etc.)
- All used oils, grease and hydraulic fluids must be placed in leak-proof containers and disposed of at a licensed facility
- Any oil spills should be collected and disposed of
- Under no circumstances should hazardous wastes be disposed of on the property

Timing	Check storage areas daily, clean up immediately after a spill or leak
Party Responsible	Promotor / or as delegated by the Promotor

6. Operation and Maintenance of Machines, Vehicles & Equipment

- Ensure machineries and equipment used in the operation are properly maintained and regularly serviced (defective silencers should be replaced, etc.)
- Equipment should be operated at the minimal power ratings to undertake the required task;
- Machineries must be switched off when not in use.
- Unnecessary hooting, idling & revving should be avoided.
- All machine operators must be well trained and well acquainted with the provisions of this EMP
- Earthmoving machinery and tipper trucks should be operated by licensed operators.
- Tipper trucks used on public roads must be licensed, roadworthy and fitted with amber flashing lights
- Under no circumstances may tipper trucks be overloaded.
- Truck operators should wear reflective protective vests, hard hats and safety boots.

• Any complaint received related to machinery or equipment must be immediately investigated and corrective action taken	
Timing	Duration of the project lifespan
Party Responsible	Promotor / or as delegated by the Promotor
7. Maintenance of the Access Road and Internal Routes • Constructed access roads should be adequately maintained so as to: o minimise dust o eliminate incidents and accidents o avoid vehicle breakdowns and costly repairs • Off-road driving must be prohibited • Operators must comply with speed limits and other road regulations	
Timing	Maintain throughout the project lifespan
Party Responsible	Promotor / or as delegated by the Promotor
8. Sanitation Facilities • Provide adequate sanitation on the premises with clean drinking water and toilet facilities for use by the employees and the clients visiting the operation.. • If some employees will be staying on site, suitable washing facilities should be provided. • Maintain a high standard of hygiene & housekeeping • Effluent water from washing facilities should be disposed of in a properly constructed drain. • Under no circumstances should employees use bushes & plants as toilet facilities.	
Timing	Clean daily & check and inspect cleanliness weekly
Party Responsible	Promotor / or as delegated by the Promotor

3.2. Gravel Extraction/Mining, Handling and Rehabilitation

Gravel will be excavated or mined from two zones – the In-stream Zones comprising of the young sediments deposited along the banks of river stream and the Off-Channel Zones comprising of the older gravel deposited away from river streams. The Off-Channel resource is the hugest resource.

Mitigation measures have been provided with respect to the following activities outlined in Table 2:

Table 3: EMP for Gravel Extraction/Mining, Handling and Rehabilitation

1. Demarcation of the Gravel Zones • Gravel zones should be identified, demarcated and clearly marked with visible devices, i.e. painted poles. • Each zone should be surveyed and any protected tree species inside such zones identified and recorded. • The markings identifying zones should be maintained throughout the period when such zones are being mined. **2. Gravel Extraction** • A mining layout plan showing identified gravel zones with estimated gravel volumes and existing infrastructures should be prepared and kept at the site office. • Extraction or mining of gravel must only take place within the confines of identified gravel zones. • When mining from the 'In-stream Zones', a layer of gravel of approximately 0.5 m thick should remain on the bedrock. • When mining from the 'Off-Channel Zones', leave a small amount of the sediment on the bedrock to facilitate easier rehabilitation. **3. Handling of Topsoil**

• Topsoil down to a depth of 0.3 m must be removed from all areas where physical disturbances of soil surface will occur. • All topsoil removed, must be kept on stockpiles with heights not exceeding 2 m. • Topsoil stockpiles should be made on the high ground side of the gravel extraction area within the demarcated gravel zone. • Topsoil should be preserved for future rehabilitation of the mined out areas and must not be used for the maintenance of access and internal routes. • Vegetation regrowth should be allowed on the stockpiles. • Ensure that topsoil on stockpiles does not get contaminated by non-indigenous, alien vegetation and plants. **4. Rehabilitation** • Mined out zones should be rehabilitated by backfilling with any remaining oversized boulders. • The topsoil stored elsewhere should be backfilled last over the mined out zones and vegetation regrowth monitored over a time period. • If reasonable assessment indicates that re-establishment of vegetation is relatively poor, the soil can be analysed and any deleterious effect on the soil arising from mining activities corrected and the area seeded with a vegetation seed mix.	
Timing	Throughout the gravel extraction process
Party Responsible	Promotor or as delegated

