

ENVIRONMENTAL MANAGEMENT PLAN

PROPOSED BRICK MAKING PROJECT: LISELO COMMUNAL AREA, ZAMBEZI REGION



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1 INTRODUCTION

This document presents the Environmental Management Plan (EMP) to manage the proposed brick making project and activities at a Site that produces bricks. Pumba Bricks & Construction CC (Herein referred to as PBC) has established a brick manufacturing Site at Liselo Communal Area, Zambezi Region. According to the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)) (EMA) and the EIA Regulations (GN. No. 30 of 2012), an Environmental Management Plan (EMP) is required to obtain an Environmental Clearance Certificate (ECC) from the Ministry of Environment and Tourism (MET) for this type of operation to continue.

NYEPEZ Consultants (NC) has been appointed to develop the requisite EMP as part of the application for an ECC. The EMP is to be implemented to mitigate the potential impacts. The contents of this EMP will be binding on all parties who will have a role to play in the Site operations as stipulated in Sections 3 and will be liable for the rehabilitation measures recommended in Section 4.

1.1 PURPOSE OF THE EMP

The aim of the EMP is to ensure that the operations at the brick and paving Site are conducted as per the requirements of the Namibian Environmental Management Act (No. 7 of 2007) and EIA regulations of 2012. The EMP provides a guideline on how the daily activities should be conducted and also provides a monitoring framework to ensure compliance against the recommended mitigation measures to avert any possible negative impacts.

The 2012 EIA Regulations defines a 'management plan' as: "...a plan that describes how activities that may have significant environments effects on the environment are to be mitigated controlled and monitored."

1.1.1 EMP Requirements

Table 1.1: EMP Requirements as outlined in Section 8 of the EIA Regulations Requirement

(j) a draft management plan, which includes –

(aa) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;

(bb) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and

(cc) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.

1.1.2 Compliance to the EMP

Contents of this EMP are tailored in accordance with the prevailing EMA Act and the EIA Regulations. The aim is to provide appropriate management measures that would address the identified impacts that the project could bring about as stipulated in the sand mining questionnaire (see attached). The remedial and mitigation measures recommended for rehabilitation (section 4) remain binding to HBG and all employees. Adherence to the specifications identified herein is highly recommended throughout the lifespan of the facility.

It should be noted that the EMP shall not only be limited to the facility operations, but it encompasses the bigger picture. The document serves as the guiding tool to protecting the overall natural, bio-physical and socio-economic environment at large.

1.1.3 Proponent's Responsibility to the EMP

As the proponent, Pumba Bricks & Construction CC (PBC) shall assume overall responsibility and implementation of the EMP. The Facility Manager holds the mandate and sole responsibility of managing the daily operations and shall ensure that any other person (e.g. Casual Workers) is conversant with the contents of the EMP and adhere to the requirements. A copy of the EMP shall be kept at the Site premises and an induction should be conducted with all new employees prior to commencement of their responsibilities.

1.1.4 Possible adjustments to the EMP

The EMP should be considered as an open-ended document that can be updated or amended subject to new information. This is to allow for adjustments in the document as new information is made available and new mitigations where unforeseen environmental impacts arise.

1.1.5 Legal frameworks that are of relevance to this EMP

In addition to the EMA and the Environmental Assessment Policy, there exists a host of legal and policy documents and guidelines that govern environmental management as indicated in Table 1-2. Pumba Bricks & Construction CC has the responsibility to ensure that NO sand mining activities will be conducted and will be carried out as the company buys Sand and stone crusher at WLD Construction and Civils (see attached letter).

