

ENVIRONMENTAL MANAGEMENT PLAN (EMP)



FOR THE PROPOSED ESTABLISHMENT OF FLEXIBLE LAND TENURE SCHEMES IN OURAB INFORMAL SETTLEMENT, KAMANJAB LOCAL AUTHORITY AREA

Prepared for:



Ministry of Agriculture, Water and
Land Reform



SEPTEMBER 2024



+264 61 225 776 / +264 811 220 114



info@tec.com.na / www.tec.com.na



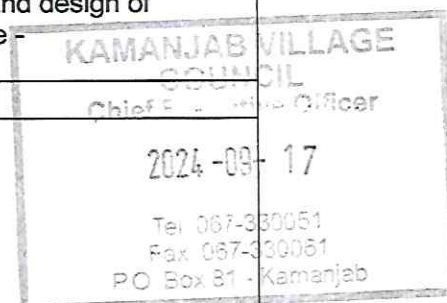
P.O.Box 35473, Kleine Kuppe, Windhoek



Unit 17, No. 40, Berg Street, Klein Windhoek, Windhoek, Namibia



DOCUMENT INFORMATION		
Title	Environmental Management Plan (EMP) - ECC Application to Establish Flexible Land Tenure Schemes in Ourab Informal Settlement, Kamanjab Local Authority Area	
ECC Application Reference number	APP- 004560	
Listed Activity	<p>Activity 5: Land Use and Development Activities 5.1 (d) The rezoning of land from – use for nature conservation or zoned open space to any other land use.</p> <p>Activity 8: Water Resource Development 8.1 The abstraction of ground or surface water for industrial or commercial purposes</p> <p>Activity 10: Infrastructure 10.1 (a) The construction of - oil, water, gas and petrochemical and other bulk supply pipelines</p> <p>(b) The construction of – Public roads. 10.2 The route determination of roads and design of associated physical infrastructure where - (a) it is a public road</p>	
Location	Ourab Informal Settlement, Kamanjab	
Proponent	<p>Mr. Tjitjita Pakarae Property Land Management Clerk Kamanjab Village Council P O Box 81, Kamanjab, Namibia Tel: 081953 0953 Email: kam.vil.cou.pro@gmail.com</p>	
	Signature	Date
		17/09/2024
Author:	Signature	Date
Ms. Laina Alexander		17/09/2024
Reviewer:		
Mr. Jonas Heita (EAP)		17/09/2024
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ACRONYMS

DEA	Department of Environmental Affairs
DSR	Draft Scoping Report
DWNP	Directorate of Wildlife and National Parks
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
ECC	Environmental Clearance Certificate
ECO	Environmental Compliance Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act (No. 7 of 2007)
EMP	Environmental Management Plan
FLTA	Flexible Land Tenure Act (Act No.4 of 2012)
FLTS	Flexible Land Tenure System
GHG	Greenhouse Gases
HPP2	Harambee Prosperity Plan 2
KfW	Kreditanstalt für Wiederaufbau
I&APs	Interested and Affected Parties
MAWLR	Ministry of Agriculture, Water and Land Reform
MEFT	Ministry of Environment, Forestry and Tourism
PPE	Personal Protective Equipment
SM	Site Manager
TEC	Tortoise Environmental Consultant



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1. INTRODUCTION

1.1. Background

Following independence, Namibians were finally allowed to settle anywhere in the country. This triggered the rural to urban migration trend as liberated Namibians sought for a better life through employment and better education. This brought new challenges to local authorities, specifically in terms of land provision and the associated municipal services. Informal settlements in Namibian towns are expanding more rapidly than formal ones, contributing significantly to overall urban growth (Weber, 2017).

In efforts to find a solution to land delivery in proclaimed urban areas, the government through the Ministry of Land Reform, passed the Flexible Land Tenure Act (FLTA) in 2012, followed by the regulations to the Act in 2018.

1.2. Terms of Reference

The Ministry of Agriculture, Water and Land Reform (MAWLR) and the Kamanjab Village Council are jointly implementing the Flexible Land Tenure System (FLTS) under the provisions of the Flexible Land Tenure Act, 2012 (Act No: 4 of 2012) (FLTA). Consequently, the Kamanjab Village Council has selected the Ourab Informal Settlement as a suitable location to establish the Flexible Land Tenure Scheme (FLTS).

Tortoise Environmental Consultants was appointed by the MAWLR to conduct Feasibility and Desirability studies to assess the practicality and suitability of establishing either a Starter Title or Land Hold Title Scheme on the piece of land concerned.

1.3. Project Rationale

Ourab Informal settlement is the biggest informal settlement in Kamanjab and it has approximately 420 residential erven and a population of over 2000 inhabitants. Although the residents have access to essential services such as clean water, sanitation facilities, the newly installed sewer system and soon electricity, they do not have legal rights to their land (tenure security). Lack of tenure security often limits the amount and type of investment that residents make on their land.

The proposed establishment of FLTS in the settlement aims to provide tenure security. This initiative is intended to subsequently lead to the provision of municipal services in the settlement, thereby improving the livelihoods of the residents.

1.4. Motivation for Environmental Clearance Certificate (ECC) Application

The proposed project triggers a number of Listed Activities that may not be carried out without an ECC as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) (herein referred to as the EMA) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) (herein referred to as the EIA Regulations).

1.5. Environment versus Development

Balancing environmental sustainability and economic development is crucial in the context of Environmental Impact Assessments (EIAs), particularly when implementing systems such as the Flexible Land Tenure System (FLTS).

The FLTS seeks to economically empower low-income populations by providing secure and affordable land tenure, thereby encouraging investment. Successfully implementing the FLTS demands thorough planning that integrates environmental sustainability with economic development.

1.6. The Purpose of Flexible Land Tenure System (FLTS)

The Flexible Land Tenure System was established to provide secure, affordable, and legally recognized land tenure for Namibia's urban poor, thereby contributing to improved living standards, social stability, and economic development.

