



PROJECT DETAILS
APP-002341

Title	ENVIRONMENTAL MANAGEMENT PLAN FOR THE PROPOSED ESTABLISHMENT AND OPERATION OF A BRICK MANUFACTURING FACTORY AT ONANIME VILLAGE, OKATANA CONSTITUENCY, OSHANA REGION.		
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ABBREVIATIONS

AIDS	Acquired Immuno-Deficiency Syndrome
PR	Proponent's Representative
EA	Environmental Assessment
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GG	Government Gazette
GIS	Geographic Information System
GN	Government Notice
GPS	Global Positioning System
HIV	Human Immuno-deficiency Virus
I&APs	Interested and Affected Parties
NHC	National Heritage Council
Reg.	Regulation
S	Section
TB	Tuberculosis

1 INTRODUCTION

This document constitutes the Environmental Management Plan (EMP) for the establishment and operation of a brick manufacturing factory at Onanime Village, Okatana constituency, Oshana Region.

Real Properties CC is a wholly owned Namibian company with its core business focusing on property development. The company intends to manufacture bricks in order to have a reliable supply chain of bricks and concrete materials. The main aim of the brick making factory is to supply different types of bricks including interlocks and pavers for housing development for the new extension at Ekuku, within the proposed townlands of Oshakati and near-by towns such as Ongwediva. The proponent is in the process of securing a housing development at the new extension at Ekuku, which will consist of approximately 70 houses for both low and middle income categories.

The proponent has through extensive market research found out that Oshakati and the surrounding townships are experiencing shortages of bricks and other concrete materials; this resulted in project delays due to limited supplies of bricks and concrete materials. The demand for bricks and concrete materials in Oshakati and surrounding towns has been prompted by high demand of houses and increase in housing development and for other civil infrastructural developments. The proposed project will have a cumulative economic impact to the village and surrounding towns; the project will employ about 15 permanent employees, two technicians, two machine operators, three heavy duty drivers and eight packers. About ten (10) casual workers from the village will be employed on a seasonal basis to pack the bricks.

The proponent has been granted the parcel of land ear-marked for the project in his private capacity by the Uukwambi Traditional Authority. The lifespan of the project is not yet determined. The bricks will be transported to different construction sites within the townlands of Oshakati and beyond using flat-bed trucks mounted with a crane. The access to the proposed brick making factory will be gained from the existing track which branches out to the west from the D3609, when driving from Oshakati to Omungwelume.

The contents of this EMP will be binding on all parties with defined roles and obligations in the brick making activities as stipulated in all sections including the attached Memorandum Of Understanding (MOU) between the engaging parties.

Real Properties CC, hereinafter referred to as the proponent intends to carry out the following activities:

- **Environmental Management Plan (EMP) for the proposed establishment and operation of a brick manufacturing factory at Onanime Village, Okatana Constituency, Oshana Region.**

The aim of the EMP is to ensure that the brick making activities by Real Properties CC is conducted in accordance with the provisions of the Namibian Environmental Management Act (No. 7 of 2007) and EIA regulations of 2012 (GN: 30). The EMP provides a guideline for brick making and recommends rehabilitation measures on how the activity should be undertaken to ensure compliance against the recommended mitigation measures to avert any possible negative impacts. The EMP also provides a monitoring framework against the recommended mitigation and rehabilitation measures.

The above is a listed activity in terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

In terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), the following listed activities in **Table 1** were triggered by the proposed project:

Table 1: List of triggered activities identified in the EIA Regulations that apply to the project

Activity description and No(s):	Description of relevant Activity	The portion of the development as per the project description that relates to the applicable listed activity
Activity 3.1 (Mining and Quarrying Activities)	The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992.	The project includes brick making activities for construction purposes.
Activity 3.2 (Mining and Quarrying Activities)	Other forms of mining or extraction of any natural resources whether regulated by law or not.	The project includes brick making activities for construction purposes.
Activity 3.3 (Mining and Quarrying Activities)	Resource extraction, manipulation, conservation and related activities.	The project includes brick making activities for construction purposes.

An Environmental Management Plan (EMP) is one of the most important outputs of the EA/scoping process as it synthesises all of the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. The EMP is a living document and maybe considered inconclusive. This implies that, in-addition to the information contained herein, any other relevant information gained during the actual brick making activities, internal monitoring or auditing by MEFT:DEA can be added to the EMP (evolution of activities), and such changes or inclusions will be binding to Real Properties CC and all contractors / sub-contractors. This EMP details the mitigation and monitoring actions to be implemented during the following phases of these developments:

- Construction Phase – the period during which the proponent, having dealt with the necessary legislative and administrative arrangements, appoints a contractor to engage in the construction of the infrastructure for the brick making facility at the project site to be used for the manufacturing of bricks for construction purposes;
- Operational Phase – the continual period during which the brick making facility is functional and maintained at the project site to be used for the manufacturing of bricks for construction purposes.

It should be noted that to date, preliminary engineering designs have been carried out for the development of the infrastructure associated with this development.

The decommissioning of these developments is not envisaged; however in the event that this should be considered some recommendations have been outlined in **Table 6**.

In-addition, the EMP does not only focus and it is not limited to the boundaries of the brick making factory, but it includes the transportation, supply and delivery of the different types of bricks including interlocks and pavers for housing development for the new extension at Ekuku, within the proposed townlands of Oshakati and near-by towns such as Ongwediva. The proponent is in the process of securing a housing development at the new extension at Ekuku, which will consist of approximately 70 houses for both low and middle income categories. This EMP will thus serve as the guiding tool to protecting the natural, bio-physical and socio-economic environment in the surrounding area, beyond the boundaries of the brick making facility. Because, some impacts (e.g. dust, noise, fumes, smell, wastewater, solid waste etc.) are not confined to the brick making facility.

1.1 OVERALL OBJECTIVES OF THE EMP

The following overall environmental objectives have been set for the Real Properties CC brick making activities project at Onanime Village, on a 1 hectare parcel of land, located approximately 12 km north of Oshakati along the D3609 within Okatana Constituency, Oshana Region:

- To act in accordance with national legislation and standards for the protection of the environment.
- To limit potential impacts on biodiversity through the minimisation of the footprint (as far as practically possible) and the conservation of residual habitat within the project area.
- To keep surrounding communities informed of the brick making activities through the implementation of community meetings and constructive dialogue.

