

APP- 1240

ENVIRONMENTAL MANAGEMENT PLAN (EMP)



EXISTING FUEL RETAIL FACILITY

OKATANA SERVICE STATION

RENEWAL OF ECC

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1. INTRODUCTION and BACKGROUND

This Environmental Management Plan (EMP) serves as a managing tool for the operation and possible maintenance and decommissioning phase of the Okatana Service Station (fuel retail facility) at Okatana. The EMP is developed to outline measures to be implemented in order to minimise adverse environmental degradation associated with this development.

The EMP serves as a guiding tool for the owner, contractors and workforce on their roles and responsibilities concerning environmental management on site, and also provides an environmental monitoring framework for all project phases of the development. This environmental management plan aims to take a pro-active route by addressing potential problems before they occur. The EMP acts as a stand-alone document, which can be used during the various phases of the development.

In this report, the *Contractor* refers to Okatana Service Station and its sub-contractors, including fuel supplier (Total Namibia).

The purpose of the EMP is to:

- ✓ Train employees and contractors with regard to environmental obligations.
- ✓ Promote and encourage good environmental management practices.
- ✓ Outline responsibilities and roles of Okatana Service Station and the contractor in managing the environment.
- ✓ Describe all monitoring procedures required to identify environmental impacts.
- ✓ Minimise disturbance of the natural environment.
- ✓ Develop waste management practices.
- ✓ Prevent all forms of pollution.
- ✓ Protect the natural environment.
- ✓ Prevent soil and water erosion.
- ✓ Comply with all applicable laws, regulations and standards for environmental protection.

The construction and operation of the proposed retail facility entails:

- ✓ Construction of buildings and associated facilities.
- ✓ The installation of a new fuel storage tanks.
- ✓ Construction of spill control measures.
- ✓ Installation of associated electrical supply.
- ✓ Installation of reticulation pipelines and associated dispensing points.
- ✓ Transport of fuel supply with road transport tanker trucks.
- ✓ The dispensing of fuel to vehicles.

2. LEGISLATIVE FRAMEWORK

❖ *The Namibian Constitution*

The Namibian Constitution has a section on principles of state policy. These principles cannot be enforced by the courts in the same way as other sections of the Constitution. But they are intended to guide the Government in making laws which can be enforced.

The Constitution clearly indicates that the state shall actively promote and maintain the welfare of the people by adopting policies aimed at management of ecosystems, essential ecological processes and biological diversity of Namibia for the benefit of all Namibians, both present and future.

❖ *Environmental Management Act No.7 of 2007*

This Act provides a list of projects requiring an Environmental assessment. It aims to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and control of activities which may have significant effects on the environment; and to provide for incidental matters.

The Act defines the term “*environment*” as an interconnected system of natural and human-made elements such as land, water and air; all living organisms and matter arising from nature, cultural, historical, artistic, economic and social heritage and values.

The Environmental Management Act has three main purposes:

- (a) to make sure that people consider the impact of activities on the environment carefully and in good time
- (b) to make sure that all interested or affected people have a chance to participate in environmental assessments
- (c) to make sure that the findings of environmental assessments are considered before any decisions are made about activities which might affect the environment

Line Ministry: Ministry of Environment and Tourism

❖ *Water Resources Management Act of Namibia (2004)*

This act repealed the existing South African Water Act No.54 of 1956 which was used by Namibia. This Act ensures that Namibia’s water resources are managed, developed, protected, conserved and used in ways which are consistent with fundamental principles depicted in section 3 of this Act. Part IX regulates the control and protection of groundwater resources. Part XI, titled Water Pollution Control, regulates discharge of effluent by permit.

Line Ministry: Ministry of Agriculture, Water Affairs and Forestry

❖ *Environmental Assessment Policy of Namibia (1995)*

Environmental Assessments (EA’s) seek to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into

the planning process, and that the term ENVIRONMENT (in the context of IEM and EA's) is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.

All listed policies, programmes and projects, whether initiated by the government or private sector, should be subjected to the established EA procedures.

Apart from the requirements of the Environmental Assessment Policy, the following sustainability principles need to be taken into consideration, particularly to achieve proper waste management and pollution control:

✓ **Cradle to Grave Responsibility**

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

✓ **Precautionary Principle**

There are numerous versions of the precautionary principle. At its simplest it provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach should be adopted.

✓ **The Polluter Pays Principle**

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

✓ **Public Participation and Access to Information**

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

Line Ministry: Ministry of Environment and Tourism

❖ **Draft Pollution Control and Waste Management Bill**

The project of Okatana fuel retail facility, only applies to Parts 2, 7 and 8 of the Bill.