Objectives of the FLTA are:

- a) To create alternative forms of land title that are simpler and cheaper to administer than existing forms of land title;
- b) To provide security of title for persons who live in informal settlements or who are provided with low-income housing;
- c) To empower the persons concerned economically by means of these rights.

The FLTA provides for two types of new Titles: The Starter Titles and, Land Hold Titles. These forms of land title are simpler and cheaper to administer than existing forms of land title. These new types of secure land tenure can provide security of title for people who live in informal settlements and people who are provided with low-income housing.

1.7. Environmental Management Plan (EMP) Context

This document constitutes the Environmental Management Plan (EMP) for the application of an Environmental Clearance Certificate for the Proposed

Establishment of FLTS in Ourab Informal Settlement within Kamanjab Village Council.

The EMP has been developed in accordance with the provisions of the Environmental Management Act (Act No.7 of 2007), the EIA Regulations of 2012 and any other relevant/applicable legislation (across all sectors).

1.8. What is an EMP?

The Environmental Management Plan (EMP) is a tool used to mitigate potential environmental risks associated with the proposed project/activity and provides a risk management strategy and logical framework for the implementation of the activities associated with the proposed infrastructure upgrade. This is done to minimize potential environmental and social impacts identified during the EIA process, in accordance with the provisions of the Environmental Management Act (Act No.7 of 2007), EIA Regulations of 2012 and any other relevant/applicable legislation.

As a result, the EMP recommends mitigation measures in order to ensure that the recommended project and associated activities are conducted in an environmentally friendly manner and in accordance with the provisions of the Environmental Management Act and EIA regulations

Furthermore, the EMP outlines specific roles and responsibilities for role-players against which they can be evaluated, and non-compliance is punishable.

1.9. Purpose of the EMP

The purpose of the EMP is to identify potential environmental and social impacts associated with the upgrading and operation activities, in-order to ensure compliance to the EMA.

The EMP aims to ensure that the activities undertaken during the establishment of FLTS are conducted in accordance with the following:

- i. Environmental Management Act (No. 7 of 2007),
- ii. EIA regulations of 2012 (GN: 30), and
- iii. Best environmental practices (benchmarks)
- iv. Any other applicable legislation (*as presented in Table 3.1 to 3.3*)

The EMP provides environmental guidelines to be adhered to, throughout the lifespan of the project activities.

1.10. Objective

The objective of the EMP is to prevent/minimize (where possible), unacceptable and adverse environmental, social or economic impacts that may arise from the proposed development. Overall, the EMP aims to minimise negative impact/s (real, potential or perceived) that may result from the proposed establishment of FLTS.

1.11. EMP Scope

The EMP does not only focus, and it is not limited to the establishment of FLTS in the Ourab informal settlement. It includes the bigger picture and serves as the guiding tool to protecting the natural, bio-physical and socio-economic environment on both the specific site and the surrounding area. The bigger picture is important because some impacts may not be confined to the settlement.

1.12. Possible adjustments to the EMP

The EMP is an open-ended document and may be considered inconclusive. In other words, the EMP should allow room for adjustments if new information becomes available at a later stage, in which new/additional mitigation measures may become necessary.

The necessity of possible adjustments to the EMP at a later stage may be attributed to:

- a) Lack of information at the time of drafting the initial EMP,
- b) Evolution or addition of new activities, or
- c) Unintended omission of potential impacts during the initial EIA scoping exercise and development of the initial EMP.
- d) Development of industry best practices.

This implies that, in addition to the information contained herein, any other relevant information that may surface during the renovation, construction and operations, through internal monitoring or auditing by the Environmental Compliance Officers (ECOs), can be added to the EMP (evolution of activities), and such changes or inclusions will be binding to the proponent and all contractors / sub-contractors.

1.13. Implementation Framework and Accountability to the EMP

For effective implementation of the EMP, the Institutional roles are presented below. However, the institutional framework, as well as the specific roles and responsibilities are defined and broken down in Sections 4 and 5 respectively.

Table 1-1: Role players, Institutional Framework

Role-player	Company / Institution	Role
Proponent	Kamanjab Village Council	Compliance to the EMP
Environmental Consultant	Tortoise Environmental Consultants (TEC)	Development of the EMP
Environmental Compliance Officer/s (ECO)	Ministry of Environment, Forestry and Tourism – Department of Environmental Affairs (DEA)	Monitoring Compliance with EMP: <ul style="list-style-type: none"> ➤ Un-announced spot checks, ➤ Corrective measures, warnings, penalties/fines, license suspension, etc
Public	Interested and affected parties (I&APs)	Report to the ECO, any activity of environmental concern (e.g. Pollution, safety risks, etc.)

2. PROJECT INFORMATION

2.1 Project Area Description

Ourab Informal Settlement was established in 2014.

The Settlement is situated within the Kamanjab Village Council Townland, specifically on Portion 190 Kamanjab Virgin Townland, which remains un-proclaimed and un-surveyed.

It covers an area of approximately 2-3 hectares making it the largest informal settlement in Kamanjab, with approximately 420 residential plots each plot measures plus/minus 400sqm with a population of around 1200-1600 people.