- To ensure the legal and appropriate management and disposal of general and hazardous waste (fuel), through the implementation of a strategy for the minimisation, recycling, management, temporary storage and removal of waste.
- To develop, implement and manage monitoring systems to ensure good environmental performance in respect of the following: waste, air quality, noise, biodiversity and rehabilitation.

1.2 Consultations between Real Properties CC and the Uukwambi Traditional Authority

The EIA regulations stipulate that, for new projects, all interested and/or affected parties (I&AP's) should be informed of the proposed activity as part of the EIA Scoping and Public Participation Process (PPP). However, since the brick making site falls within the jurisdiction of the Uukwambi Traditional Authority, it is important that the land custodians are fully consulted during the development of the EMP and application for the Environmental Clearance Certificate (ECC). Therefore, Real Properties CC consulted the Uukwambi Traditional Authority's Office in Oshakati in order to establish a Memorandum of Understanding (MoU) regarding the manufacture of quality bricks, blocks and pavers to supply the housing projects in Oshakati and surrounding towns, in particular the new extension at Ekuku, located at Okatana within the townlands of Oshakati in Oshana Region. (Appendices B - D). The consent letters certify that:

- Uukwambi Traditional Authority was consulted about the project,
- Uukwambi Traditional Authority assessed the project site together with the Real Properties CC.
- Pegged the recommended brick making site area together with the Real Properties CC
- Will ensure that Real Properties CC adheres to the rehabilitation measures recommended in the EMP.

The proponent has been granted the parcel of land ear-marked for the project on his private capacity by Uukwambi Traditional Authority. The lifespan of the project is not yet determined. The bricks will be transported to different construction sites within the townlands of Oshakati and beyond using flat-bed trucks mounted with a crane. The access to the proposed bricks making factory will be gained from the existing track which branch out to the west from the D3609, when driving from Oshakati to Omungwelume.

1.3 STAKEHOLDER MANAGEMENT AND MITIGATION

It is important that channels of communication are maintained over the project life cycle for surrounding community, the general public members, as well as the Uukwambi Traditional Authority, Table 2 shows the stakeholders communication Management and Mitigation Plan.

Table 2: Actions relating to stakeholder communication

Issue	Management commitment	Phase
Understanding who the stakeholders are	Maintain and update, key stakeholders' needs and expectations. Ensure that all relevant stakeholder groups are incorporated.	All
	A representative database would include line ministries, employees, service providers, contractors, indigenous populations, local communities & traditional authorities, NGOs, shareholders, community-based organizations, suppliers and the media.	All
	Ensure that vulnerable groups are also considered in the stakeholder communication process.	All
	Record partnerships as well as their roles, responsibilities, capacity and contribution toward the development.	All
Liaising with interested and affected parties at all phases in the mine life	Devise and implement a stakeholder communication and engagement strategy.	All
Responsibility	Real Properties CC's Management and Environmental Control Officer (ECO)	

2 ROLES AND RESPONSIBILITIES

The proponent (Real Properties CC) is ultimately responsible for the implementation of the EMP, from the construction of the brick making phase to the operational phase. The proponent will delegate this responsibility as the project progresses through its life cycle. The delegated responsibility for the effective implementation of this EMP will rest on the following key individuals:

- Proponent's Representative;
- Environmental Control Officer/ Manager/ Supervisor; and
- Contractor (Real Properties CC).

2.1 PROPONENT'S REPRESENTATIVE

Real Properties CC, the proponent, should assign the responsibility of managing all aspects of this project for all development phases (including all contracts for work outsourced) to a designated member of staff, referred to in this EMP as the Proponent's Representative (PR). Therefore, Real Properties CC should ensure that each and every team (its own staff, contractor / subcontractor) to be engaged in the brick making activity should be given a copy of the EMP and an induction should be conducted with the each team before deployment and commencement of brick making activities at the site.

Each team leader should have a copy of the EMP available at all times and should be able to furnish the EMP to MEFT: DEA or any other law enforcement official during the environmental audit or any other random inspection.

The proponent may decide to assign this role to one person for the full duration of these developments, or may assign a different PR to each of the project phases – i.e. one for the construction phase, one for the brick making & another for the rehabilitation phase. The PR's responsibilities are as follows:

Responsibility	Project Phase
Making sure that the necessary approvals and permissions laid out in Table 3 are obtained/adhered to	Throughout the lifecycle of this project
Suspending/evicting individuals and/or equipment not complying with the EMP	<ul style="list-style-type: none"> • Construction • Brick making • Supply & Delivery
Issuing fines for contravening EMP provisions	<ul style="list-style-type: none"> • Construction • Brick making • Supply & Delivery

2.2 ENVIRONMENTAL CONTROL OFFICER/ MANAGER/ SUPERVISOR

The PR should assign the responsibility of overseeing the implementation of the whole EMP on the ground during the one for the construction phase, one for the brick making & another for the rehabilitation phases to a designated member of staff, referred to in this EMP as the Environmental Control Officer (ECO) or manager or supervisor. The PR/Real Properties CC may decide to assign this role to one person for all the activities, or may assign a different ECO for each activity. The ECO will have the following responsibilities during the brick making activities and associated operational and maintenance phases of this project:

- Management and facilitation of communication between the Proponent, PR, the contractors, and Interested and Affected Parties (I&APs) with regard to this EMP;
- Conducting regular inspections (recommended minimum frequency is once every six months) with respect to the implementation of this EMP (monitor and audit the implementation of the EMP);
- Assisting the Contractor in finding solutions with respect to matters pertaining to the implementation of this EMP;
- Advising the PR on the removal of person(s) and/or equipment not complying with the provisions of this EMP;
- Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP; and
- Undertaking an annual review of the EMP and recommending additions and/or changes to this document.

2.3 The Contractor

The following are the specific responsibilities of Contractor to oversee the brick making operations:

- Appoint a Manager to oversee the daily onsite activities.
- Liaise closely with the Manager and ECO on any environmental management issues, incidents or emergencies.
- 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.
- Where reasonably applicable, Real Properties CC shall set up the brick making site in accordance with the layout of the Site Map, and must ensure all work areas and

stockpiles are located within the area as demarcated by the pegs; and in a manner that complies with the requirements of this EMP.