Part 2 stipulates that no person shall discharge or cause to be discharged any pollutant to the air from a process except under and in accordance with the provisions of an air pollution licence issued under section 23. It further provides for procedures to be followed in licence application, fees to be paid and required terms of conditions for air pollution licences.

Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.

Part 8 calls for emergency preparedness by the person handling hazardous substances, through emergency response plans.

❖ ***Atmospheric Pollution Prevention Ordinance of Namibia No. 11 of 1976***

The Ordinance prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. A certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled process. Best practice would be to notify the line Ministry about emissions but it is not a legal requirement.

Line Ministry: Ministry of Health and Social Services

❖ ***Hazardous Substances Ordinance No. 14 of 1974***

The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings.

Line Ministry: Ministry of Health and Social Services

3. ENVIRONMENTAL MANAGEMENT PLAN

3.1 Responsibilities for environmental management

Namshingo Investment CC will be responsible for environmental control on site during the construction and operational phase. It is very important a pre-construction (during maintenance) briefing meeting be held to reach an agreement on specific roles of various parties and penalties for non-compliance.

3.2 Training and induction

Namshingo Investment CC is bound to be responsible for ensuring that environmental awareness education of all employees and contractors is done satisfactorily. The facility management should ensure that employees and contractors are made aware of the environmental requirements of the project.

The EMP should form part of the Terms of Reference for all contractors, sub-contractors and suppliers. All contractors, sub-contractors and suppliers will have to sign an agreement to assure that they understood the EMP and that they will comply. All senior staff should familiarise themselves with the full contents of the EMP and its implications. Senior staff is expected to train and assist the rest of the employees on the contents of the EMP.

3.3 Environmental incident reporting

All environmental incidents occurring at the proposed site will be recorded. The incident report will have to include time, date, location, and nature of the incident, extent of the incident, actions taken, and personnel involved.

All complaints received from the neighbouring community should be directed to the manager of Namshingo Investments CC. Management should be able to respond to the complainant within a week (even if pending further investigation).

3.4 Environmental monitoring

Periodic environmental monitoring must be taken on a regular basis. Monitoring should be done in order to ensure compliance with all aspects of the EMP. Findings should be liaised with to all responsible officers as chain command.

3.5 EMP administration

Copies of this EMP shall be kept at the site office and should be distributed to all senior staff members, including those of the contractors.

3.6 EMP amendments

The EMP amendments can only be made with the approval of the DEA. Amendments to the EMP should be liaised to all employees and contractors.

3.7 Non compliance of the EMP

Problems may occur in carrying out mitigation measures or monitoring procedures that could result in non-compliance of the EMP. The responsible personnel should encourage staff to comply with the EMP, and address acts of non-compliance and penalties.

3.8 Environmental Control Officer

The Environmental Control Officer for the site can be an independent environmental consultant (e.g. Matrix Consulting Services) appointed by Namshingo Investment CC to monitor and review the on-site environmental management and implementation of this EMP.

3.9 Site Management

Areas outside this designated working zone shall be considered “no go” areas. The offloading zones must be clearly demarcated when offloading goods to enhance safety around the proposed development.

3.9.1 Access routes and work sites

Passenger vehicles and road transport trucks access the fuel retail facility via the existing C45 main road (Oshakati - Endola road). No new tracks/roads shall be established and only existing roads may be used. Work sites shall be clearly demarcated and road signs erected were needed. The general public should not have access to the work sites during maintenance.

3.9.2 Fire and safety management

The electrical wiring at the facility will have to be approved by a qualified electrician who will issue a Certificate of Compliance for these buildings prior to occupation.

Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations are flammable. If precautions are not taken to prevent their ignition, fire and subsequent safety risks may arise.

No fire, whether for cooking or any other purpose, is to be made at the fuel retail facility during any of the three phases (construction, operational and decommissioning). The Contractor shall take all reasonable measures and active steps to avoid increasing the risk of fire through activities on site and prevent the accidental occurrence or spread of fire; and shall ensure that there is sufficient fire-fighting equipment on site at all times. This equipment shall include fire extinguishers. The Contractor should be prepared for such events.

The Okatana Service Station management together with contractors shall take all reasonable measures to avoid increasing the risk of fire and shall ensure that there is sufficient fire-fighting equipment on site at all times.

3.9.3 Staff management

The Contractor must ensure that their employees have suitable personal protective equipment and properly trained in fire fighting and first aid.

