ENVIRONMENTAL MANAGEMENT FOR THE ESTABLISHMENT OF OTJININGANDU TOWNLANDS, SUBDIVISION OF OTJININGANDU TOWNLANDS INTO OTJININGANDU PROPER, OTJININGANDU EXTENSION 1 & OTJININGANDU EXTENSION 2 AND SUBSEQUENT REZONING ON PORTION X OF FARM EPUKIRO RESERVE NO 329, REGISTRATION DIVISION L, OMAHEKE REGION.

MEFT PROJECT NO.: 251212006792

OMAHEKE REGIONAL COUNCIL

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1. BACKGROUND

Eco-Wise Environmental Consulting cc has been appointed by Omaheke Regional Council as an independent environmental consultancy to undertake the Environmental Impact Assessment (EIA), develop an Environmental Management Plan and apply for an Environmental Clearance Certificate for the proposed subdivision and rezoning.

The Proponent (Omaheke Regional Council) proposes to establish a township namely Otjiningandu Townlands then conduct a subdivision of Otjiningandu Townlands into Otjiningandu Proper, Otjiningandu Extension 1 & Otjiningandu Extension 2 and subsequently carryout a rezoning on Portion X of Farm Epukiro Reserve No 329, Registration Division L, Omaheke Region.

The following is being proposed;

1. Subdivision of farm Epukiro Reserve No 329 situate in Registration Division L, Omaheke Region, into Portion X (Otjiningandu Townland) and Remainder

2. Subdivision of Otjiningandu Townland into portions A, B, C & Remainder situate into Registration Division L, Omaheke Region

3. Subdivision of portions A, B & C of Otjiningandu Townland into Otjiningandu Proper, Otjiningandu Extension 1 & Otjiningandu Extension 2 respectively, situate in Registration Division L, Omaheke Region

This Environmental Management Plan (EMP) has therefore been developed to manage all the impacts, which were identified during the environmental assessment of the project. The EMP has been developed in terms of the Environmental Management Act (EMA) No 7 of 2007 and the Environmental Impact Assessment Regulations of 2012. The Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulation (2012) states projects which can not be undertaken without an Environmental Clearance Certificate (ECC). The proposed project therefore falls under;

Section 5; Land use and development activities, 5.1 the rezoning of land from agricultural use to industrial use;

Section 10; Infrastructure, 10.1 the construction of (b) public roads; (g) communication networks including towers, telecommunication and marine telecommunication lines and cables.

Section 1; Energy generation, transmission and storage activities, 1 the construction of facilities for (b) the transmission and supply of electricity.

1.1. PROJECT ACTIVITIES

The project will undergo the following phases, which are rezoning and subdivision, construction and operation and this will involve the following:

Rezoning & Subdivision	**Construction Phase**	**Operational phase**
▪ Pegging of the proposed land ▪ Provision of serviced ervens	▪ Land preparation ▪ Transportation of construction material ▪ Excavations ▪ Construction of infrastructure e.g houses, shops, offices etc ▪ Electricity & water connection ▪ Other fittings (builders' works)	▪ Use of the buildings e.g houses, offices etc ▪ Maintenance (Replacing of non-functioning equipment)

2. EMP AIMS AND OBJECTIVES

The Environmental Management Plan (EMP) aims to take a pro-active route by addressing potential problems before they occur. The objectives of the EMP are therefore;

- To outline mitigation measures in order to manage environmental and socio-economic impacts associated with the project
- To ensure that the project will comply with relevant environmental legislations of Namibia and other requirements throughout the project phases.

3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

Legislations are used as guiding tools during the development of an EMP. The proponent will be required to abide to different policies, laws, regulation relating to the project. The Environmental Management Act No. 7 of 2007 was the main legislative, which was used as a guiding tool during the development of the EMP. Table 1, indicate the relevant legislations related to the project.

Table 1: Relevant legislations and policies related to the project

Aspect	Legislation	Relevant Provisions	Relevance to the Project
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	"The State shall actively promote 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" (Article 95(l)).	The aim of the EIA is to promote sustainability hence the project shall follow all the steps so as to achieve ecological sustainability.
Environmental	Environmental Management Act 7 of 2007	- States that, projects with significant environmental impacts are subject to an environmental assessment process (Section 27). - Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions on a project (Section 2).	- The EMA guided the process of the EIA. - Adverts were published in local newspapers. - The public was consulted during the process of public participation as per the requirement of the act - The EMP which will guide on the management of the environment will however be drafted as per the requirement of the act
Environmental	Environmental Impact Assessment Regulation (2012)	– Highlights projects which cannot be undertaken without an EIA. – *Land use and development activities*, 5.1 the rezoning of land from agricultural use to industrial use; – *Infrastructure,* 10.1 the construction of (b) public roads; (g) communication networks including towers, telecommunication and marine telecommunication lines and cables. – *Energy generation, transmission and storage activities*, 1 the construction of facilities for (b) the transmission and supply of electricity.	- The proposed project falls under section 5.1, 10.1 and 1. - Therefore, the project cannot be undertaken without an EIA - There will be land rezoning from agricultural use to township establishment and some portions will be zoned for industrial, residential etc. - Infrastructure in the form of roads and telecommunication shall be established i.e. under Proper, number 290 the area will be reserved for telecommunication see Appendix B, Plan Layout
	Pollution and Waste Management Bill (draft)	– The bill underpins issues such as; to prevent and regulate the discharge of pollutants to the air, water and land; to make provision for the establishment of an appropriate framework for integrated pollution	- It is definite that waste will be produced during construction and operation phases of the project, however, it is advised to comply with the bill.