- Ensure that all staff remain within the boundaries of the brick making site, and that all works remain within the brick making parameters as specified Site Map.
- 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 an on-site talk and/or a written code of conduct that is clearly explained to and understood by the team).
- Ensure that any subcontractors or visitors to the site are conversant with the EMP or relevant sections of the EMP pertaining to their role on-site.
- Ensure that the site is rehabilitated in accordance within the requirements of this EMP.

The tables in the following chapter (**Chapter 3**) detail the management measures associated with the roles and responsibilities that have been laid out in this chapter.

3 MANAGEMENT ACTIONS

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

The following tables provide the management actions recommended to manage the potential impacts rated in the scoping-level EA conducted for these activities. These management actions have been organised temporally according to project phase:

- Applicable legislation (**Error! Reference source not found.3**);
- Construction & brick making management actions (**Table 4**);
- Decommissioning phase management actions (**Table 5**).

The responsible persons from the proponents' team have assessed these commitments in detail and have committed to the specific management actions where indicated in the tables below.

3.1 ASSUMPTIONS AND LIMITATIONS

This EMP has been drafted based on the scoping-level Environmental Assessment (EA) conducted for the operation and management of the brick making activities; continual site rehabilitation at the end of the project lifecycle activities. HEEC will not be held responsible for the potential consequences that may result from any alterations to the agreed course of action in terms of the intended activities in the Onanime Village area.

It is assumed that labourers will be sourced mostly from the Oshakati Townlands area and that migrant labourers (if applicable) will be housed within established accommodation facilities at Onanime Village, Okatana Constituency, Oshana Region.

3.2 APPLICABLE LEGISLATION

There are multiple legal instruments that regulate and have a bearing on good environmental management in Namibia. **Table 3** below provides a summary of the relevant statutory framework of Namibia and international laws of which Namibia is a signatory which are relevant to the proposed development and environmental assessment process.

Table 3: Legal provision relevant to this project

Legislature/Policies	Relevant provision	Relevance to project
The Constitution of the Republic of Namibia	The Namibian constitution is the supreme law of the country which is committed to sustainable development. Article 95(1) of the Constitution of Namibia states that: "The State shall actively promote and maintain the welfare of the people by adopting policies aimed at ... The maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future".	<ul style="list-style-type: none"> To undertake the EA in order to maintain the ecological process and diversity of ecosystem.
Environmental Management Act No. 7 of 2007 (EMA)	Section 2 outlines the objective of the Act and the means to attain that. Section 3 details the principles of Environmental Management.	<ul style="list-style-type: none"> The management of this project must be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate. GN 30 provides the regulations governing the environmental assessment (EA) process.	<ul style="list-style-type: none"> Activity 4 (Forestry activities); clearing few individual trees to construct the brick factory and makes the area accessible. Activity 5 (Land use and development activities); the proposed project includes alteration of the open grazing area to establish a brick manufacturing factory. Activity 8.1 (Water Resource Developments); the brick making

		<p>factory will make use of water at an industrial scale.</p> <ul style="list-style-type: none"> • Activity 8.6 (Water Resource Developments); the brick making factory will entail the construction of such facilities to connect to the existing reticulation system. • Activity 9.2 (Hazardous substance treatment, Handling and Storage); the brick making factory must comply with requirements and conditions of operation as set.
Environmental Assessment Policy of Namibia (1995)	The Policy seeks 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 is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.	<ul style="list-style-type: none"> • This EA should consider this term of Environment.
The Occupational Safety and Health Act No. 11 of 2007;	<p>Safety risk is a statistical concept representing the potential of an accident occurring, owing to unsafe operation and/or environment. In the working context "SAFETY" is regarded as "free from danger" to the health injury and to properties.</p> <p>Occupational Health is intended at the promotion and maintenance of the highest degree of physical, mental and social wellbeing of workers in all occupations. This is done by ensuring that all work-related hazards are prevented and where they occur, managed.</p>	<ul style="list-style-type: none"> • The construction and operation of the brick making factory should comply with the guidelines outlined.

Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	<ul style="list-style-type: none"> The EA should incorporate the aspects outlined in the guidelines.
Public Health 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.	<ul style="list-style-type: none"> The construction and operation of the the brick making factory should adhere to this regulation.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	<ul style="list-style-type: none"> Care should be taken that the construction and operation the brick making factory; do not lead to the degradation of the natural beauty of the area.
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of underground and surface water bodies.	<ul style="list-style-type: none"> The pollution of water resources should be avoided during construction and operation the brick making factory.
The Ministry of Environment and Tourism (MET) Policy on HIV & AIDS	MET has recently developed a policy on HIV and AIDS. In addition, it has also initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.	<ul style="list-style-type: none"> The owner of the the brick making factory must adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with similar projects has shown that a significant health risk occurs when migrant contract workers/labourers interact with local communities.
Local Authorities Act No. 23 of 1992	The Local Authorities Act prescribes the way a town or municipality should be managed by the Town or Municipal Council. Sections 34-47 make provision for the aspects of water and sewerage.	<ul style="list-style-type: none"> The construction and operation of the the brick making factory must comply with provisions of the Local Authorities Act.

Labour Act No. 11 of 2007	Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.	<ul style="list-style-type: none"> Given the employment opportunities presented through the construction and operation of the brick making factory, compliance with the law is essential.
Public and Environmental Health Act of 2015	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; maternal, ante-natal and neo-natal care; water and food supplies; infant nutrition; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979).	<ul style="list-style-type: none"> The construction and operations of the the brick making factory must comply with these legal requirements.
Hazardous Substances Ordinance No. 14 of 1974	This ordinance gives provision to control the handling of hazardous substance in all circumstances, such as manufacturing, imports and exporting of these to ensure human and environmental safety.	<ul style="list-style-type: none"> The proponent should comply with this legislation.
Nature Conservation Ordinance No. 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants.	<ul style="list-style-type: none"> Indigenous and protected plants must be managed within the legal confines.
Soil Conservation Act 6 of 1969 Ministry of Agriculture, Water and Forestry	This Act covers the prevention and combating of soil erosion; the conservation, improvement and manner of use of the soil and vegetation; and the protection of water sources.	<ul style="list-style-type: none"> Soils should not be polluted or left un-rehabilitated.
African Convention on the Conservation of Nature and Natural Resources (African Union, 2003)	Article 9 subsection (h) Article IX subsection (h), on Species and Genetic Diversity is particularly noteworthy,	<ul style="list-style-type: none"> Careful consideration should be taken that the landscaping of the facility does not lead to the introduction of alien plants.

	stating that signatory states “shall strictly control the international and, as far as possible, accidental introductions, in any area, of species which are not native to that area and endeavor to eradicate those already introduced where the consequences are detrimental to native species or to the environment in general.”	
National Heritage Act No. 27 of 2004	The Act makes provision for the protection and conservation of places and objects of heritage significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits.	<ul style="list-style-type: none"> • The proponent should adhere to this regulation.