GPS coordinates: Latitude -19.632500 and Longitude 14.836085

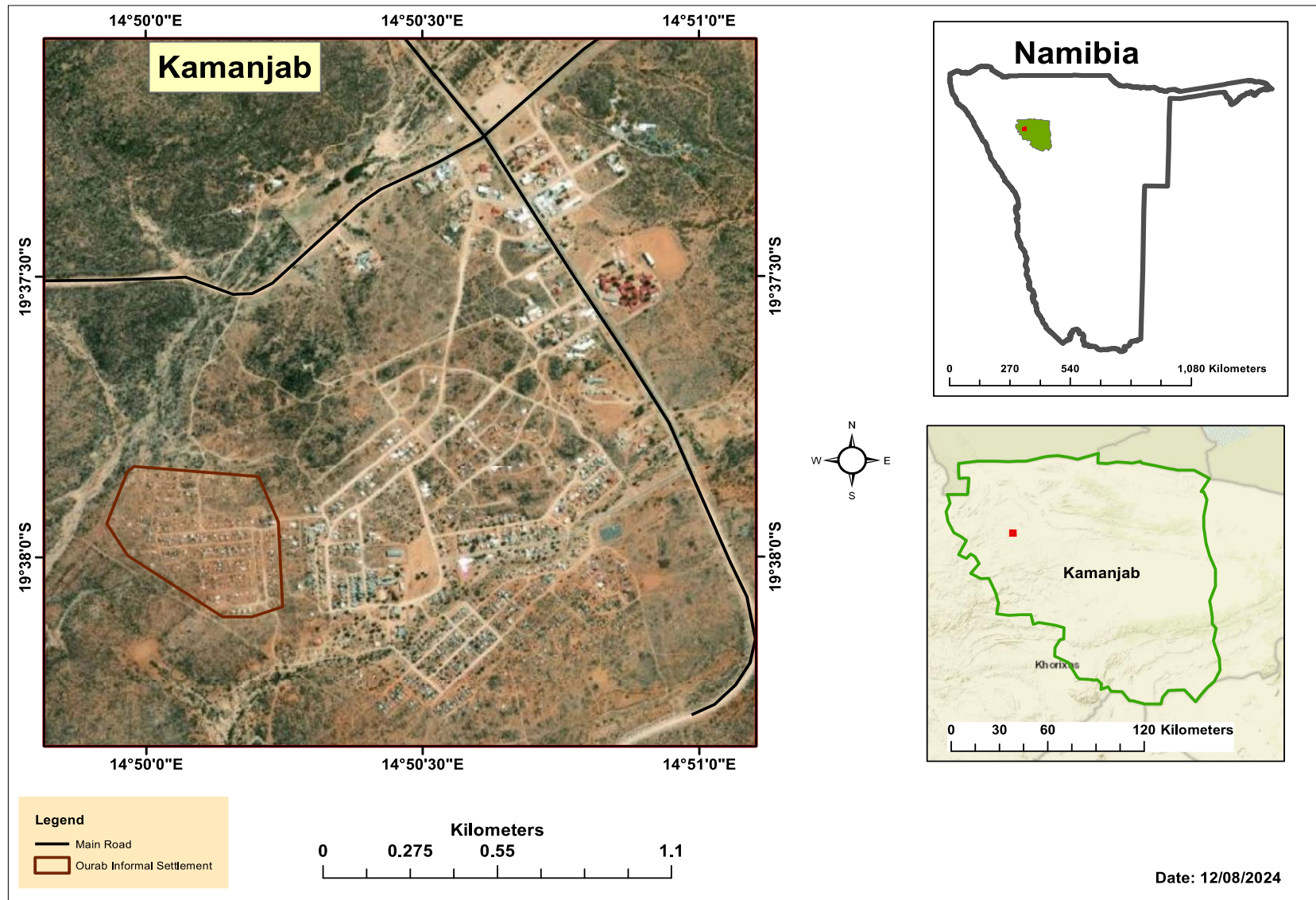


Figure 2-1: Locality map of Ourab Informal Settlement

3. COMPLIANCE AND LEGAL FRAMEWORK

This chapter outlines the regulatory framework applicable to the proposed project. Table 6.3 provides an overview of applicable policies, plans and strategies, while Table 6.4 provides a list of other applicable national legislation.

3.1 Compliance to the EMP

The EMP is binding to the proponent, and all contractors / sub-contractors. This implies that every entity that may have any kind of engagement or involved in / with the proposed establishment of FLTS, should comply with the EMP throughout the project lifespan. Non-compliance may have serious consequences e.g. license withdrawal.

3.2 Environmental Management Act (No.7 of 2007)

Section 27 of the Environmental Management Act 2007 (Act No.7 of 2007) (EMA) provides a list of activities that may not be undertaken without an Environmental Clearance Certificate (ECC) (herein referred to as listed activities). The proposed upgrading of the APU camp triggers some listed activities (table 4.2).

The EMP should conform to the provisions of the Environmental Management Act (EMA), Act No. 7 of 2007 and EIA regulations of 2012 (Government Notice: 30).

The EIA Regulations defines a '*Management Plan*' as:

"...a plan that describes how activities that may have significant impacts on the environment are to be mitigated controlled and monitored."

3.3 EMP Requirements

Table 3-1: EMP Requirements as outlined in Section 8 of the EIA Regulations

Requirement
<p>(j) a draft management plan, which includes –</p> <p>(aa) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;</p> <p>(bb) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to</p>

its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and

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

3.4 Listed Activities

Listed Activities may not be undertaken without an Environmental Clearance Certificate (ECC), and hence an Environmental Impact Assessment (EIA) is required.

As the organ of state responsible for management and protection of its natural resources, the MEFT: DEA is committed to pursuing the principles of environmental management. The EMA provides a list of activities that requires an EIA and the proposed upgrading is among the listed activities, or activities that may not be conducted without an ECC. The purpose of listed activities for projects is to ensure that the associated impacts on the environment are carefully considered

The proposed project triggers a number of Listed Activities as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) (herein referred to as the EMA) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) (herein referred to as the EIA Regulations).

The EIA entails the development of the EIA Scoping Report and Environmental Management Plan (EMP), which should be submitted to the MEFT as part of the application for the ECC.

Table 3-2: Listed Activities triggered by the proposed project.

Listed Activity	Activity Description	Relevance to the proposed project
Activity 5 Land Use and Development Activities	5.1 (d) The rezoning of land from – use for nature conservation or zoned open space to any other land use.	The land was initially agricultural land that was then rezoned or converted to residential.