Table 1-2: Relevant legislation and the applicability thereof

| Legislation considered | Aspect of Project |
|--|--|
| Regional Councils Act, 1992 (Act No. 22 of 1992) | The Regional Councils Act legislates the establishment of Regional Councils that are responsible for the planning and coordination of regional policies and development. The main objective of this Act is to initiate, supervise, manage and evaluate development in respective regions. Zambezi Regional Council is an I&AP to this project and they have No objection to the proposed project proposal. Rights shall be reserved to them should they wish to review the EMP. |
| Water Resources Management Act (Act No. 11 of 2013) | This Act provides a framework for managing water resources based on the principles of integrated water resources management. It provides for the management, development, protection, conservation, and use of water resources. Furthermore, any watercourse on/or in proximity to the site and associated ecosystems should be protected in alignment with the listed principles. Construction activities pose danger to surface and underground water resources through the inappropriate use of fuels and lubricants. The proponent shall ensure adequate handling of hazardous substances that could pollute water sources. |
| Pollution Control and Waste Management Bill (in preparation) | This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. The Bill will repeal the Atmospheric Pollution Prevention Ordinance (11 of 1976) (below) when it comes into force. The Bill also provides for noise, dust or odour control that may be considered a nuisance. The Bill would repeal the Atmospheric Pollution Prevention Ordinance (11 of 1976) (below) when it comes into force. Furthermore, the Bill advocates for duty of care with respect to waste management affecting humans and the environment and calls for a waste management licence for any activity relating to waste or hazardous waste management. |
| Atmospheric Pollution Prevention Ordinance (Act No.11 of 1976) | This Ordinance serves to control air pollution from point sources, but it does not consider ambient air quality. Any person carrying out a 'scheduled process' which are processes resulting in noxious or offensive gases typically pertaining to point source emissions have to obtain a registration certificate from the Department of Health. |

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|--|---|
| | Although we do not anticipate the mining activities to generate excessive dust particles, the proponent should implement the necessary mitigation measures to limit dust emissions to air. |
| Public Health Act (Act No. 36 of 1919) | The Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health. The proponent should ensure that the site workers are provided with protective gear to safeguard their wellbeing. The activities should also be conducted in a manner that does not pose any danger to the public and that any emissions which could be considered a nuisance remain at acceptable levels. |
| Labour Act (Act No. 6 of 2007) | The 1997 Regulations relating to the Health and Safety of employees at work sets out the duties of the employer, welfare and facilities at the workplace, safety of machinery, hazardous substances, physical hazards, medical provisions, construction safety and electrical safety. Specifically, no employer shall require or permit an employee to work in an environment that is deemed unfit without protective measures in place. The proponent as the employer should adhere with all the requirements of the Act and the associated Regulations. |

2 PROJECT DESCRIPTION

2.1 PROJECT LOCALITY

Pumba Bricks & Construction CC (PBC) project is located in Liselo Communal Area on 1.5 hectares, in Zambezi region. It is situated approximately 5km from the Katima Mulilo Central Business District (CBD) but situated South west of the Katima Mulilo along the gravel road to Nova military base.

2.2 INDUSTRIAL PROCESS

PBC is an existing brick making project and has been in operation since 2018. The Company intends to relocated from the current facility where they were leasing. PBC was allocated 1.5 hectares of land in the Liselo Communal Area where the company intends to proceed with its brick making activities. The sand and crusher stones used or to be used for brick making will be purchased from WLD Construction and Civils, hence no Sand mining will be conducted by the company onsite.

2.2.1 Infrastructure

A corrugated iron shed ranging will be used as a storage facility and for worker shed on the site. A water supply connection is already installed with a water tap suitable for both human and animal consumption. The site is in process to fence off the project facility with a boundary fence. Vehicles to be used onsite include a tractor and two pick-up bakkies.



Production Cement & water meter on-site



Onsite-brick making slab & tap water



Namibia's economy is highly dependent on a healthy environment however, striking a balance in meeting demands for economic development while maintaining biological and social wellbeing may be a challenge. The current increase in infrastructure development in most Namibian towns has resulted in the high demand for construction material especially bricks. Environmentalists and development sectors should therefore work together and identify synergies to ensure that natural resources are utilised sustainably. Development takes place on land (in the environment) and hence the quest for economic development requires a trade-off with certain parts of the environment in-order for the development to be realized. Meaning, for development to take place, some part of the environment and or the surrounding communities could be affected. However, it is of utmost importance that such impacts are mitigated through effective implementation of the EMP.