3.3 PROJECT LOCATION AND DESCRIPTION

The proposed brick making factory will be at Onanime Village located approximately 12 km north of Oshakati, along the D3609, from Oshakati to Omungwelumbe within the Okatana Constituency, Oshana Region (see **Figure 1 and 2** below for the proposed site).

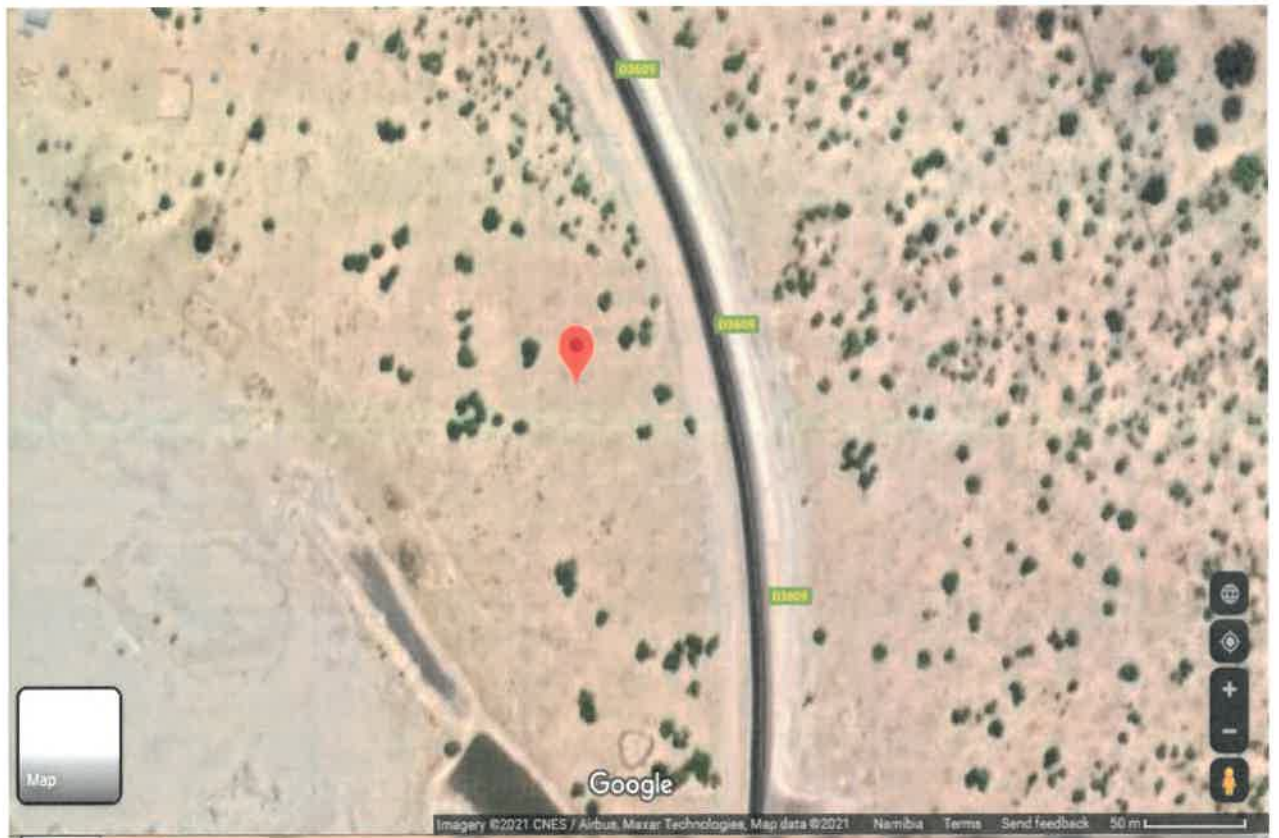


Figure 1: Proposed location of the brick making factory (red pin) at Onanime Village, Okatana constituency, Oshana region (GPS coordinates 17° . 700187 S, 15° . 656904 E) (Google 2021).