		prevention and control and to regulate noise, dust and odour pollution. The bill further emphasis on the establishment of a system for waste planning and management.	- A waste management plan that follows recycling, reuse and reducing must be implemented
Water	Water Act 54 of 1956	- Prohibits the pollution of underground and surface water bodies. - Requires application of a permit to abstract water from a water resource.	- Water shall be obtained from existing boreholes. In future if need arise to drill more boreholes, there will be need to apply for a water abstraction permit
	Town Planning Ordinance 18 of 1954	– Subdivision of land situated in any area to which an approved Town Planning Scheme applies must be consistent with that scheme (S31).	– The proposed use of the project site must be consistent with the Omaheke Regional Council Scheme.
	Townships and Division of Land Ordinance 11 of 1963	– Details the functions of the Township Board including what they consider when receiving an application for Township Establishment.	– The proposed layout and land uses should be informed by environmental factors.
	Heritage Act	– The Heritage Act of 2004 makes provision for the developer to identify and assess any archaeological and historical sites of significance. The existence of any such sites should be reported to the Monuments Council as soon as possible. The Council may serve notice that prohibits any activities as prescribed within a specified distance of an identified heritage/archaeology site.	- Currently no archaeological remains have been identified. - The developers should work together with the local authority and the locals as they are the ones who know their area better

4. ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION FRAMEWORK

4.1 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN ADMINISTRATION AND TRAINING

This Environmental Management Plan (EMP) shall clearly state the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. The proponent shall appoint an overall responsible person (Environmental Control Officer) to ensure the successful implementation of the EMP.

4.2 ROLES AND RESPONSIBILITIES

Proponent (Omaheke Regional Council): has the overall responsibility for all financial and work force provisions, which will facilitate the implementation this EMP. The proponent is responsible for the appointment of other personnel responsible for the implementation of this EMP.

Competent and Monitoring authority (The Department of Environmental Affairs: Ministry of Environment and Tourism): Responsible for the review and approval of the EIA and EMP documents.

Site Manager - Required in carrying out the overall responsibility for the implementation of the EMP to ensure that all required resources and mechanisms for environmental management are in place.

Health Safety and Environmental Site Officer (HSEO) - responsible of all environmental issues (waste management) and safety of employees. The HSEO should record and report all incidents on site.

Environmental Control Officer (ECO) - required to take independent responsibility of the implementation of this EMP. ECO is contracted to conduct periodic auditing of the site, compilation of all reports to be submitted to MET: DEA for renewal of the environmental clearance certificate.

Contractors and Service Providers - all contractors (including subcontractors) and service providers are ultimately responsible for:

• Complying with the Environmental Management Plan specifications where applicable;

• Provide Environmental; Method Statements to the Site Manager with regards to how certain activities on-site will be conducted.

• Adhering to any environmental instructions issued by the Site Manager on the advice of the HSEO;

• Submitting a report, in a format and frequency as decided upon by the Site Manager, which will document all incidents that have occurred during the period before the site meeting.

The Environmental Method Statement referred to above will cover applicable details with regard to:

• Construction procedures;

• Materials and equipment to be used;

• Getting the equipment to and from site;

• How the equipment/material will be moved while on-site;

• How and where material will be stored;

• The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;

• Identified potential impacts of the activity and mitigation measures thereof;

- Compliance/non-compliance with the Environmental Specifications; and
- Any other information deemed necessary by the Site Manager.

5. ENVIRONMENTAL MANAGEMENT PLAN

The following tables forms the core of this EMP for the subdivision & rezoning, construction and operational phases of the development. The below information shown in the tables, should be used as a checklist on site, especially during the construction phase.