3.3. Generic Environmental Mitigation Measures

The following environmental aspects have been treated as generic. Mitigation measure have been proposed with respect to the following:

- Waste Handling
- Open Fire and Fire Prevention
- Archaeological, Heritage and Cultural Remains
- Health and Safety
- Illegal Hunting & Poaching of Livestock and Game
- Environmental Awareness Training
- Social-economic Impacts

Management measures for the generic environmental impacts are presented in Table 4 below:

Table 4: EMP for Generic Environmental Mitigation Measures

1. Waste Handling • Develop an in-house waste handling policy which includes keeping various types of waste separate. • Non-biodegradable and recyclable waste (plastics, cans, bottles, packaging materials, metal scraps, etc.) should be stored in containers and disposed of on a regular basis to the waste facility of CoW. • Organic waste (food items, potatoes skins, etc.) should be stored in bins with secure lids and not fed to wild animals • Liaise with waste recycling companies in Windhoek to collect recyclable wastes (papers, plastics, etc. • Avoid wind dispersal of papers and plastics as it results in visual nuisance. Plastics can be fatal to animals when confused. • Maintain a high standard of housekeeping. • Hazardous wastes should be handled as described above.

- Scrap metals should be offered to scrap companies for sale.
- Under no circumstances should waste be buried on the property.

2. Open Fire and Fire Prevention

- Open fire may be made at designated areas only.
- Fire-fighting equipment should be readily accessible and kept in a good working order.
- No smoking should be allowed in areas where there is a fire hazard, i.e. near fuel storage area.
- Fire emergence procedures should be established for the camp site
- In case firewood is used for cooking purposes, a fire-break should be cleared around the perimeter of the camp site
- No trees should be felled or wilfully damaged for purposes of obtaining firewood
- Dead trees may be harvested for firewood but with the permission of the Operations Manager. Such harvested firewood should be consumed on the premises only and must not be transported outside the farm for sale to third parties

3. Archaeological, Cultural And Heritage Remains

Remains of human species 'carbon dated' as being 3 000 years ago have been discovered during maintenance work on a neighbouring farm in 1964. In the event that any remains of cultural interests are uncovered during the gravel mining operation, the following guidelines should be followed:

3.1 'Chance Find Procedure'

- If operating a machine stop work immediately
- Inform the Supervisor or Operations Manager ;
- Demarcate the site with plastic warning tape;
- Cease any works in the immediate vicinity
- Determine GPS position of the place if possible;
- No item(s) must be removed from the site
- Operations Manager must inform the office of National heritage Council (NHC) and request written permission to remove findings from work area; and
- Recover, pack and label findings for transfer to the National Museum as guided by NHC

3.2 Human Remains:

Should human remains be found, follow these guidelines:

- Apply the chance find procedure as described above;
- Notify the nearest Namibia Police Charge Office
- Schedule a field inspection with an archaeologist to confirm that remains are human;
- Advise and liaise with the NHC and the Namibian Police
- Remains to be retrieved and transported by the Police either to the National Museum or the National Forensic Laboratory in Windhoek
- Work must only resume on the same site, once the remains have been successfully retrieved by the Namibian Police.

4. Health and Safety

A health and safety plan must be developed for the operation which should as a minimum address the following aspects:

4.1 Road Safety:

- Access and haulage road should be properly maintained.
- All vehicles should be operated on existing roads and no off-road driving should be allowed.
- Vehicles used in the operation and on public roads must be licensed and roadworthy

- All drivers who operate vehicles on and off the mining operations must have valid driver's license and comply with traffic rules & regulations
- Speed limits should be respected and complied with.to reduce dust.
- Trucks should not be overloaded
- Adequate road signage should provide.
- Drivers should be provided with suitable PPEs.