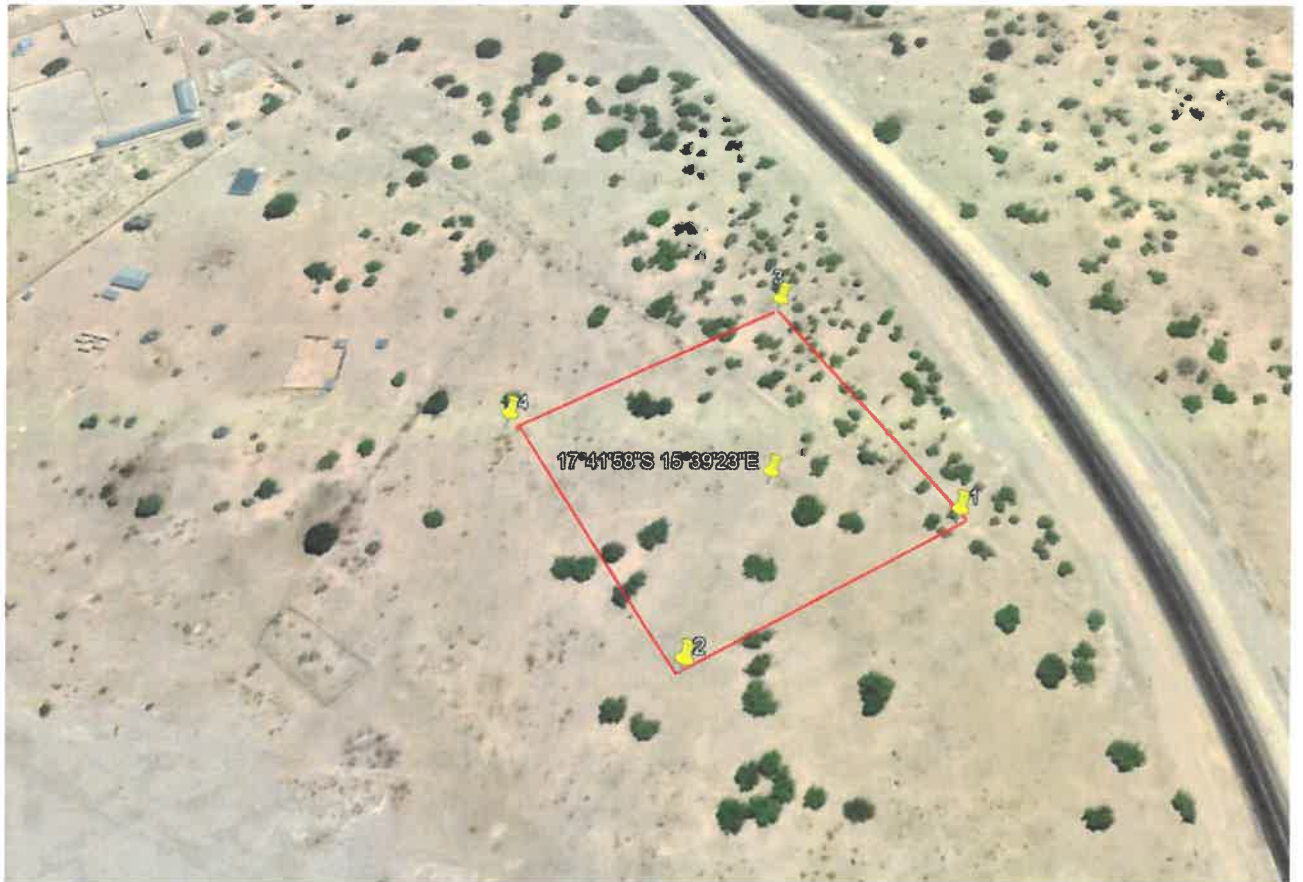


Figure 2: Proposed area of the brick making factory (red pinned) at Onanime Village, Okatana constituency, Oshana region (HEEC 2021).

The proponent has been granted the parcel of land ear-marked for the project in his private capacity by the Uukwambi Traditional Authority. The lifespan of the project is not yet determined. The bricks will be transported to different construction sites within the townlands of Oshakati and beyond using flat-bed trucks mounted with a crane. The access to the proposed brick making factory will be gained from the existing track which branches out to the west from the D3609, when driving from Oshakati to Omungwelume. Therefore, the approval of this application can ensure the continued sustainable management of the brick making site.

3.3.1 RECEIVING ENVIRONMENT

Onanime Village is located in north central Namibia approximately 12 km north of Oshakati within the Okatana Constituency, Oshana Region. Oshakati is one of the fast-growing towns and the major economic hub in northern Namibia. Due to the proximity of the village to Oshakati, majority of the people at the village are employed in various economic sectors in Oshakati. Since there are no existing mainstay economic activity in the village. Many people, especially the youth have to travel to Oshakati and Ongwediva to seek for employment opportunity, while a handful work at local shebeens and other small outlets found within the vicinity of the village.

3.3.2 Biodiversity (Flora and Fauna)

3.3.2.1 Flora

The proposed area is falling under the mopane savanna and the area is characterized by mixed trees and shrubs species. The following plant species were merely the conspicuous plant species recorded in the area namely; *Terminalia sericea*, *Mundulea sericea*, *Pechel-loeschea leubnitziae* and *Hyphaene petersiana*. The area has limited habitats type and is typically heterogeneous with the only distinct habitat the plain (Oshana) found on the west of the proposed area.

3.3.2.2 Fauna

The proposed area falls within the communal area which is mainly predominated by subsistence farming activities. Due to human interference in the proposed area, the only potential wild animals occurring in the vicinity are the small mammals such as rabbit in the family *Leporidae* and rodents in the order *Rodentia*. Beside the rabbits and rodents, there is no evidence of potential wild animals in the area, therefore there will be no human-wildlife conflict. However, appropriate mitigation measures should be in place to circumvent any destruction of underground burrows for rodents.

3.4 BIODIVERSITY MANAGEMENT AND MITIGATION

3.4.1 ISSUE: GENERAL PHYSICAL DISTURBANCE OF BIODIVERSITY

The EMP covers the following broad topics: physical destruction of biodiversity and related functions, impacts on environment as an ecological driver, and general disturbances to biodiversity.

Table 4: Physical disruption of biodiversity - link to phase and activities

Issue	Management commitment	Phase
Physical disruption to biodiversity by Staff	Undertake a relocation and plant storage before the start of any clearing if there is any endangered/protected plant species found on site. Prepare the base camp and ablution facilities at already disturbed areas. The Principle of zero tolerance to killing and collecting of biodiversity i.e. no poaching (including collection of firewood) will be allowed and poaching offenders will be prosecuted. Remove and store topsoil for later rehabilitation of vegetation Forbid off-road driving during hauling operations Restrict the movement of the vehicles on demarcated track only Do not allow domestic animals such as cat and dogs in the area of brick making site. Enforce a speed limit of 60km/hr.	All
	All species with a conservation and or protection status should be identified, clearly marked and preserved (by at least 50%)	Brick making
Physical disruption to biodiversity by infrastructures	Barricade the areas of operations to ensure that animals have no access to brick making areas.	All
	Upon completing brick making activities, initiate restoration program including areas that were only impacted during topsoil stock piling activities.	Operation, decommissioning and closure
Emergency	Certain instances of injury to animals may be considered emergency situations. These will be managed in accordance with the Real Properties CC emergency response procedure. Conduct a safety induction program to all the employees before commencing duties.	All
Responsibility	Real Properties CC Management and Environmental Control Officer (ECO)	

3.5 Environment and Economic Issues

Namibia's economy is highly dependent on a healthy environment. However, the brick making activities whether at a large or small scale is inherently disruptive to the environment. Environmental problems occur when the impacts associated with the brick making activities such air pollution due to dust and noise from operating and transportation activities are not mitigated.

