ENVIRONMENTAL MANAGEMENT PLAN

FOR THE

SUBDIVISION OF ERF 62, REHOBOTH EXTENSION 1 INTO 12 ERVEN AND REMAINDER AND THE CREATION OF A STREET WITHIN REHOBOTH TOWN, HARDAP REGION, NAMIBIA

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Client

Name	Position/ Role	Address
Mr. William Frank Izaacs	Mr. William Frank Izaacs (Proponent)	P. O Box 3938 Rehoboth

LIST OF ABBRECIATIONS

TERM	DEFINITION
ECO	Environmental Control Officer
RoD.	Record of Decision
EO	Environmental Officer
RE	Resident Engineer
ELO	Environmental Liaison Officer
PPE	Personal Protective Equipment
EMP	Environmental Management Plan
EIA	Environmental Impact Assessment

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1. INTRODUCTION AND BACKGROUND

Mr. William Frank Izaacs proposes the Subdivision of Erf 62, Rehoboth Extension 1 into 12 Erven and Remainder and the creation of a 13-meter Street within Rehoboth Town, Hardap Region in central Namibia, to cater for the development of 12 residential properties.

Nghivelwa Planning Consultant has been appointed to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the Subdivision of Erf 62, Rehoboth Extension 1 into 12 Erven and Remainder and the creation of a 13-meter Street within Rehoboth Town, to cater for the development of residential properties. The Environmental Impact Assessment has been conducted to meet the requirements of Namibia's Environmental Management Act (No. 7 of 2007).

An EIA may be defined as: a formal process to predict the environmental consequences of human development activities and to plan appropriate measures to eliminate or reduce adverse effects and to augment positive effects.

EIA thus has three main functions:

- To predict problems,
- To find ways to avoid them, and
- To enhance positive effects.

The purpose of the EMP report is to proactively address potential problems before they occur. This will ensure that unnecessary damage to the environment during the construction phase is avoided. Moreover, mitigation measures will be implemented to minimize environmental degradation.

This EMP Report was prepared by the following environmental consultants:

Name of representative of the EAP	Education qualifications	Professional affiliations
Nghivelwashisho Ndakunda	B –tech TRP	NAITRP, NCTRP
Elina SP Vakuwile	B-tech Environmental Management	Environmental Scientist (EAPAN Member)

See attched preparers' resumes

2. PROJECT DESCRIPTION

The proposed development is for the Subdivision of Erf 62, Rehoboth Extension 1 into 12 Erven and Remainder and the creation of a 13-meter Street within Rehoboth Town, Hardap Region in central Namibia, to cater for the development of residential properties.

The project involves the Constructions of Buildings and parking as well as the construction of the access road to the site from the main street, the construction and installation of bulk services such as Sewer Water Reticulation, the connection and installation of Electricity, the connection and installation of Drinking water to the buildings and the maintenance of the storm water network which will be the responsibility of the proponent.

The proponent will also be responsible for the maintenances of the site during operational phase such as Waste management from site, Noise Pollution control, light pollution to save energy, safety as well as technical maintenance of the afore-mentioned services.

3. SCOPE

The framework within which this Environmental Management Plan Report (EMP) is developed includes identifying various activities, their occurrence in the construction process and the likely impacts that are associated with those activities. It is therefore necessary to subcategorize the EMP report into Pre-Construction, Construction and Post-Construction activities.

The first category of the EMP report deals with the pre-construction activities identifies the impacts and mitigation measures that will need to be employed before the construction of the proposed project commences.

The second category deals with the construction activities and the mitigation measures that will need to be applied to reduce the severity of the impacts the proposed development may have on the surrounding environment.

The third category discusses the rehabilitation measures that will need to be implemented once the construction is completed, to ensure that the impact of the proposed rehabilitation on the environment is minimized. Furthermore, it will discuss activities that need to be undertaken to ensure that no environmental degradation occurs as a result of the project.