5.1 NEGATIVE IMPACTS ASSOCIATED WITH THE SUBDIVISION & REZONING AND CONSTRUCTION PHASE:

1. Altered land use patterns

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Altered land use patterns	Rezoning can lead to loss of farmland and green spaces if the land becomes developed. The proposed development will definitely alter the land use pattern as land will be zoned from agriculture to township establishment. The study area will be altered and the impact will not extend beyond the project boundary. The impact will be permanent as the land use will be permanently altered	• Ensure that all proposed developments will be strictly confined within the proposed townland boundary.	Rezoning	Omaheke Regional Council

2. Impact on biodiversity

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Impact on biodiversity	Clearing land for new roads, buildings and utilities often disrupts natural habitats and reduces biodiversity. It is definite that the proposed development will impact on biodiversity as land will be cleared to pave way for the development. This will also affect the habitats of the animals within the area.	• Avoid unnecessary clearing of vegetation	Subdivision	Omaheke Regional Council

3. Water resources and hydrology

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Water resources and hydrology	Increased surface runoff due to impervious surfaces (roads, pavements, roofs) can lead to flooding and decreased groundwater recharge. In addition, there might be possibilities of contamination of nearby water bodies from construction waste, sewage, or stormwater runoff carrying oils. However, it will be unlikely for the nearby surface water body (Eiseb River) to be affected as it is a distance to the proposed development. Moreover, they might also be an increased demand for water supply, which may strain local aquifers.	• Proper drainage planning • Proper water planning and management to ensure adequate supply to the increasing population • Drill more boreholes in cases that the available water sources can no longer adequately cater for the increasing population	Construction	Omaheke Regional Council

4. Impact on soil

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Impact on soil	Construction activities (grading, excavation) can lead to soil compaction and erosion. Soil might be partly affected by oil or fuel leakages from vehicular activities, paints and cement.	• On completion of works (in phases), all temporary structures, surplus materials and wastes to be completely removed • After completion of construction, the surrounding area where the extra soil and remaining construction material must be cleared and levelling must be done so that the original condition is restored. • Proper care should be taken so that there is no spill that would cause soil contamination • Hazardous waste properly handled and sent for disposal to appropriate disposal areas • Fuels shall not be kept/stored at the site	Construction	Omaheke Regional Council

5. Dust

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Dust	Construction activities might generate dust which might end up affecting neighbours to the site. However, the impact is expected to be of low environmental significance given that the project will be conducted in phases.	• Use of dust suppression methods (regular sprinkling of water) • Employees at the site should be provided with respirators • Regular monitoring and review to ensure safe operation.	Construction	Omaheke Regional Council, Contractors

6. Noise impact

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Noise	During construction phase, noise above the ambient levels of the area is not expected to be generated. Noise might be generated from frequenting trucks undertaking the civil works or ferrying materials, waste and equipment to and from the site. Activities such as excavation and grading also have the possibility of increasing noise levels. Noise generated might affect employees working at the site.	• Working hours should be limited to minimum of 8 hours per day • Noise should be addressed and mitigated at an early stage of construction phase. • Proper and timely maintenance of machineries and vehicles	Construction	Omaheke Regional Council, Contractors

7. Generation of waste

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Generation of waste	During construction phase, waste will be generated mainly in form of construction waste and construction effluent (grey water). In general, the impact of waste is expected to be localized and it will be of low environmental significance.	• Recycle and Reuse • Contaminated wastes in the form of soil, litter, building rubble and other material must be disposed at an appropriate disposal site. • Strictly, no burning of waste on the site or at the disposal site, as it causes environmental and public health impacts • To avoid contaminating the soil and underground ecosystem, no wastewater should be disposed on soil. • Regular inspection of the site • Portable toilets should be available at the site during construction phase. Regular servicing and maintenance of vehicles and machinery to avoid leakage of oils and lubricates	Construction	Omaheke Regional Council, Contractors

8. Heritage impact

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Heritage	At the site, there are no known heritage areas or artefacts deemed to be impacted by the operations. In addition, if the proponent come across archaeological features or objects that possess cultural values (e.g. Pottery, bones, shells, ancient clothing or weapons, ancient cutlery, graves etc.), the area should be barricaded off and the relevant authorities should be contacted immediately.	• All works are to be immediately ceased should an archaeological or heritage resource be discovered. • The National Heritage Council of Namibia (NHCN) should advise with regards to the removal, packaging and transfer of the potential resource.	Construction	Omaheke Regional Council, Contractors

9. Traffic impact

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Traffic Impact	Movement of construction vehicles along existing roads might pose a threat to road users. Heavy trucks do not only have the risk of causing accidents due to their limited maneuverability but also place added pressure on the roads, which can consequently cause potholes.	• The responsible contractor must ensure that all drivers employed have valid driver's licenses of vehicle types they are employed for, and that they have experience in driving those vehicles. • The contractor must ensure that there is always a supervisor on site to ensure that no driver under the influence of alcohol or narcotics is driving company vehicles.	Construction phase	Omaheke Regional Council, Contractor, Site Manager