3.9.4 Waste management

The developer shall remove all waste off-site to designated waste disposal sites. Sufficient bins or containers on-site to store any solid or liquid waste produced should be provided by Okatana Service Station. The bins and containers should be weatherproof and scavenger-proof.

3.9.5 Cement and concrete batching

Concrete mixing directly on the ground shall not be allowed and shall take place on an impermeable surface. All run-off from batching areas shall be strictly controlled, and cement contaminated water shall be collected, stored and disposed of at a licensed suitable waste disposal facility.

3.9.6 Hydrocarbons management

If any spillage occurs, contaminated soil shall be collected in a holding tray or drum and which will then disposed at a licensed hazardous waste site. Any spillage of more than 200 litres must be reported to the Ministry of Mines and Energy as per the Petroleum Products Act.

The Contractor shall take all reasonable measures to prevent surface or groundwater pollution from the release of oils and fuels.

Sufficient space should be left in fuel storage tanks to allow for fuel expansion and to prevent leakage of fuel from the fuel retail facility.

3.9.7 Flood management

The fuel retail facility was designed in a way that it can withstand flood. Storm water management of the site should be a key aspect of flood management on site. All culverts should be kept clean to allow storm water to flow freely.

3.9.8 Management of environmental aspects during all phases of the project

Groundwater

Maintenance/Possible Decommissioning phase	
Description	<p>Groundwater contamination can be caused by leakages and spills of petroleum products (i.e. oil leakages, hydrocarbon fuel, lubricants and grease) from machinery and heavy-duty vehicles during construction and decommissioning phase. Care must be taken to avoid contamination of soil and groundwater.</p> <p>Proper toilet facilities (temporary) should be installed at the construction site and at the camping site or alternative arrangements made. The contractor shall ensure that there is no spillage when the toilets are cleaned or during normal operation and that the contents are properly removed from site.</p>
Proposed Mitigation Measures	<p>Prevent spillages of any petroleum products and chemicals. Use drip trays, linings or concrete floors when evidence of leaks are observed on vehicles or equipment.</p> <p>Proper environmental awareness and remedial response training of operators must be conducted on a regular basis and that the contents are properly removed from site.</p>
Proposed Monitoring	Regular visual inspection.
Responsible Party	Namshingo Investment CC / Contractors.

Operational phase	
Description	<p>Groundwater quality could be impacted through leachate of oil leakages, hydrocarbon fuel, lubricants and grease from vehicles frequenting the facility. Spillages may also occur during fuel delivery and loading of road transport tanker trucks. Overfilling of underground storage tanks may take place. Care must be taken to avoid contamination of soil and groundwater.</p> <p>Run-off from overflowing and/or leaking onsite sewage systems may transport the effluent to groundwater.</p>
Proposed Mitigation Measures	<p>All operational surfaces and fuel storage facilities must be installed with spill containment areas as per the relevant SANS standards (or better). Special emphasis is placed on SANS 10089:1999, SANS 100131:1977, SANS 100131:1979, SANS 100131:1982, SANS 100131:1999. The risk can be lowered further through proper training of staff. All spills must be cleaned up immediately.</p> <p>The presence of an emergency response plan and suitable equipment is advised, so as to react to any spillage or leakages properly and efficiently.</p> <p>A groundwater monitoring system and programme was developed, with the aim of monitoring possible contamination to the water resources. Groundwater monitoring boreholes should be sampled periodically.</p>
Proposed Monitoring	Groundwater monitoring sampling for hydrocarbon pollution.
Responsible Party	Namshingo Investment CC

Surface Water

Maintenance/Possible Decommissioning phase	
Description	<p>Surface water contamination can be caused by leakages and spills of petroleum products (i.e. oil leakages, hydrocarbon fuel, lubricants and grease) from machinery and heavy-duty vehicles during construction and decommissioning phase.</p> <p>Oil Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could be impaired.</p> <p>Care must be taken to avoid contamination of soil and any nearby surface water present in the area.</p>
Proposed Mitigation Measures	<p>Machinery should not be serviced on the facility to avoid spills. All spills should be cleaned up as soon as possible. Hydrocarbon/chemical contaminated soil; clothing or equipments should not be washed within 25m of any surface water depressions (i.e. pans, sonnas, streams and rivers etc).</p>
Proposed Monitoring	<p>Regular visual inspection. Surface water quality monitoring in cases of evident pollution.</p>
Responsible Party	<p>Namshingo Investment CC / Contractors.</p>