Listed Activity	Activity Description	Relevance to the proposed project
Activity 8 Water Resource Developments	8.1 The abstraction of ground or surface water for industrial or commercial purposes	Groundwater abstraction and consumption may increase due to the formalization of the settlement.
Activity 10 Infrastructure	<p>10.1 (a) The construction of - oil, water, gas and petrochemical and other bulk supply pipelines</p> <p>(b) The construction of – Public roads.</p> <p>10.2 The route determination of roads and design of associated physical infrastructure where -</p> <p>(a) it is a public road</p>	The proposed project will include the installation of bulk municipal services and the construction of roads.

3.5 Extended Developmental and Legal Framework

In addition to the EMA and Environmental Assessment Policy, there exists a host of legal and policy documents and guidelines that must be considered when undertaking an EIA as indicated in tables 5.3 and 5.4 below.

The proponent has the responsibility to ensure that the construction/operation activities conform to all other National Development Plans and legal framework.

Table 3-3: Policies, Plans and Strategies

Policy / Plan	Relevancy/Summary	Applicability to the Proposed Project
5 th National Development Plan (NDP), Vision 2030 and HPP2	Outlines the country's national development ambitions, in line with the Harambee Prosperity Plan, and Vision 2030. NDP5 incorporates the principles and recommendations contained in the Stockholm Declaration on the Human Environment (1972) and associated Action Plan, as well as Agenda 21 which merged from the Convention on Biological Diversity, Rio De Janeiro (1992).	<p>The proposed project is a development that forms part of the bigger picture of achieving economic progression, social transformation and environmental sustainability.</p> <p>The proposed project will increase availability</p>

Policy / Plan	Relevancy/Summary	Applicability to the Proposed Project
	<p>The objective of vision 2030 is to ensure <i>that the integrity of vital ecological processes, natural habitats and wild species throughout Namibia is maintained whilst significantly supporting national socio-economic development through sustainable low-impact, consumptive and non-consumptive uses, as well as providing diversity for rural and urban livelihoods.</i></p> <p>The goal of the HPP2 is to enhance the quality of life for all Namibians through the Social Progression Pillar, specifically under Goal 2, which focuses on providing urban land, housing, and sanitation.</p> <p>To improve living standards and support livelihoods, HPP2 aims to upgrade informal settlements by scaling up five existing informal settlements nationwide. This will be achieved by implementing the flexible land tenure system and issuing certificates</p>	<p>of affordable serviced land as well as create employment in construction, which will be in fulfilment to the NDP, HPP2 and Vision 2030.</p>

Table 3-4: Other Legal Instruments / National Statutes

National Statutes	Relevance/Summary	Applicability to the Proposed Project
Environmental Management Act, 2007 (Act No. 7 of 2007) and associated regulations, including the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011).	The Act aims to promote sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment. It sets the principles of environmental management as well as the functions and powers of the Minister. The Act requires certain activities to obtain an environmental clearance certificate before project development. The Act states that an EIA may be undertaken and submitted as part of the environmental clearance certificate application.	<p>This EIA report (and EMP) documents the findings of the EIA process undertaken for the proposed project, which will form part of the environmental clearance application.</p> <p>The EIA process and associated report have been undertaken in line with the requirements under the Act and associated regulations.</p>
Flexible Land Tenure Act 2012 (Act No.4 of 2012)	The Flexible Land Tenure Act, 2012 (Act No: 4 of 2012) in Namibia aims to provide secure, affordable, and legally recognized land tenure for urban poor communities, particularly those in informal settlements. The Act introduces two new forms of land titles that are simpler and cheaper to administer than traditional freehold titles.	<p>Implementing the FLTS in Ourab informal settlement aligns directly with the primary objective of the FLTS.</p> <p>It will offer residents Starter Titles and Land Hold Titles. This will help formalize their land occupancy, giving them legal recognition and protection against evictions.</p>

National Statutes	Relevance/Summary	Applicability to the Proposed Project
Urban and Regional Planning Act 5 of 2018	<p>The Act consolidates the laws relating to urban and region planning:</p> <ul style="list-style-type: none"> - To provide a legal framework , principles and standards for spatial planning - To provide for preparation, approval and review of the national special development framework, regional structure plans <p>To provide for the subdivision and consolidation of land</p>	<p>The Act provides for regulatory oversight of land use and development, ensuring that flexible land tenure arrangements adhere to national and regional planning policies, environmental regulations, and other legal requirements.</p>
Water Act, 1956	<p>This rather out-dated Act that remains in force, provides for the control, conservation and use of water for domestic, agricultural, urban and industrial purposes; to make provision for the control, in certain respects, of the use of sea water for certain purposes; and for the control of certain activities on or in water in certain areas. The Ministry of Agriculture, Water and Land Reform (MAWLR) Department of Water Affairs is responsible for administration of the Water Act.</p>	<p>Water pollution is an offence as per Section 23 of the Water Act.</p> <p>The Act stipulates obligations in Part 13 of general provisions relating to water pollution and prohibits the discharge of wastewater, effluent or waste without licence and sets forth specific requirements for such licence.</p> <p>The EMP sets out measures to avoid polluting the environment.</p>
Water Resources Management Act 2004 (Act No. 24 of 2004)	<p>Whilst approved and published in the Government Gazette, it is not legally enforced.</p> <p>Based on the National Water Policy and provided for the management, development, protection, conservation, and use of water resources; and it established the Water Advisory</p>	<p>Whilst not in operation, it is best practice to adhere to the conditions in this Act.</p> <p>The 2013 Act would repeal this Act, therefore conditions in the 2013 Act have been reviewed.</p>