5.2 NEGATIVE IMPACTS ASSOCIATED WITH OPERATION PHASE:

1. **Population influx**

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Population influx	The new development will bring new and more people in the area. The fact that people will be coming from different locations and meeting at one place can result in anti-social behaviours like prostitution hence the spread of HIV/AIDS. Criminal acts and subsequently security threats might also end up being high. In addition, increase in number of people can also result in strain on resources and also generation of more waste.	• To increase the number of police personnel at Eiseb Police Station • Sensitization campaign on HIV/AIDS and other STDs to be promoted via the local clinic • Ensure adequate bins around the township • Safeguard on illegal settlements around the area • Adequate street lights • Frequent patrol by the police	Operation	Omaheke Regional Council, Contractors

2. Risk and spread of HIV/AIDS

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
HIV/AIDS	Development brings new and more people in the area hence the possibilities of anti-social behaviours like prostitution hence the spread of HIV/AIDS	• Sensitization campaign on HIV/AIDS and other STDs by the local clinic • Free distribution of condoms by the local clinic	Operation	Omaheke Regional Council

3. Cumulative impacts

Impacts	Description	Mitigation Measures	Project Phase	Responsibility
Cumulative impacts	The development will bring more people in the area, which can consequently strain the resources like water, generate more waste, increase crime rates, increase the spread of HIV/AIDS, STI.	• To increase the number of police personnel at Eiseb Police Station • Sensitization campaign on HIV/AIDS and other STDs to be promoted via the local clinic • Ensure adequate bins around the township	Operation phase	Omaheke Regional Council

5.3 POSITIVE IMPACTS ASSOCIATED WITH THE PROJECT

1. **Provision of serviced land**

Impacts	Description	Enhancement Required	Project Phase	Responsibility
Provision of serviced land	The proposed development will definitely result in provision of serviced land improving access to services such as water, sewer, roads and electricity. Title to land will be provided to people who will buy the land and this can add value to the land and also the land can be used as collateral for bank loans and any other forms of financial assistance requiring security.	• Transparency on the distribution of the stands • Priority should be given to low income earners when selling the residential stands.	Operation phase	Omaheke Regional Council

2. Employment creation

Impacts	Description	Enhancement Required	Project Phase	Responsibility
Employment creation	It is definite that jobs will be created during the life span of the project. The type of jobs will range from skilled, semi-skilled and unskilled.	• Employ locals in all casual labour in the construction and operation phase • Equity, transparency, to be put into account when hiring and recruiting	Construction & Operation phase	Contactors

3. Aesthetic Enhancements

Impacts	Description	Enhancement Required	Project Phase	Responsibility
Aesthetic Enhancements	Alteration of the rural landscape into a modernized setting affects scenic value. Currently, the area is a settlement with fewer infrastructure therefore the development will beautify the area.	• Proper maintenance of the buildings during operation phase	Operation	Omaheke Regional Council

4. Increased Economic Activities and Revenue

Impacts	Description	Enhancement Required	Project Phase	Responsibility
Increased Economic Activities and Revenue	The development will increase the economic activities and revenue for the government through taxes. The taxes will be generated through businesses that will be formed to service the increased population. More taxes will also be generated through contracted and subcontracted companies.	• The contractors and subcontractors will pay taxes as stipulated by the law of Namibia.	Operation	Appointed contractors

6. ENVIRONMENTAL MONITORING

A monitoring programme will be in place not only to ensure conformance with the EMP, but also to monitor any environmental issues and impacts which have not been accounted for in the EMP that are, or could result in significant environmental impacts for which corrective action is required. The Site Manager and HSEO will ensure that the monitoring is carried out. The Environmental Control Officer will ensure compliance with the EMP, and to carry out monitoring/auditing activities. The Environmental Control Officer must have the appropriate experience and qualifications to undertake the necessary tasks. The Environmental Control Officer will report to the proponent should any non-compliance be evident or corrective action necessary. The suggested monitoring details are outlined in table 2 below.

Table 2: Monitoring of identified impacts

IMPACT	RECEPTORS	TYPE OF MONITORING	FREQUENCY
Dust	Employees Surrounding areas	• Regular site inspections	Daily
Noise	Employees Surrounding areas	• Noise monitoring	Daily
Impact on soil	Environment.	• Monitoring moisture content & texture of soil	• Quarterly
Generation of waste (solid)	Land	• Site inspection on housekeeping • Regular collection of waste	• Daily • Weekly
HIV/AIDS	Employees Locals	• Free testing	• Annually
Population influx	locals	• Security system	• Daily

7. CONCLUSIONS

The above Environmental Management Plan, if properly implemented, will help to minimise adverse impacts on the environment. Where impacts occur, immediate action must be taken to reduce the escalation of effects associated with these impacts.

The Environmental Management Plan should be used as an on-site reference document during all phases of the proposed development and auditing should take place in order to determine compliance with the EMP for the proposed site. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.