Balancing the demands of economic development (such as brick making) with the demands of maintaining biological diversity can be a challenge. Therefore, it is of utmost importance that the environment and development sectors should work together and identify synergies in order to ensure that natural resources and associated activities are undertaken in an acceptable and sustainable manner.

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 will be affected. Therefore, it is of utmost importance that such impacts are mitigated as guided by the EMP. The following tables prescribe the management actions to be taken at each phase of the brick making activities.

3.6 BRICK MAKING PHASE

The PR should ensure that the management actions detailed in **Table 5** below should be adhered to during the operation of the brick making facility and should be undertaken together with the mitigation measures in **Table 4**.

Table 5: Brick making phase management actions

Aspect	Management Actions
Environmental Incidents	<ul style="list-style-type: none"> • The ECO on site shall maintain a register of all environmental incidents occurring as a result of the activities associated with the project. Environmental incidents that shall be recorded include (but are not limited to): <ul style="list-style-type: none"> ➤ Fires; ➤ Drowning; ➤ Accidents (e.g. traffic); ➤ Spills of hazardous materials, contaminating soil or water resources; ➤ Non-compliances with applicable legislation; and ➤ Non-compliances with this EMP. • Environmental incident reports shall include (as a minimum) a description of the incident, the actions taken to contain any damage to the environment, personnel, or the public, and the actions taken to repair / remediate any such damage. • Additional measures shall be prescribed that may be required to remediate damage resulting from the incident and / or to prevent similar incidents occurring in the future.

Aspect	Management Actions
Traffic	<ul style="list-style-type: none"> • Ensure that road junctions have good sightlines. • Limit the type of vehicle (heavy trucks) allowed on site. • Adhere to the speed limit. If permissible, caution signs and 40 km/hr signs shall be placed at regulation distance from heavy vehicle crossing signs at the intersections of the access tracks and the D3609 road which stretches from Oshakati to Omungwelume. • Designate no-drive zones. • Implement traffic control measures where necessary by keeping a number plate register of all vehicles bringing sand at the site and restricting access to authorised contractors.
Borrow pits/Brick making area	<ul style="list-style-type: none"> • Sand should be sourced from a borrow pit with a valid ECC. • The brick making area must be clearly demarcated by means of a perimeter stock-proof fence with a lockable gated entrance. • Brick making and resultant operations shall only take place within this demarcated area. • A detailed photographic record of the demarcated areas, prior to any mining activities, shall be taken. These records are to be kept by the Proponent and PR for reference purposes during the rehabilitation of the site. • There will be 'No unauthorised access' signs at the premises gate.

Aspect	Management Actions
	<ul style="list-style-type: none"> • Excess material may also be used in profiling and rehabilitating of the open borrow pits in the surrounding areas in Onanime village.
EMP training	<p>All workers at the site are to undergo EMP training that should include as a minimum the following:</p> <ul style="list-style-type: none"> • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of the intended brick making activities. • Employees' roles and responsibilities, including emergency preparedness and response requirements. • Explanation of the mitigation measures that must be implemented when particular work groups carry out their respective activities. • The potential consequences of departure from specified operating procedures; and rewards for enhancing mitigation measures or avoiding negative environmental effects.
Fauna and Flora	<ul style="list-style-type: none"> • Prevent the destruction of protected tree species. • Encourage the regrowth and regeneration of trees with exposed roots at the site. • The layout of the bricking facility should incorporate existing trees¹. • The Contractor should compile a Tree Management Plan which should include the following as a minimum:

¹a "tree" is defined as an indigenous woody perennial plant with a trunk diameter ≥150 mm

Aspect	Management Actions
	<ul style="list-style-type: none"> ○ Trees if not already accounted for in an existing Geographic Information System (GIS), should be surveyed, co-ordinates/location incorporated into the Contractor's GIS, marked with paint (or other means so as to be readily visible) and protected; ○ Trees, which are impossible to conserve, need to be identified and their location recorded on a map; ○ The Contractor should apply to the Uukwangali Traditional Authority for a permit to remove these trees. ○ A list should be compiled of all trees to be removed detailing the location of the tree, the species as well as which trees will be planted to replace these. The nursery where these trees will be sourced from should also be included; ○ Each tree that is removed needs to be replaced with an indigenous tree species; ○ Some of these trees can be obtained at the local nurseries in the region such as the state nursery at Ongwediva, under the Ministry of Environment, Forestry and Tourism. Assistance can be sought from this forestry office regarding nearby nurseries where additional trees may be bought. ● Only a limited width +/- 5 m on the side of the access roads may be partially cleared of vegetation. ● Workers are prohibited from collecting wood or other plant products on or near the site.

Aspect	Management Actions
	<ul style="list-style-type: none"> • No alien species may be planted on or within the existing site. • Prevent contractors from collecting wood and veld food such as amphibians, migrating birds, etc. during the brick making/operational phase.
Lay-down areas and materials camp	<p>Suitable locations for the contractors lay-down areas and materials camp should be identified with the assistance of the PR and the following should be considered in selecting these sites:</p> <ul style="list-style-type: none"> • The areas designated for the services infrastructure should be used as far as possible. • Second option should be degraded land. • Avoid sensitive areas (e.g. wetlands/rivers/drainage lines)
Hazardous waste	<ul style="list-style-type: none"> • All heavy-duty vehicles and equipment on site should be provided with a drip tray. • All heavy-duty delivery vehicles should be maintained regularly to prevent oil leakages. • Maintenance and washing of vehicles should take place only at a designated workshop area. • Spilled cement and/or concrete (wet or dry) should be treated as hazardous waste and disposed of by the end of each day in the appropriate hazardous waste containers.