National Statutes	Relevance/Summary	Applicability to the Proposed Project
	Council, the Water Regulatory Board and the Water Tribunal	
Water Resources Management Act, 2013 (No. 11 of 2013)	<p>Whilst enacted it has not yet come into operation, and needs approval from the Government. This Act provides a framework for managing water resources based on the principles of integrated water resource management. It provides for the management, protection, development, use and conservation of water resource, and for the regulation and monitoring of water services and for incidental matters</p>	<p>Whilst not in operation, it is best practice to adhere to the conditions in this Act.</p> <p>The Act sets out obligations in order to avoid water pollution. Section 44 stipulates the requirements for a licence to be held for the abstraction and use of water.</p> <p>Section 68 makes provisions for water pollution. Section 69 and 72 makes provisions for waste water treatment plants and stipulates the requirement for a licence to operate waste water treatment plant and discharge effluent.</p> <p>These have been incorporated into the EMP to minimise water pollution.</p>
Soil Conservation, 1969 (Act 76 of 1969) and the Soil Conservation Amendment Act (Act 38 of 1971)	Makes provision for the prevention and control of soil erosion and the protection, improvement and the conservation, improvement and manner of use of the soil and vegetation.	Through vegetation removal there may be the risk of affecting soil quality. Measures shall be taken to avoid this which are set out in the EMP.
Forest Act 12 of 2001 Forest Act Regulations 2015	<p>To provide for the protection of the environment and the control and management of forest.</p> <p>The Act and Regulations have the following stipulations that may be relevant to the proposed project:</p>	<p>There may be some vegetation removal as part of the proposed project.</p> <p>There is no vegetation falling within 100m of the river, no permit shall be obtained prior to clearance.</p>

National Statutes	Relevance/Summary	Applicability to the Proposed Project
	<ul style="list-style-type: none"> - Approval from the Director may be required for the clearance of vegetation on more than 15 hectares (Section 23, subsection 1 (b)). - Tree species and any vegetation within 100m from a watercourse may not be removed without a permit (Section 22, subsection 1 (b)) - Provision for the protection of various plant species. This includes the proclamation of protected species of plants and the conditions under which these plants can be disturbed, conserved, or cultivated. 	<p>The proponent shall undertake all activities in line with the conditions stipulated in the Permit and a valid permit shall be obtained throughout vegetation clearance activities.</p> <p>It is unlikely that a permit shall be required.</p>
National Heritage Act, No. 27 of 2004.	The Act provides for the protection and conservation of places and objects with heritage significance.	There is potential for heritage objects to be found on the development site, therefore the stipulations in the Act have been taken into consideration and are incorporated into the EMP.

3.6 EMP Implementation Context

Environmental management is not only concerned with the final results of the Proponent's operations, but also with how such operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standards of the day-to-day operations required to complete the Works.

The EMP is an important tool and necessary to mitigate / counter negative environmental or social impacts that may arise from the project. However, in the absence of audits and monitoring, it will become ineffective.

3.7 Disciplinary Action

The EMP is a legally binding document and non-compliance with the EMP shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- ✓ Fines / penalties,
- ✓ Legal action,
- ✓ Withdrawal of license/s
- ✓ Suspension of work.

The disciplinary action shall be determined according to the nature and extend of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

3.8 Non-Compliance

The Proponent and Site Manager shall be deemed to have **not** complied with the EMP if:

- There is evidence of contravention of the EMP and associated indicators.
- The Proponent and SM have failed to comply with corrective or other instructions issued by the ECO or qualified authority.
- The Proponent and SM fail to respond to complaints from the public.

4. ROLES AND RESPONSIBILITIES

This section outlines the roles and responsibilities of the key personnel responsible for the day-to-day management of activities to ensure effective implementation of the EMP.

4.1 Roles and Responsibilities

To ensure accountability, it is necessary to assign responsibilities. The key role-players for project implementation are;

- a) The **Environmental Compliance Officer (ECO)** representing the Ministry of Environment and Tourism (MET), or an appointed independent environmental officer, who is responsible for monitoring and auditing.
- b) **The Proponent**: Owner / Project Manager.
- c) **The Site Manager** the person responsible for the day-to-day management of the project.

4.1.1 The Environmental Compliance Officer (ECO):

The ECO refers to the party responsible for the environmental monitoring and auditing to ensure that the provisions of the EMP are complied with.

The ECO shall have adequate environmental knowledge to understand and interpret the EMP and pertaining environmental aspects associated with the project. The specific tasks of the ECO are as follows:

- To undertake all monitoring and auditing activities in-order to ensure compliance with the EMP.
- Conduct site inspection prior to the commencement of activities; and at reasonable intervals (e.g. every month, quarterly or annually), throughout the duration of the project. Depending on the risks, some projects may be inspected more frequently (e.g. every month).
- Conduct regular inspections (unannounced spot checks) and shall submit compliance or non-compliance reports to the respective authorities (MEFT or any other relevant authority).
- Compile Progress Reports immediately after site inspections, Compliance Reports, pertaining to any non-compliance incident/s, and a Rehabilitation Report following the conclusion a specific activity.
- The ECO shall liaise closely with all key stakeholders i.e. the Site Manager and the Environmental Commissioner.

- Shall provide guidance on any environmental management issues, incidents or emergencies that may arise throughout the project lifespan.
- Shall assist in providing recommendations for remedial action in the event of non-compliance.
- Auditing or monitoring activities may involve investigation, as well as structured observation, measurement, and evaluation of environmental data over a period of time.

4.1.2 The Proponent:

The specific responsibilities of the Proponent are as follows:

- Appoint a Project Manager (PM) to oversee the daily onsite activities.
- Liaise closely with the PM and ECO on any environmental management issues, incidents or emergencies.
- Ensure that all activities on and around the site are conducted in accordance with the requirements of the EMP at all times.
- Ensure that all sub-contractors and visitors to the site are conversant with the requirement of the EMP, relevant to their roles on site.
- Shall develop a **communication strategy** between The Proponent, Site Manager, workers, the ECO and any other relevant stakeholder.
- Shall develop an **organisational structure** to ensure that:
 - There are clear channels of communication;
 - There is an organisational hierarchy for effective implementation of the EMP; and
 - Conflicting or contradictory instructions are eliminated;
 - Ensure that all instructions and official communications regarding environmental matters shall follow the organisational structure as determined
 - Ensure that that EMP requirements are assigned to specific people / positions with the capacity and experience required for implementation.