2.3 IMPACTS ASSOCIATED WITH THE SITE

2.3.1 Sand Mining

The act of mining sand without authorization as per EMA Act is an illegal practice that is punishable. Thankfully PBC does not excavate sand from the ground, and does not conduct any sand mining. However due to the nature of proposed project activities, as such an Environmental Clearance Certificate should be obtained for brick making activities to proceed.



3 ROLE PLAYERS & RESPONSIBILITIES

This section outlines the roles and responsibilities of the respective key personnel that would be responsible for effective implementation of the EMP.

3.1 Roles and Responsibilities

Assigning responsibilities is necessary to ensure that key procedures are followed. The overall responsibility to ensure that the EMP is implemented rests with the Site Manager, who shall appoint a team of workers to undertake the actual work.

The key role-players for project implementation are;

- a) An Environmental Compliance Officer (ECO) representing MET for environmental auditing and monitoring;
- b) The Site Manager (or assigned representation by PBC)

All instructions and official communications regarding environmental matters shall follow the organisational structure as determined by PBC. The only exception to this rule would be in an emergency (defined as a situation requiring immediate action and where failure to intervene timeously would, result in unacceptable environmental degradation), where instructions may be given directly to any other Site personnel.

Pumba Brick Making Site Manager:

The Site Manager will be responsible for the overall daily operations at the facility and shall be responsible to adherence to the EMP throughout the project span. All team members shall be well-versed with the contents of this document. The following are some

key responsibilities;

- Ensure that the works on-site are conducted in an environmentally sensitive manner and in accordance with the requirements of the EMP at all times. Special care shall be taken to prevent irreversible damage to the environment.
- Ensure that all site staff are adequately informed of the requirements of the EMP pertaining to their site role, and that they have attended an environmental induction session (this session must be in the form of a talk and/or a written code of conduct that is clearly explained and understood by the team).

The Environmental Compliance Officer (ECO):

The ECO in the context of this document refers to the party responsible for the environmental compliance and auditing activities required by the EMP for the lifecycle of the Site. The ECO shall be an independent environmental manager. The ECO shall have adequate environmental knowledge to understand the detailed environmental issues associated with the project, and is to be well versed in the contents of the EMP:

- The ECO shall undertake all monitoring and auditing activities to ensure compliance with the EMP.
- The ECO shall inspect the site at any suitable time during operation.
- The ECO shall compile progress reports following any site inspections, Compliance Reports following any non-compliance, and a Closure report following the conclusion of brick making activities.
- The ECO shall liaise closely with the Site Manager and shall provide guidance on any environmental management issues, incidents or emergencies that are brought to their attention.
- The ECO shall assist in providing recommendations for remedial action in the event of any non-compliances.

3.2 Compliance with Requirements

Environmental management is not only concerned with the impacts on the environment, but also with how such operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standard of the day-to-day operations as well as the wellbeing of the immediate communities.

The development of an EMP for a project is therefore an important and necessary task that is aimed at assigning responsibilities and mitigation options to a variety of activities. However, it can also be an ineffective tool in the absence of auditing or monitoring activities. Auditing or monitoring activities involve the structured observation, measurement, and evaluation of environmental data over a period of time.