4.2 Safety within Mining Gravel Zones

- Open excavations should be demarcated with danger tapes
- No use of alcohol should be tolerated and offenders should be reprimanded.
- No weapons (knives, guns, etc.) must be allowed in the work place
- Provide a portable toilet if mining area is far from the camp site

5. Good Housekeeping Practice:

- Maintain good housekeeping of the mining area & camp site
- No littering should be allowed
- Apply good waste management with waste storage containers available at both sites
- Discourage use of 'bush' as toilet
- No use of drugs should be allowed
- Discourage foul language amongst the workers

6. Onsite Fuel Storage

Fuel (diesel) can be stored in bulk in a surface mounted tank on the premises provided authorization is granted by the line ministry. The diesel tank must be erected on a designated area and on a smooth impermeable surface (plastic or concrete) base with an earth bund. The floor of the bund must be sloped towards an oil trap or sump to enable any spilled fuel and or fuel-soaked water to be removed, or the bunded area must be covered.

Fuel Security: The fuel tank must be fitted with lids which are kept firmly shut at all times. The Operations Manager must keep the fuel under lock at all times and the key kept in the office. Smoking and naked flames must not be allowed in the vicinity of the fuel storage area.

Signage: Symbolic signage clearly depicting "No Smoking" "Danger" & "No Naked Lights" must be clearly displayed and must conform to local standards.

Fire Safety: Any fuel dispensing pump (electrical or fuel-driven) must be equipped and positioned so as not to cause danger of ignition of the product. Suitable and adequate firefighting equipment should be provided at the site.

Fueling: Earthmoving and equipment fueling should be undertaken on a hard impermeable surface or over drip pans to ensure spilled fuel is captured and cleaned up. Defective hoses, valves and containment structures should be promptly repaired. Refueling of earthmoving machines working on the saltfield should be done from a suitable mobile diesel bowser.

7. Illegal Hunting or Poaching of Livestock and Game

There livestock (cattle) and wildlife on the farm and on the neighbouring farms and the following precautions are proposed:

- Dogs and cats are prohibited on the premises unless permitted by the landowner
- No handguns are permitted on the camp site
- No snares or trap wire devices may be used to catch wildlife
- Employees must report their visitors to their Supervisor before such visitors arrive at the farm
- For ease of security control, it is proposed for employees to have badges with their names on.

- Employees must report any suspicious movements observed on the farm to their Supervisor or Operations Manager
- Poaching is a criminal activity and, if caught, perpetuators can get long jail terms

8. Environmental Awareness Training

It is imperative that all potential employees hired to work at Aggregate Production Facility are given an environmental induction training workshop which, as a minimum should include the following aspects.

- Basic understanding and appreciation of the fragile environment in which the gravel operation is located and the consequences of neglecting to protect the environment.
- The role and responsibilities of the employees and management to complying with the EMP.
- The significance of the mitigation measures proposed in this EMP
- The significance why reptiles including snakes may not be killed
- Explain the problems associated with poor waste management

Timing	Duration of the project
Party Responsible	Promotor or supervisor (as delegated by Promotor)

3.4. Socio-Economic Environmental Aspects

In this section, impacts have been considered on three aspects which the aggregate production operation will make on the socio-economic environments. These are:

- Employment Creation
- Labour & Working Conditions
- Social and Community Impacts

Table 5: The EMP with Respect Socio-economic Environment

1. Employment Creation

- Adopt a 'local first policy' when hiring workers for non-skilled positions at the aggregate operation.
- Hire employees from the local community without discrimination on the basis of gender, race, language, background, religion or political affiliations
- People from marginalized communities (i.e. Sun people) should also be considered and offered employment
- People with disabilities should likewise be considered for suitable employment opportunities.
- Ensure that the recruitment of employees is done in a transparent manner and should be gender and disability inclusive, i.e. qualified women should be given an equal opportunity where possible. The recruitment process must be formal and organized. Preference should be given to residents of Henties Bay.