Operational phase	
Description	<p>Spillages might occur during fuel delivery and loading of road transport tanker trucks. This may also occur during filling of vehicles and containers. Contaminated soil might pose a risk to surface water.</p>
Proposed Mitigation Measures	<p>All spills should be cleaned up as soon as possible. The presence of an emergency response plan and suitable equipment is advised, so as to react to any spillage or leakages properly and efficiently.</p>
Proposed Monitoring	<p>Regular visual inspection. Surface water monitoring sampling for hydrocarbon pollution.</p>
Responsible Party	<p>Namshingo Investment CC</p>

Air quality (including dust)

Maintenance/Possible Decommissioning phase	
Description	Dust may be produced during the maintenance and decommissioning phase; and might be worsened when strong winds occur. These are expected to be site specific and could potentially pose a slight nuisance to any neighbouring residence and business. In general, the maintenance of the fuel retail facility will have minimal impact on the surrounding air quality.
Proposed Mitigation Measures	Excavation, handling and transport of materials must be avoided under high wind conditions. Dust suppression measures (e.g. dampening with water) may be required from time to time, should dust become a nuisance.
Proposed Monitoring	Regular visual inspection.
Responsible Party	Namshingo Investment CC / Contractors.

Operational phase	
Description	Air quality around the site could be impacted by exhaust fumes from the fleet of transport tanker trucks and vehicles accessing the facility. Hydrocarbon vapours will be released during delivery and dispensing, as liquid displaces the gaseous mixture in the tanks.
Proposed Mitigation Measures	Vehicle idling time shall be minimised by putting up educative signs. All venting systems and procedures have to be designed according to SANS standards (SANS 1929:2011) and placed in a sensible manner. In terms of fuel storage tanks, the vapours will be released through vent pipes on the tanks. Vent pipes should be placed in such a manner as to prevent impact on potential receptors.
Proposed Monitoring	A complaints register regarding emissions/smell should be kept and acted on if it becomes a regular complaint.
Responsible Body	Namshingo Investment CC

Health and Safety

Maintenance/Possible Decommissioning phase	
Description	During the maintenance or possible decommissioning phase, earthmoving equipment will be used on site. This increases the possibility of injuries. The presence of equipment lying around on site may encourage criminal

Operational phase	
Description	The operations of the fuel retail facility can cause health and safety risks to workers on site. Occupational exposures are normally related to inhalation of fuel vapours and physical contact with fuels.
Proposed Mitigation Measures	Ensure the general safety and security at all times by providing day and night security guards and adequate lighting within and around the premises. Operators must be properly trained on safety and health issues of the project. Well stocked first aid box which is readily available and accessible should be provided within premises. Signs such as 'NO SMOKING' must be prominently displayed in parts where inflammable materials are stored on the premises. Workers should be fully equipped with personal protective equipment gear.
Proposed Monitoring	Regular inspection and incident monitoring report evaluation.
Responsible Body	Namshingo Investment CC

Noise Pollution

Maintenance/Possible Decommissioning phase	
Description	Noise pollution due to earthmoving equipment and machinery on site. Disturbance of the nearby residences and business in the vicinity of the construction area will have to be taken into account during construction.
Proposed Mitigation Measures	Sensitize construction vehicles drivers and machinery

Operational phase	
Description	Noise pollution already exists around the site in the form of noise generated from vehicles using main road C45 (Oshakati - Endola road).
Proposed Mitigation Measures	Delivery of fuel products by heavy-duty tankers should be limited to normal working hours (07h00 to 19h00). Loud music from vehicles fuelling up should be restricted.
Proposed Monitoring	Strict delivery and collection times. Observation of on-site noise levels by the Manager or Supervisor.
Responsible Body	Namshingo Investment CC

Waste Generation

Maintenance/Possible Decommissioning phase	
Description	This can be in a form of contaminated soil, building rubble and domestic waste. During Decommissioning, excavated soil from the installation of the underground tank.
Proposed Mitigation Measures	Ensure that no excavated soil, refuse or building rubble generated on site are placed, dumped or deposited on adjacent/surrounding properties or land. Waste must be

Operational phase	
Description	Waste in the form of contaminated soil due to spillage might be generated, but should be prevented through the use of containment areas as provided. Litter may also be produced during the operational phase.
Proposed Mitigation Measures	Waste minimization policy should be formulated by Namshingo Investment CC. Regular maintenance of the oil/water separator. Bioremediation of contaminated soil should be enforced and/or hazardous waste must be disposed at a Hazardous waste site or bioremediated. Removal of sand and other material from containment areas. Rubbish must be collected and disposed at a suitable waste disposal site. Ablution or toilet facilities are connected to the existing main sewage network of the town council of Oshakati.
Proposed Monitoring	Regular visual inspection. Containment area inspections and monitoring of the oil/water separators.
Responsible Body	Namshingo Investment CC