Aspect	Management Actions
	<ul style="list-style-type: none"> All hazardous substances (e.g. fuel etc.) or chemicals should be stored in a specific location on an impermeable surface that is bunded - with a volume of 120 % of the largest single storage container or 25 % of the total storage containers, whichever is greater.
Surface and Ground Water Impacts	<ul style="list-style-type: none"> It is recommended that brick making takes place outside of the rainy season in order to limit erosion & flooding on site and surface water pollution. No dumping of waste products of any kind in or in close proximity to surface water bodies. Heavy duty vehicles should be kept out of any surface water bodies and the movement of vehicles should be limited where possible to the existing access roads and tracks. Contaminated runoff from the sites should be prevented from entering the surface water bodies. Workers should be given ablution facilities at the sites that are located at least 30 m away from any surface water and regularly serviced. Washing of personnel or any equipment should not be allowed on site.
Topsoil	<ul style="list-style-type: none"> When excavations are carried out, topsoil² should be stockpiled in a demarcated area and used in profiling and rehabilitating of the open borrow pits in the surrounding areas in Onanime village.

² Topsoil is defined here as the top 150mm of surface material, which accounts for the seedbank.

Aspect	Management Actions
Soil Erosion	<ul style="list-style-type: none"> • Clear the vegetation of the project area in phases during the brick making period in order to keep the soil more compacted as well as to limit overall disturbance to the area over time. • It is recommended that most brick making activities take place outside of the rainy season in order to limit potential flooding and the run off of loose soil causing further erosion. • Appropriate erosion control structures must be put in place where soil may be prone to erosion. • Checks must be carried out at regular intervals to identify areas within the site where erosion is occurring. Appropriate remedial actions are to be undertaken wherever erosion is evident.
Rehabilitation	<ul style="list-style-type: none"> • Upon completion of the brick making phase consultations should be held with the local community/property owner(s) regarding the post-brick making use of remaining excavated areas (if applicable) and to identify priority areas. • In the event that no post-operation uses are requested, all excavated/degraded areas need to be rehabilitated as follows: <ul style="list-style-type: none"> ○ Excavated areas may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. ○ Rehabilitated excavated areas need to match the contours of the existing landscape.

Aspect	Management Actions
	<ul style="list-style-type: none"> ○ The rehabilitated area should not be higher (or lower) than nearby drainage channels. This ensures the efficiency of revegetation and reduces the chances of potential erosion. ○ Topsoil is to be spread across excavated areas evenly. ○ Deep ripping of areas to be rehabilitated is required, not just simple scarification, so as to enable rip lines to hold water after heavy rainfall. ○ Ripping should be done along slopes, not up and down a slope, which could lead to enhanced erosion.
Covid19;HIV/AIDS and TB awareness	<ul style="list-style-type: none"> ● The Contractor should approach the Ministry of Health and Social Services to co-opt a health officer to facilitate Covid19; HIV/AIDS and TB education programmes periodically on site during the project operation. ● A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases. ● Provide free condoms in the workplace and to local community throughout project operation. ● Facilitate access to Antiretroviral medication ● Personnel should not overnight at the brick making site, but only the security personnel. ● All Covid19 regulations must be adhered to as prescribed by the Ministry of Health and Social Services and must strictly be abided to.
Road safety	<ul style="list-style-type: none"> ● Demarcate roads clearly. ● Off-road driving should not be allowed.

Aspect	Management Actions
	<ul style="list-style-type: none"> • All vehicles that transport materials to and from the site must be roadworthy. • Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. • Loads upon vehicles should be properly secured to avoid items falling off the vehicle. • Limit and control the number of access points to the site. • The road leading to the brick making site should be properly maintained so as to reduce dust emissions when heavy vehicles travel on them. • Consideration should be given to possibly put interlocks/pavers on the road leading to the brick making site which could reduce dust emissions onsite.
Safety around work sites	<ul style="list-style-type: none"> • Excavations should be left open for the shortest time possible. • Excavate short lengths of trenches and box areas for services or foundations in a manner that will not leave the trench unattended for more than 24 hours. • Demarcate excavated areas and topsoil stockpiles with danger tape. • Provide additional warning signage in areas of movement and in "no personnel" areas where workers are not active. • Work areas must be set out and isolated with danger tape on a daily basis.

Aspect	Management Actions
	<ul style="list-style-type: none"> • All materials and equipment are to be stored only within set out and demarcated work areas. • Only brick making personnel will be allowed within these work areas. • 2 fire extinguishers should be available at fuel storage areas. • Comply with all waste related management actions stated above in this table.
Ablutions	<ul style="list-style-type: none"> • Separate toilets should be available for men and women and should clearly be indicated as such. • Portable toilets (i.e. easily transportable) should be available at every construction site: <ul style="list-style-type: none"> ○ 1 toilet for every 15 females. ○ 1 toilet for every 30 males. ○ Sewage needs to be removed on a regular basis to an approved (municipal) sewage disposal site. Alternatively, sewage may be pumped into sealable containers and stored until it can be removed. ○ Workers responsible for cleaning the toilets should be provided with latex gloves and masks.
Open fires	No open fires may be made anywhere on site.
General health and safety	<ul style="list-style-type: none"> • A fully stocked first aid kit should permanently be available on-site as well as an adequately trained member of staff capable of administering first aid. • All workers should have access to the relevant personal protective equipment.

Aspect	Management Actions
	<ul style="list-style-type: none"> • Sufficient potable water reserves should be available to workers at all times. • No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets – the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol. • Maintain social distancing where possible, wear your face masks, wash hands regularly and have daily temperature checks before and after work.
Dust	<ul style="list-style-type: none"> • A watering truck should be used on gravel roads with the most heavy vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restrictions during times of drought. • The use of waterless dust suppression means (e.g. lignosulphonate products such as Dustex) should be considered. • Cover any stockpiles with plastic to minimise windblown dust. • Dust protection masks should be provided to workers if they complain about dust. • During high wind conditions the contractor must make the decision to cease works until the wind has calmed down.

Aspect	Management Actions
Noise	<p>Work hours should be restricted to between 08h00 and 17h00 where excavation involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. If an exception to this provision is required, all residents and business owners within the 500 m radius should be given 1 week's written notice.</p>
Recruitment of labourers	<p>The Contractor should compile a formal recruitment process including the following provisions as a minimum:</p> <ul style="list-style-type: none"> • Adhere to the legal provisions in the Labour Act No. 11 of 2007 for the recruitment of labour (target percentages for gender balance, optimal use of local labour and SME's, etc.). • Recruitment should not take place at the brick making site. • Ensure that all sub-contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside these agreed upon procedures. • All contractors should give preference in terms of recruitment of sub-contractors and individual labourers to those who are qualified and from the project area and only then look to surrounding towns. • Clearly explain to all job-seekers the terms and conditions of their respective employment contracts (e.g. period of employment etc.) – make use of interpreters where necessary.