Employees' Wellbeing: Develop a policy on social ills to deal with aspects related to drug and alcohol abuse by the employees. Initiatives should also be made with regard to raising awareness on the danger of unsafe sex practices which lead to HIV/AIDS and other sexual transmitted diseases.

2. Labour & Working Conditions

2.1 Employment Contract: The terms and conditions of each employee should be clearly spelled out in a written contract with a copy held on the file at the office and one copy given to the employee. The contract should amongst other things spell out job specifications, working hours and remuneration.

2.2 Trade Unions: Allow the employees to exercise their rights to join and belong to a trade union of their choice. Allow each employee charged with a misconduct the right to be represented during a disciplinary hearing

2.3 Records: Proper records should be kept with respect to the number of people employed whether fulltime or part-time, contractors hired, payments made to contractors, salaries and wages paid to full-time and part-time employees, number of non-locals hired and the salaries paid to non-Namibians, etc.

3. Social and Community Impacts **3.1 Goods & Services:** Source and procure goods and services required for the aggregate operation from local suppliers (spare parts, fuel, PPEs, stationery, etc.) where applicable. **3.2 Complains From The Community:** Engage with the community and provide information in a transparent and open manner so as to manage their expectations. Any complain and or grievance received from the community should be addressed timeously. **3.3 Corporate Social Responsibility:** Contributions to the community should be reported on in the media so as to enhance the profile of the company to the general public. Membership of the Namibia Chamber of Commerce and Industry (NCCI) is recommended. **3.4 Logbook:** A logbook should be kept at the gate of the operation where all vehicles visiting the operation are recorded, the time of entry, exit, the type of vehicle, and its destination. This will give an indication of the number of vehicles visiting the operation.	
Timing	Duration of the Project
Party Responsible	Promotor or otherwise as delegated

3.5. Monitoring, Reporting and Final Rehabilitation

Periodic monitoring and inspections of the gravel operation has to be performed from time to time with monitoring and inspection reports submitted to MEFT at least bi-annually. A final rehabilitation treatment is expected to be made at the end of the gravel mining operation. This also applies in the event of the operation having to cease as a result of unfavourable economic circumstances, i.e. collapse of the construction industry.

Table 6: The EMP on Monitoring and Rehabilitation

1. Monitoring & Inspections • Carry out regular monitoring of all the environmental management measures and components in order to ensure that the provisions of the EMP are complied with. • Visual inspections and assessments of areas prone to soil erosion should be done before the rainy season and soon after the rain period. • Any repair work deemed necessary to minimise soil erosion should be done before the onset of the rain. • It is important that mining gravel layout plans are updated regularly including remaining gravel volumes. • An assessment of environmental impact that were not properly addressed or were unknown during the time when the EMP was compiled should be carried out and added as correction action **2. Final Rehabilitation** Since gravel mining is likely to last for over a number of years, a more detailed rehabilitation programme should be drawn up close to that time. • A preliminary list of items to be removed at that time will have to be drawn up and will include, amongst others, the following: o Infrastructures – access road, aggregate processing plants, maintenance yard, camp site, etc. o Equipment – scrap metals, tyres, rubble, conveyor belts, etc. o Hazard Waste – old batteries, oil filters, fuel filters, etc. • Waste materials of any description must be removed from the site and disposed of at a recognised landfill facility. • Final completion must be inspected by MEFT officials.	
Timing	Duration of the Project
Party Responsible	Promotor or otherwise as delegated

4. CONCLUSIONS

Although very attempt has been made to address all possible potential mitigation measures in this document, the EMP should be considered as a day-to-day management tool, which sets out the minimum environmental and social standards that are required, to minimise the negative impacts and maximize the positive benefits of the envisaged gravel extraction.

The EMP should be reviewed on an on-going basis and any changes or amendments made communicated to MEFT. Based on the observations made during several site inspections it is incumbent upon the proponent, once all operational infrastructure and accessories have been established, to make a careful assessment of whether any modifications to the mitigation measures, as proposed in this EMP may be required, in order to improve the overall efficiency and applicability of the EMP to the prevailing operational circumstances.