The construction and operational of the proposed project will involve;

- The preparation of the site,
- Transportation of materials supply with road transport trucks.
- Off-loading of materials
- The constructions of the buildings,
- The connections of bulk services infrastructures such as water, electricity power lines and the construction of sewage network.
- The supplying of bulk services such as water, electricity, waste disposal plan and waste management
- The Maintenance of the site/ development by the Rehoboth Town Council and the Developer.
- All services infrastructure once constructed, the Rehoboth Town Council will be responsible to maintain it.

The Environmental Impact Assessment study report includes an impact assessment and their mitigation measures of all the three phases of the proposed project following:

- The field investigations (site assessment) ,

- Identifying and involving all stakeholders in the Environmental Impact Assessment process by expressing their views and concerns on the proposed project;
- Identify all potential significant adverse environmental and social impacts of the project and recommend mitigation measures to be well described in the Environmental Monitoring Plan (EMP);
- Coordination with the proponent, regarding the requirements of law of Namibia's Environmental Management Act (No. 7 of 2007) and other relevant policies and administrative framework.
- To define the Terms of Reference for the Environmental Impact Assessment study.
- A review of the policy, and relevant legislations
- To provide overall assessment information of the social and biophysical environments of the affected areas by the proposed development.

This environmental management plan (EMP) aims to take a pro-active route by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigating measures might be included if necessary.

4. POLICY AND OTHER RELEVANT LEGISLATION

The following are the legal instruments that govern or advocate the subdivision and the creation of streets:

SUBJECT	INSTRUMENTS AND CONTENT	APPLICATION TO THE PROJECT
The Constitution of the Republic of Namibia	*General human rights – eliminates discrimination of any kind* *The right to a safe and healthy environment* *Affords protection to biodiversity*	*Ensure these principles are enshrined in the documentation of the exploration project*
Environmental Management Act EMA (No 7 of 2007)	*Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.*	➢
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 487	*Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).*	➢
Forestry Act No 27 of 2004	*Provision for the protection of various plant species*	*Some species that occur in the area are protected under the Forestry Act and a permit is therefore required to remove the species*
Hazardous Substances Ordinance 14 of 1974:	*Control of substances which may cause injury or ill-health or death of human beings because their toxic, corrosive, irritant, strongly sensitizing or flammable nature*	*The waste generated on site and at the campsite should be suitably categorised/classified and disposed of properly and in accordance with the measures outlined in the Ordinance and Bill*
The Nature Conservation Ordinance (No. 4 of 1975)	*Prohibits disturbance or destruction of protected birds without a permit. Requires a permit for picking (the definition of "picking" includes damage or destroy) protected plants without a permit*	*Protected plants will have to be identified during the planning phase of the project. In case there is an intention to remove protected species, then permits will be required*

Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	*Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22(1)). Prohibits the removal of and transport of various protected plant species.*	*Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation of vegetation.*
Convention on Biological Diversity, 1992	*Protection of biodiversity of Namibia*	*Conservation-worthy species not to be removed if not absolutely necessary.*
Water Act 54 of 1956 **Water Resources Management Act 24 of 2004**	*The Water Resources Management Act 24 is presently without regulations; therefore the Water Act 54 is still in force* *The Act provides for the management and protection of surface and groundwater resources in terms of utilisation and pollution*	*Obligation not to pollute surface water bodies*
National Heritage Act 27 of 2004	*Section 48(1) states that "A person may apply to the [National Heritage] Council [NHC] for a permit to carry out works or activities in relation to a protected place or protected object*	*Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the National Heritage Council for relocation*
Labour Act 11 of 2007	*Details requirements regarding minimum wage and working conditions (S39-47).*	*Employment and work relations*
Health and Safety Regulations GN 156/1997 (GG 1617	*Details various requirements regarding health and safety of labourers.*	*Protection of human health, avoid township establishment at areas that can impact on human health.*
Public Health Act 36 of 1919	*Section 119 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 all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instrument*
Water Act 54 of 1956	*The Water Resources Management Act 24 of 2004 is presently without regulations; therefore the Water Act No 54 of 1956 is still in force:* *Prohibits the pollution of underground and surface water bodies (S23(1)).* *Liability of clean-up costs after closure/ abandonment of an activity (S23(2)).*	*The protection of ground and surface water resources should be a priority. The main threats will most likely be concrete and hydrocarbon spills during construction and hydrocarbon spills during operation and maintenance.*

5. MANAGEMENT PRINCIPLES

These guideline principles will form the basis for environmental management on site. Should these principles require modification or additions during the project this should be done at the discretion of the responsible person, who will ensure that any modifications are communicated, explained to and discussed with all affected parties (i.e. the proponent, Rehoboth Town Council, Nghivelwa Planning Consultant, the contractors, service providers, and any affected party who requests this information).