4.1.3 The Site Manager:

The **Site Manager (SM)** should:

- Ensure that each team recruited to work at the sites, adheres to the EMP;
- Ensure that a **copy of the EMP is kept on site at all times and as it may be requested by authorities conducting spot checks at any time.**

- Ensure that all staff attend an induction session before the commencement of any work on site and that they are adequately informed of the requirements of the EMP;
- Shall take special care to prevent irreversible damage to the environment;
- Ensure that activities are within the boundaries of the proposed zones as specified in the Site Map and boundary markings (visible pegs, tape etc).
- Accident/ Incident reporting to Proponent within 24 hours of occurrence
- Ensure that staff is controlled through the implementation of appropriate security measures,

4.2 Instructions

All instructions and official communications shall follow the organizational structure as determined by the proponent. Based on the adopted structure, it is essential that the responsibilities outlined be assigned to specific parties with adequate capacity and experience required to implement the EMP.

4.3 Disciplinary Actions

The EMP is a legally binding document. Non-compliance with the EMP may result in disciplinary action being taken against the Proponent. Such actions may take the form of;

Financial penalties, legal action, fines, and/ or Suspension of work.

The disciplinary actions shall be determined according to the nature and extend of the non-compliance, and exact penalties are to be weighed against the severity of the incident.

4.4 EMP Implementation Context

Environmental management is not only concerned with the final results of the Proponent's operations, but also with how such operations are carried out. Tolerance with respect to environmental matters applies not only to the finished product but also to the standards of the day-to-day operations required to complete the Works.

The EMP is an important tool and necessary to mitigate / counter negative environmental or social impacts that may arise from the project. However, in the absence of audits and monitoring, it will become ineffective

5. PROJECT DESIGN AND PLANNING

The EMP provides mitigation measures in accordance with the scope of work during the construction and operations of the APU camp. The recommended mitigation measures should be considered at all stages / phases of the development process as follows:

- Design;
- Planning;
- Site preparation, and
- Construction and Operational Phase

5.1 Design phase

The design phase entails the conceptual framework (what, where, how big, etc.) and architectural design (sketch and projected image), and machinery required for the proposed development.

Already at this stage, it is important that, the Architectural and Engineering designs, should take environmental aspects and standards into consideration (e.g. aesthetic value, habitat alteration, visual / image upon completion, waste management, during both the construction and operational phases, etc.).

5.2 Planning phase

During the planning phase, it is imperative that the design is re-evaluated and if any environmental concerns are detected at this stage, corrective measures should be applied. In-addition, a contingency plan should be in place, in case, unforeseen environmental concerns are detected later.

5.3 Site Preparation

To provide a systematic guide for the development of mitigations measures, the proposed development site preparation can be broken down / sub-divided into different development stages / phases as presented in the table 5.1 below.

Table 5-1: Site Preparation Phases requiring mitigation measures

Phase	Description
Phase 1	Access roads and routes
Phase 2	Site Clearing and deployment of machinery
Phase 3	Decommissioning – Removal of all unwanted material, clean-up, landscaping, and rehabilitation

5.3.1 Environmental Permits and Approvals

Relevant environmental permits and approvals may be required. It is the responsibility of both the proponent and contractors to identify the requirements for environmental and social permits during project preparation. Such permits must be obtained from the relevant authorities. Below is a list of permits that may be required:

Table 5-2: list of permits that may be required

Permit	Descriptions
Water abstraction permit	For possible drilling of boreholes.
Wastewater discharge permit	To ensure that wastewater is properly handled to avoid possible contamination of the environment
Forestry permit	For possible tree-clearing

5.4 Construction and Operational Phase

For ease of reference and monitoring during operation, the EMP is sub-divided into different themes and for each theme, the following aspects are highlighted:

- ✓ Potential Impact,
- ✓ Environmental Management Objective
- ✓ Mitigation Measures / Management Action/s required
- ✓ Indicator/s for Monitoring and Compliance
- ✓ Party responsible for implementation

6. POTENTIAL IMPACTS AND MITIGATION MEASURES

6.1 Impact Themes and Recommended Mitigation Measures

The EMP has been categorised into different themes, which serve as a quick guide to the recommended EMP remedial actions during the construction and Operation stages (Table 9.1 to 9.5).

EMP Themes	Specific Aspects
A – Staff induction	Induction
	Site Demarcation
	Communication
	General park rules/ regulations
B – Health and Safety	General safety at work place
	Road Safety
	Ablution facilities
	Dust and Noise
C – Pollution and Waste Management	Wastewater (Ablution facilities)
	Solid Waste Disposal
	Oil Spills
	Vehicle emissions (smoke)
D – Socio economic	Employment opportunities
	Alcohol and Drug use
	Working hours
	HIV / AIDS
	Safety and Security
E – Cultural Heritage	Heritage resources / artefacts
F – Rehabilitation	Clean-up and maintain natural / original appeal

SECTION A: STAFF INDUCTION

Table 6-1: Mitigation measures pertaining to staff Recruitment and Induction

<u>Potential Sources of Impacts:</u>				
<ul style="list-style-type: none"> ✓ Employees working without employment contracts (recipe for labour disputes) ✓ Lack of adequate induction to inform the workers about the Do's and Don'ts ✓ Poor Communication ✓ No formal presentation of the EMP and employees are not aware of the content and risks associated with the activities/actions ✓ Employees not adhering to the general park rules and regulations (recipe for injuries, deaths, poaching etc.) ✓ Non permitted presence of people in the park - poaching 				
Impact	Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsible Party
Recruitment	To ensure that all workers have employment contracts (Labour Act No. 11 of 2007)	<p>Formalize recruitment of all staff with Contracts, stating nature of employment, duration and remuneration to protect both parties and to avoid labour disputes later on</p> <p>No recruitment of new staff will take place on site. Recruitment of staff must take place prior to commencement of work and formalized by employment contracts. Employees should be fully vetted and should keep a copy of their employment contract at all time.</p>	<p>Copies of staff contracts</p> <p>Copies of staff Identification Documents</p>	Proponent / Site Manager