Traffic

Maintenance/Possible Decommissioning phase	
Description	Maintenance and possible decommissioning related activities are expected to have a minimal impact on the movement of traffic along the main road C45 (Oshakati - Endola road). Diversion of traffic or closure of roads is not expected.
Proposed Mitigation Measures	It is recommended that if the need arises for traffic diversion road closure, the contractor should liaise with the

Operational phase	
Description	Traffic around the Service station
Proposed Mitigation Measures	Delivery of fuel products by heavy-duty tankers should be limited to normal working hours (07h00 to 19h00). The borehole close to the COC must be shielded by using painted old tyres to prevent accidents.
Proposed Monitoring	Strict delivery times monitoring. Observation of traffic by the Manager or Supervisor.
Responsible Body	Namshingo Investment CC

Ecological impacts

Maintenance/Possible Decommissioning phase	
Description	The location of the proposed fuel facility is already disturbed with very little vegetation present. The site is free of any conservation worthy terrestrial vegetation and fauna. Impacts on fauna and flora are expected to be zero.
Proposed Mitigation Measures	The site has been previously disturbed. Prevent surface water contamination and disturbance of areas outside the designated working zone.
Proposed Monitoring	Regular site inspection.

Operational phase	
Description	Disturbance or impacts on fauna and flora. Very little impacts are expected as the area is free of vegetation and plant life. The area is already disturbed and earmarked for development.
Proposed Mitigation Measures	Prevent surface water contamination and disturbance of areas outside the designated working zone.
Proposed Monitoring	Regular site inspection.
Responsible Body	Namshingo Investment CC

Overfilling of tanks and vehicles

Operational phase	
Description	Overfilling of vehicles and fuel storage tanks may take place.
Proposed Mitigation Measures	This impact can be reduced by the installation of spill containment areas around the pumps and through proper training of the operators. Proper monitoring of the product levels in the tanks must take place to eliminate overfilling. Proper training of the operators on site is vital.
Proposed Monitoring	Regular inspection of the level of fuel in tanks.
Responsible Body	Namshingo Investment CC / Contractors.

Nuisance Pollution

Maintenance/Possible Decommissioning phase	
Description	Aesthetics and inconvenience caused to person trying to access/exit the site.
Proposed Mitigation Measures	The Construction supervisor should maintain tidiness on site at all times. Take cognition when parking vehicles and placing equipment.
Proposed Monitoring	Regular visual site inspection.
Responsible Party	Namshingo Investment CC / Contractors.

Fire and explosion hazard

Operational phase	
Description	Hydrocarbons are volatile under certain conditions and their vapours in specific concentrations and conditions are flammable.
Proposed Mitigation Measures	There should be sufficient water available for fire fighting purposes. Ensure that all fire-fighting devices are in good working order and they are serviced. All personnel have to be trained about responsible fire protection measures and good housekeeping such as the removal of flammable materials on site.
Proposed Monitoring	Regular inspections should be carried out to inspect and test fire fighting equipment.
Responsible Body	Namshingo Investment CC

Hydrocarbon Spillages

Operational phase	
Description	Fuel spillages might occur during delivery during the operational phase.
Proposed Mitigation Measures	<p>This impact can be reduced by the installation of spill containment areas around the pumps and through proper training of the operators. All spills must be cleaned up immediately.</p> <p>The presence of an emergency response plan and suitable equipment is advised, so as to react to any spillage or leakages properly and efficiently.</p>
Proposed Monitoring	Risk of impact from this can be lowered through proper training of staff and the installation of suitable containment structures.
Responsible Body	Namshingo Investment CC

4. CONCLUSIONS

If the above-mentioned management recommendations are properly implemented, it is anticipated that most of the adverse impacts on the environment can be mitigated. An appointed environmental officer/consultant will need to monitor or audit the site to ensure that the EMP is fully implemented and complied with. The EMP caters for all project phases, but will need to be reviewed during all phases of project, especially when revisions are made to the project development plans.

The Environmental Management Plan should be used as an on-site tool during all phases of the proposed project. Parties responsible for contravention of the EMP should be held responsible for any rehabilitation that may need to be undertaken. It is the Proponent's responsibility to initiate the update of the EMP once it has expired after 3 years from the issue date of the environmental clearance.

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