The environmental operational procedures and environmental issues are identified and managed, under different phases of the project. The different phases are:

- Pre-construction (including design);
- Construction Phase;
- Operational Phase; and
- Decommissioning Phase

5.1. Environmental Issues to be managed

5.1.1. Construction and Operational Phases

Unless otherwise indicated, the responsibilities of the construction contractor(s) and service providers will adhere to specified EMP actions for the construction phase. The proponent must give a copy of the EMP to all contractors and sub-contractors before commencement of any work at the project to ensure accountability and responsibility are implemented between different role players. Hence, all appointed contractors must ensure to comply with the EMP and its conditions at all times.

5.2. Consultation with Interested and Affected parties (IAPs)

During these two phases the Construction and Operational Phases, it is of great value to establish an open communication channel between the developers (the proponent), the

contractors and IAPs such that any queries, complaints or suggestions can be dealt with quickly and by the appropriate person(s).

6. ROLES AND RESPONSIBILITIES

This section describes the roles and responsibilities of the key stakeholders involved in the development, implementation and review of the EMP.

6.1. Competent Authority

The Department of Environmental Affairs: Ministry of Environment and Tourism is responsible for the review of the EMP documents it is the competent authority.

6.2. Mr. William Izaacs (Applicant)

The role of the applicant is as follows:
The proponent should hire suitably qualified person(s) and assign them with the responsibility to ensure implementation of the EMP, and should:

- Know the contents and implications of the EIA and monitor the implementation of EIA findings using the EMP.
- Revise the EMP as required and inform the relevant parties of the changes.
- The applicant should review report regarding the implementation of the EMP and make payments to the Contractor if the EMP is being implemented in a satisfactory manner.
- Give warnings and impose fines and penalties on the Contractor if the Contractor neglects to implement the EMP satisfactorily**.**
- Protect the environment and rehabilitate the environment as prescribed in the EIA.

6.3. Mr. William Izaacs (Project Manager)

The Applicant will appoint the Project Manager. The role of the project manager will be:

- Liaising directly with the relevant authorities with respect to the preparation and implementation of the EMP and meeting the conditions documented in the environmental clearance certificate.
- Bear the overall responsibility for managing the project contractors and ensuring that the environmental management requirements are met.
- Inform the contractors of the EMP and Environmental clearance certificate obligations.
- Approve all decisions regarding environmental procedures and protocols that must be followed.
- Have the authority to stop any construction in contravention with the EMP and RoD.
- In consultation with the Environmental/ Safety Officer (EO) has the authority to issue fines for transgressions of basic conduct rules and/or contravention of the EMP.
- Maintain open and direct lines of communication between the proponent, Contractor and Interested and Affected Parties (I&APs) with regards to environmental matters.
- Attend regular site meetings and inspections where required.

6.4. Contractor's Safety Officer

- Implement the recommendations in the EIA and satisfy the conditions in the Record of Decision.
- Ensure that safety is practiced for all activities on site.
- Prepare and implement safety procedures
- Communicate all safety related issues.

6.5. Contractors

The contractor should appoint the Contactor's representative who is suitably qualified to implement the EMP. The responsibilities of the Contractor include:

- Compliance with the relevant legislation and the EMP.
- Preparation and submission to the proponent through Project Manager the following Management Plans prior to commencing work:
- Emergency Preparedness and Response;
- Waste Management; and
- Health and Safety.
- Environmental awareness presentations (inductions) to be given to all site personnel prior to work commencement;
- Record keeping of all environmental awareness training and induction presentations; and
- Attend regular site meetings and environmental inspections.

6.6. Resident Engineer (RE)

The Resident Engineer (RE) will be appointed by the 'Consultant' and will be required to oversee the construction program and construction activities performed by the Contractor. The RE is expected to liaise with the Contractor and the proponent.