Staff Induction	To ensure that all staff / employees are conversant with the requirements of the EMP	<p>Induction for all workers on the provisions of the EMP before work commencement, covering but not limited to: Safety, Health and Environmental (SHE) measures, emergency response, reporting of incidents, HIV/AIDS awareness, alcohol and substance abuse, etc</p> <p>Staff operating equipment (such as trucks, loaders, jack hammers, compressors etc.) shall be adequately trained and sensitised against potential hazards</p> <p>Conduct Quarterly induction reviews and reflect on workers conduct</p>	<p>Induction Minutes and Attendance Register, Signed by each and every staff members</p> <p>Staff members appointed at a later stage should also undergo induction</p> <p>Quarterly minutes</p>	Site Manager
	Availability of the EMP on site for ease of reference	Ensure that a copy of the EMP is kept on site and accessible by team leaders	Availability of EMP on site and accessibility by team leaders	Site Manager
	Punitive measures for staff, to ensure compliance	Adopt a disciplinary system to discipline staff for non-compliance, for offences such as littering, speeding, safety risk (both to themselves and to others), not using ablution facilities, etc.	Number of fines issued daily / per month	Site Manager
Communication	Ensure effective communication throughout the project lifespan	<p>Develop a communication strategy (Chanel & medium of communication)</p> <p>All correspondence should be written and signed off by witnesses (e.g Site Manager / team leaders)</p>	<p>Communication Strategy</p> <p>Letters, e-mail, Notices, Minutes</p>	Site Manager

		The contact numbers for the Site Manager and Team Leaders must be available onsite (displayed) in case of emergencies.	List of contact numbers available on site	
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SECTION B: OCCUPATIONAL HEALTH AND SAFETY

Table 6-2: Mitigation measures pertaining to Health and Safety

Potential Sources of Impacts:				
<ul style="list-style-type: none"> ✓ Inadequate awareness of employees or contractors on general health and safety risks ✓ Safety hazards associated with the equipment handling ✓ Employees not receiving the correct Personal Protective Equipment (PPE) ✓ Employees not adhering to safety rules implemented at the site 				
Impact	Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsible Party
General Occupational Health and Safety of the employees (injuries)	To ensure safe working conditions and adhere to the Health and Safety Regulations, Government Notice 156/1997 (GG 1617)	<p>Develop a Health and safety Plan</p> <p>Identify potential hazards to minimize potential health and safety risks.</p> <p>Provide adequate and appropriate personal protective equipment for all workers</p> <p>Training on relevant aspects of occupational health and safety for all workforce involved in construction activities in the project context.</p>	<p>Health and Safety Plan</p> <p>Hazard risk report and Safe work condition audit</p> <p>Adequate protective gear for all staff (issue register)</p> <p>Training schedule, attendance register, report, pictures, etc</p>	Site Manager/



Accidents and incidents	To ensure safe working conditions	<p>Document and report occupational injuries, illness and fatalities, including near misses.</p> <p>Investigate causes and take appropriate action to eliminate risks where possible</p> <p>Provide adequate access to first aid and medical assistance in cases of work-related accidents or injuries</p>	<p>Accidents and incidents register/ reports (including near misses)</p> <p>Root causes analysis report.</p> <p>Incident review (cause and elimination of hazard).</p> <p>First aid kit availability and adequacy audit report</p>	Site Manager
Road Safety	To prevent traffic hazards / inconveniences from earth moving machinery during and construction period	<p>Signage for vehicles and earth moving machinery</p> <p>All trucks transporting materials (e.g sand / gravel) should be covered with suitable material (e.g net, tarpaulin, canvas etc).</p>	Public Complaints / Incident report/s	Site Manager
Ablution Facilities	To reduce health risks and environmental pollution and ensure healthy working environment with appropriate and	<p>Ensure adequate, hygienic (clean) and user-friendly ablution facilities for all staff. Mobile chemical toilets are recommended during construction</p> <p>Wastewater should be discharged in accordance with the effluent discharge</p>	<p>Inspect ablution facilities regularly (daily)</p> <p>Availability of toilets, cleanliness and hygienic ablution facilities</p>	Site Manager



	user-friendly ablution facilities	<p>regulations. No faecal waste should be discharged on site</p> <p>Appoint a cleaner or rotate cleaning responsibilities among workers. If necessary, designate Male and Female toilets</p> <p>Ablution facilities must be located at least 100 m away from streams or freshwater systems and regularly serviced.</p>	Incidents or complaints of waste discharge into the environment	
Dust and Noise	To mitigate dust and noise impacts to both employees and the public	<p>Adopt applicable dust suppression measures to mitigate dust impacts,</p> <p>Provide dust masks and earmuffs to all employees operating in a dusty or noisy environment.</p>	<p>Dust and Noise Incident Reports</p> <p>Issue register</p>	Site Manager
Fire Risk / Hazard	To mitigate fire risk	<p>Fires should only be started at designated fire areas in the camp, such as secured cooking place.</p> <p>Avail sufficient fire extinguishers and train staff on how to use them</p> <p>Demonstrate the use of fire extinguishers and fire hydrants</p>	<p>Monitoring of illegal fire places and handing of fines</p> <p>Availability of fire extinguishers and service record.</p> <p>Training report, attendance register, pictures, etc.</p>	Proponent/ Site Manager