Aspect	Management Actions
Communication plan	<p>The Contractor or PR should draft a Communication Plan, which should outline as a minimum the following:</p> <ul style="list-style-type: none"> • How Interested and Affected Parties (I&APs), who require on-going communication for the duration of the operation period, will be identified and recorded and who will manage and update these records; • How these I&APs will be consulted on an on-going basis; • Make provision for grievance mechanisms – i.e. how concerns can be lodged/ recorded and how feedback will be delivered as well as further steps of arbitration in the event that feedback is deemed unsatisfactory.
General communication	<ul style="list-style-type: none"> • The PR must appoint an ECO to liaise between the Contractor, I&APs and Real Properties CC management. • The Contractor shall at every bi-monthly site meeting report on the status of the implementation of all provisions of the EMP. • The Contractor should implement the EMP awareness training as stipulated above in this table.

Aspect	Management Actions
	<ul style="list-style-type: none"> • The Contractor must list the I&APs of the project and their contact details with whom on-going communication would be required for the duration of the contract. This list, together with the Communication Plan must be agreed upon and given to the PR before operation commences/resumes. • The Communication Plan, once agreed upon by the Developer, shall be legally binding. • A copy of the EMP must be available at the site office and should be accessible to all I&APs. • Key representatives from the above mentioned list need to be invited to attend monthly site meetings to raise any concerns and issues regarding progress to rehabilitate the excavated areas and surrounding borrow pits. • The Contractor should liaise with the proponent regarding all issues related to community consultation and negotiation before operation commences/resumes. • A procedure should be put in place to ensure that concerns raised have been followed-up and addressed. • All people on the I&APs list should be informed about the availability of the complaints register and associated grievance mechanisms in writing by the PR prior to the commencement of site activities.

Aspect	Management Actions
Archaeology	<ul style="list-style-type: none"> • Should a heritage site or archaeological site be uncovered or discovered during the sand harvesting or earth dam construction phase of the project, a “chance find” procedure should be applied in the order they appear below: <ul style="list-style-type: none"> ○ If operating machinery or equipment stop work; ○ Demarcate the site with danger tape; ○ Determine GPS position if possible; ○ Report findings to the site foreman; ○ Report findings, site location and actions taken to superintendent; ○ Cease any works in immediate vicinity; ○ Visit find site and determine whether work can proceed without damage to findings; ○ Determine and demarcate exclusion boundary; ○ Site location and details to be added to a Geographic Information System (GIS) for field confirmation by archaeologist; ○ Inspect site and confirm addition to brick making site GIS; ○ Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and ○ Recovery, packaging and labelling of findings for transfer to National Museum. • Should human remains be found, the following actions will be required: <ul style="list-style-type: none"> ○ Apply the chance find procedure as described above;

Aspect	Management Actions
	<ul style="list-style-type: none"> ○ Schedule a field inspection with an archaeologist to confirm that remains are human; ○ Advise and liaise with the NHC and Police; and ○ Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory.

3.7 DECOMMISSIONING PHASE

The decommissioning of the brick making site is envisaged in the near future so as to use this land parcel for alternative uses as deemed suitable when the event occurs and some recommendations have been outlined in **Table 6** below.

Table 6: Decommissioning phase management actions

Environmental Feature	Management Actions
Deconstruction activity	Many of the mitigation measures prescribed for the brick making activities (Table 5 above) would be applicable to some of the decommissioning activities. These should be adhered to where applicable.
Rehabilitation	In the event that decommissioning is deemed necessary, excavations need to be rehabilitated according to the management actions laid out in Table 5 above.

4 CONCLUSION

The EMP has identified and recommended measures to be adopted by Real Properties CC to manage the brick making activities as well as measures to ensure that the site is rehabilitated. In-addition, the EMP prescribes site closure measures that are considered both legally compliant and environmentally acceptable.

Real Properties CC would like to conform the Environmental Management Act of 2007 and EIA regulations of 2012 and hereby commits itself to abide to the recommended mitigation and rehabilitation measures as prescribed in this Environmental Management Plan (EMP).

Real Properties CC further acknowledges that the brick making facility falls under the jurisdiction of the Uukwambi Traditional Authority and is located in north central Namibia approximately 12 km north of Oshakati within the Okatana Constituency, Oshana Region, Namibia. The proponent is in possession of a lease agreement with the Uukwambi Traditional Authority enabling them to harvest the sand from the allocated portion. **(Appendices B-D)**.

It is recommended that an Environmental Control Officer monitors the preparation, operational, rehabilitation and closure of the brick making facility in-order to ensure that the mitigation and rehabilitation measures prescribed in the EMP are adhered to.

5 PENALTIES**5.1 Penalties for the activities detailed below, will be imposed by the ECO on the Proponent and / or his Sub-Contractors.**

a)	Any employees, vehicles, or things related to the Contractor's operations operating outside the designated boundaries or a "no-go" area.	N\$ 5,000
b)	Persistent and un-repaired oil leaks from machinery.	N\$ 2,000
c)	Persistent failure to monitor and empty drip trays timeously.	N\$ 2,000
d)	The use of inappropriate methods for refuelling, resulting in spillages.	N\$ 2,000
e)	Deliberate lighting of illegal fires on site.	N\$ 2,000
f)	Employees not making use of the site ablution facilities.	N\$ 2,000
g)	Unauthorised removal of vegetation.	N\$ 10,000
h)	Hunting, trapping and collection of animals (per unit taken).	N\$ 20,000
i)	Failure to implement specified noise controls.	N\$ 2,000
j)	A spillage, pollution, fire or any damage to the environment resulting from negligence on the part of the Proponent.	N\$ 25,000
k)	Damage to vegetation or ground arising from equipment leaving designated haul or access routes.	N\$ 25,000
Responsibility	Real Properties CC Management and Environmental Control Officer (ECO)	

For each subsequent similar offence the penalty shall be doubled in value to a maximum value of N\$ 50,000.00. The ECO shall be the judge as to what constitutes a transgression in terms of this clause.

Appendix F: Curriculum Vitae for the Environmental Assessment Practitioner