7. PHASES OF THE PROJECT

7.1. The Construction Phase

The bulk of the impacts during this phase will have immediate effects (e.g. noise, dust and water demand). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts can then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from the developer.

Impacts	Description	Mitigation	Monitoring	Responsible Body
Dust *Main causes of air pollution are dust from vehicle movements and stockpiles, vehicle emissions and fires.*	Dust may be generated during the construction/decommissioning phase and might be aggravated when strong winds occur. These are expected to be site specific, short-termed and will most probably pose a negligible nuisance and health threat to those residing nearby. The construction of the proposed facility will have impact on the surrounding air quality as construction vehicle will be frequenting the site and surrounding Particulate Matter is contributing to respiratory tract infections.	Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas. It is recommended that regular dust suppression be included in the construction phase, when dust becomes an issue. Loads could be covered to avoid loss of material in transport, especially if material is transported off site.	Regular visual inspection by Project Manager	The proponent / Appointed Contractor/EO/Safety Officer
Noise	Noise levels are expected to rise during the construction phase of the development.	Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 7:30 – 13:00 on Saturdays.	Strict operational times. Regular inspection. By Safety Officer	Safety Officer

	Construction activities that cause noise include vehicle trafficking, generator noise, pressure hammers and construction worker's voices, including earthmoving equipment which will be utilized during the construction phase.	Provide ear plugs and ear muffs to staff undertaking the noisy activity or working within close proximity thereof.		
Employment Creation *(Positive Impact) this is a job creation and economic benefit to local community since the construction activities associates with the installation of services infrastructure which will require labourers from the surrounding.*	Temporary employment opportunities are anticipated to be created during construction, both directly (construction workers) and indirectly (suppliers, service providers, informal traders Alongside site).	The contractor must make use of local labour where possible in order to stimulate the local economy. Labor or services (e.g. security guards) should be sourced from the local Security Companies within Rehoboth area. When recruiting, the responsible contractor should ensure gender equality is taken into consideration that both men and women are employed equally and treated equally. No employment applications may take place at the entrance to the site, formal employment channels must be used.	Monitored once off by the Project Manager/Proponent	Appointed Contractor/ The proponent

Health and Safety	Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. is very important and should be adhered to. During construction phase, there is a possibility of injuries to occur if no measures are taken into consideration.	All contractors, consultants and labourers must ensure that the necessary personal protective equipment (PPE) is worn on site. Official training in the correct fit, use, care, storage and limitations of all Personal Protective Clothing, Respiratory and Hearing Equipment must be given to the employees. Ensure all open excavations are clearly marked and all the appropriate health and safety signage are displayed on site. The Contractor shall provide a standard first aid kit at the site office and at the camp. Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction.	Regular visual inspection by Safety Officer	The proponent / Appointed Contractor/ Project Manager

		The contractor is further advised to ensure that adequate emergency facilities are available on site. The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents.		
Traffic	Congestion in traffic Potential impact due to increase in traffic because the site is in the urban area or industrial area. Construction related activities are expected to have a minimal impact on the movement of traffic along the road.	Flag mans and traffic controllers should be appointed to regulate traffic flow of vehicle construction. The vehicle construction should limit speed to 40km/h and also be considerate of the surrounding land users. The responsible contractor must ensure that all drivers employed have valid driver's licenses of vehicle types they employed for, and that they have experience in driving those vehicles.	Strict operational times. Regular inspection. By Project Manager/ Safety Officer	The proponent / Appointed Contractor