3.2.1 Disciplinary Action

The EMP is a legally binding document. Non-compliance with the EMP shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to) financial penalties, legal action, fines and/or suspension of work. The disciplinary action shall be determined according to the nature of the non-compliance or crime, and exact penalties are to the discretion of MET according to the severity of the incident. Measures to be implemented by Pumba Brick Construction cc with assistance of monitoring by the ECO are outlined in the Table 3-1 overleaf:

| Aspect | Management Objective | Management Action | Indicator | Party responsible for implementation |
|---|---|--|---|---|
| Communication with staff | To ensure effective and formal communication throughout the project lifespan. | All employees etc. must be fully aware of the environmental management requirements detailed in this EMP. A copy of the EMP and ECC (when issued) must be readily available for ease of reference to all requirements. The Site Manager and ECO must be informed immediately should environmental or safety issues arise | No avoidable environmental impacts occurring due to miscommunication | All |
| Staff induction training and code of conduct | To ensure that staff are familiar with the management requirements for the Site and conform to the prescribed EIA Regulations Punitive measures and incentives for site staff | All workers must undergo induction training. The induction training must cover environmental awareness and safety at work. Adopt a disciplinary system to address common, minor health and safety misdemeanours of individual staff. | Signed induction attendance Register. A reduction in the number of fines issued daily | Site Manager/ ECO |
| Vehicle Emissions | Reduce unnecessary greenhouse gas (GHG) emissions from poorly maintained or malfunctioning equipment | All vehicles and equipment shall be kept in good working order and serviced as required. Ensure that vehicles do not leak oil. | Physical verification and routine monitoring, record of noncompliance | Site Manager |

| | | | | |
|----------------------------|---|--|--|-------------------|
| Ablution facilities | Reduce health risks and environmental pollution arising from a concentration of human excreta in the environment Verification of adherence to specified requirements | Ensure adequate ablution facilities for site staff. Acts of excretion and urination, other than at the facilities provided, shall be strictly prohibited. | Physical verification and routine monitoring | Site Manager |
| Dust Pollution | Reduce the impacts of dust to employees and the surrounding communities. | Provide dust masks to all affected employees Implement measures to reduce the dust during handling of raw materials. | Physical verification | Site Manager/ ECO |

4 MITIGATION AND REHABILITATION

Socio-economic development is very important for our livelihood and provides services, income and employment opportunities, and hence activities such as brick production are vital and necessary for development. However, such developmental activities should be conducted in a thoughtful and forward-looking manner. In other words, developmental activities should consider the environmental and social wellbeing of the specific activity even beyond the end of the project lifespan. Therefore, site operations should be conducted in a sustainable manner throughout the project lifespan. Rehabilitation is the process of repairing and taking all necessary actions to limit the damage caused by the developmental activity, to minimise potential danger to employees and ensure that land is suitable for other uses or simply to beautify the affected area (so that it does not become an eyesore). Rehabilitation can also be referred to as the measures taken to repair damaged environments (example re-vegetating, removal of unwanted infrastructure, cleaning up pollution etc).

4.1 Designing a Rehabilitation Plan

A rehabilitation plan refers to a set of steps or measures to be taken in-order to ensure that negative impacts associated with the decommissioning of the project at hand are mitigated. This however requires prior planning and integration of rehabilitation activities throughout the project lifespan. Meaning, rehabilitation measures should be taken right from the beginning of the project. The environmental characteristics of an area where a project is located plays a vital role in designing a rehabilitation plan.

5 CONCLUSIONS

The EMP has identified and recommended measures to be adopted by Pumba Bricks Construction cc to manage their Site operations at Liselo Communal Area. It is imperative that a Site of such calibre should conform to the Environmental Management Act of 2007 and EIA regulations of 2012. Compilation of this EMP has incorporated impacts and mitigation measures by incorporating principles of best practice in terms of environmental management. The EMP has provided a platform to ensure that mitigation measures based on the project in its entirety can be implemented. This EMP aims to align and optimize environmental management with any conditions of the environmental clearance, thereby ensuring that identified environmental considerations are efficiently and adequately considered during all stages of development. The EMP details actions to ensure compliance with regulatory bodies and that environmental performance is verified through information on impacts as they occur. Should there be

some amendment to be done on the EMP, such changes must be agreed to by both role players and such changes must be submitted to MET: DEA.