Generation of waste	This can be in a form of contaminated soil, building rubble, general construction refuse and minor hazardous waste including paint tins, cleaning acids, asphalt's and oils Littering	Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land. Bins/skips shall not be used for any purpose other than waste collection and shall be emptied on a regular basis. The Contractor shall ensure that all litter is collected from the work areas daily. Soil from excavation activities must be reused as fill elsewhere on the site Ensure all hazardous materials are transported to a hazardous waste site for disposal by a licensed removal contractor.	Bins and / or skips should be emptied regularly and waste should be disposed of at a registered disposal site. Engineer / Safety Officer.	The Proponent / Appointed Contractor
Safety and Security	During the construction and decommissioning phase, earthmoving equipment will be used on site. This increases the possibility of injuries. Presence of equipment may encourage criminal activities (theft).	The contractor is further advised to ensure that adequate emergency facilities, including first aid kits, are available on site. Ensure that the contact details of the police or security company and	Security System Monitoring. Safety Procedures. First Aid Training by Safety Officer/ Project Manager.	The proponent / Appointed Contractor/Safety Officer

		ambulance services are available on site. The site must be fenced off to prevent unauthorized access during construction. All visitors must report to the site office.		

7.2. The Operational Phase

By taking pro-active measures during the planning and construction phases, potential environmental impacts emanating during the operational phase will be minimised. This, in turn, will minimise the risk and reduce the monitoring effort, but it does not make monitoring obsolete.

Impacts	Description	Mitigation	Monitoring	Responsible Body
Increased employment opportunities	Equity, transparency, should be put into account when hiring and recruiting and that committees should also take	The principles of gender equality, maximizing local employment should be implemented in the provision and establishment of jobs.	Monitored once off by the Project Manager/Proponent	Appointed Contractor/ The Proponent

	part in the recruiting process for decision makings.	Jobs for the maintenance of infrastructure and services will be created following the completion of the development. These jobs might be made available to existing labour there creating long term employment. All qualified professionals hired to work for the development should be Namibians. Other Labor or services (e.g. security guards) should be sourced from the local supplies or Security Companies within Rehoboth area.		
Improved aesthetic look of the area	The development of this project at this site is essential to improve the visual and aesthetics view of the area.	The developer should create awareness among the staff working in the proposed offices about energy conservation, waste management, saving of water and other resources. It should provide accessibility to the services provided in the building.	Regular visual inspection by Project Manager	The Proponent and Rehoboth Town Council

		Parking areas will be provided with 1 parking bay per 25m². Ensure proper and regular maintenance of the area. No illegal dumping of waste should be allowed and the site must be clear of litter at all times.		
Water demand	Namibia is a water scarcity country, therefore, the additional development like this one will increase the water demand.	This development will create employment to people from different backgrounds and with different perceptions on using water. Therefore, awareness should be created to inform people on the importance of saving water to reduce water consumption.	Monitored once off by the EO	The Proponent
Power usage	Namibia is experiencing power shortage, therefore electricity should be used wisely in order to sustain the future generation.	Power should be off in areas that are not in use/avoid unnecessary lights Avoid unnecessary printings Unplug unused electronics	Monitored once off by the EO	The Proponent

		Ditch the desktop computers Encourage use of renewable energy i.e. Solar lights at parkings to supplement the electricity supply		
Waste management	Generation of domestic waste while sewage waste will be generated from toilets	During the operations phase, the Rehoboth Town Council waste management will manage the waste disposal from the site while the proponent will ensure that waste are stored in correct waste storages. Rehoboth Town Council to develop a formal waste collection strategy and that the waste is to be collected regularly by disposed of at authorized dumping site or disposal site. Ensure maintenance of sewage system Illegal dumping should be prohibited.	Regular inspection By EO	The proponent and Rehoboth Town Council

8. ENVIRONMENTAL MONITORING PLAN

Environmental monitoring plan is part of the EMP performance assessment and will need to be compiled and submitted as determined by the Environmental Commissioner. The process of monitoring performances against the objectives and documenting all environmental activities is part of internal and external auditing. This will be coordinated by the Environmental Control Officer (ECO) / External Consultant / Suitable qualified in-house resource person. Tables 3 outline the type of information that shall need to be recorded on a regular basis by the Environmental Control Officer (ECO) as part of the monitoring process of the activities and the effects.

Mitigation	Compliance	Follow-up action required	By whom	By When	Completed
Is there an Environmental awareness training programme?					
How many people have been given environmental awareness training?					
Is a copy of the EMP on site?					
How effective is the awareness training?					

Do people understand the contents of the EMP?	
If not, where are the weaknesses?	
Ask 3 people at random various questions about the EMP.	