SECTION C: POLLUTION AND WASTE MANAGEMENT

Table 6-3: Mitigation measures pertaining to Waste Management

Potential Sources of Impacts:				
<ul style="list-style-type: none"> ✓ Poor waste disposal (often considered insignificant e.g. littering, oil spills, cement mixers, wash, wastewater, etc) ✓ Leaking or broken sewerage pipes ✓ Storage of unwanted waste (e.g. old / waste tyres) 				
Impact	Objective	Mitigation Measures	Indicators for Monitoring and Compliance	Responsible Party
Waste Water	To avoid effluent discharge into the environment	<p>Refer to regulations on effluent disposal and recommended septic tank and drainage design</p> <p>Be on the look-out and repair any leaking or broken sewer pipes (regardless of how small it may be perceived).</p> <p>Use of the best available technologies to prevent possible wastewater leakages</p>	No leakage of sewer pipes	Site Manager or dedicated Plumber
Solid Waste	To prevent pollution and maintain a clean environment	<p>Classify waste into different categories e.g. Material waste (wood, steel, corrugated iron etc), Building rubble (concrete), Garden Waste (tree stumps, branches etc), and Domestic Waste (Litter – cans, plastics, tissues etc)</p> <p>Ensure appropriate removal and disposal of all construction and mechanical wastes (building</p>	<p>Scattered waste, Littering and any other unsightly waste at the site (eyesore)</p> <p>No traces of construction, materials,</p>	Site Manager / dedicated Waste Disposal Officer



		<p>rubble, concrete, iron steels, damaged equipment, vehicles etc.)</p> <p>Ensure appropriate waste collection and removal from the site and dispose at appropriate municipal waste disposal sites.</p>	equipment are left behind	
Vehicle emissions	Reduce greenhouse gas (GHG) emissions from poorly maintained or malfunctioning equipment (vehicles / machinery	All vehicles and equipment shall be kept in good working order and serviced regularly (in accordance with the servicing frequency of the specific machinery), in order to prevent emission of poisonous smoke etc.	<p>Vehicle servicing records</p> <p>Reports of smoke emissions from machinery</p>	Site Manager
Oil Spills	Ensure waste oil is managed appropriately and pollution is prevented at all costs	<p>Provide concrete bund/s for fuel storage and transfer on site. The bund should be bigger than the fuel storage tank/s to allow a bit of working space around tank/s (e.g. 20% bigger than the tank/s)</p> <p>Use of sheeting to prevent soil contamination (e.g. during vehicle servicing)</p> <p>Waste oil should not be stored onsite indefinitely and should be recycled (transfer to oil recycling companies)</p> <p>If an oil spill occurs, collect the contaminated soil, store in drums and dispose at appropriate waste disposal site (e.g. Municipal disposal site)</p>	<p>Concrete bund at all fuel storage and handling sites</p> <p>Drums or containers for oil recycling and proof of oil transfer to recycling companies</p>	Site Manager

SECTION E: SOCIO-ECONOMIC

Table 6-4: Mitigation measures pertaining to Socio-Economic impacts

<u>Sources of impacts:</u> <ul style="list-style-type: none"> ✓ Unfair labour practices and unwillingness to recruit locals ✓ Gender-based violence (GBV) and sexual harassment ✓ Inability to deal with workforce and stakeholder (public) concerns and grievances ✓ Lack of awareness on HIV-AIDS ✓ Drug and alcohol abuse 				
Impact Description	Objective	Mitigation Measures / Management Actions	Indicators for Monitoring and Compliance	Responsible Party
Employment opportunities for Locals	Promote benefits to the local community	Recruit locals for unskilled labour.	Employee structure and proportion of local employment	Site Manager
Alcohol abuse and Drug use	Prevent alcohol and drug use (substance abuse) at the APU camp development site	Ban and warn the employees against alcohol abuse and consumption of prohibited substances e.g. drugs Provide awareness on the dangers and health impacts of alcohol and drugs	Drunk / Misbehaving employees Monitor presence of prohibited substances	Site Manager



Excessive working hours	Adhere to the Labour Act No. 11 of 2007	Adhere to prescribed working hours as per the Namibian Labour laws and regulations, including provision for overtime or compensatory time off. Protect the work force and prevent child labour and forced labour	Verification of working hours against the labour Act Verification of the ages of all workers (i.e. ID)	Site Manager
HIV / AIDS	Prevention of HIV/AIDS and other communicable diseases among employees	Provide HIV / AIDS awareness at induction	Availability of condoms at and construction site	Site Manager
Security	Orientation of workers about security for both equipment and themselves	Orientate workers about security for equipment and themselves & provide contact numbers for Police and other emergency services e.g. Ambulance	Proof of security orientation and emergency contact numbers	Site Manager

SECTION F: CULTURAL HERITAGE

Table 6-5: Mitigation measures pertaining to Cultural Heritage impacts

<u>Sources of impacts:</u>				
✓ Disregard of Cultural Heritage and artefacts				
Impact Description	Objective	Mitigation Measures/	Indicators for Monitoring and Compliance	Responsible Party
Heritage Resources / artefacts	Reduce the impacts of and construction and associated earthworks on heritage resources / artefacts	<p>Heritage remains or artefacts discovered on site must be reported to the National Museum (+264 61 276800) or the National Forensic Laboratory (+264 61 240461).</p> <p>No artefacts must be removed or be interfered with prior to authorisation from the Namibian National Heritage Council (NHC)</p> <p>Recovery of heritage remains or artefacts discovered and removal thereof should be directed by the National Museum</p>	Sighting report/s of heritage resources / artefacts	Site Manager

7. REHABILITATION

8.1 Importance of Rehabilitation

Socio-economic development is very important for our livelihood and provides services, income and employment opportunities, and hence activities such as township establishments are vital and necessary for development.

However, such developmental activities should be conducted in a thoughtful and forward-looking manner. Therefore, to ensure that the land remains valuable for other land uses in the future, rehabilitation should be part and parcel of such developmental activity right from the beginning and throughout the project lifespan.

8.2 What is Rehabilitation?

Rehabilitation is the process of repairing and taking all the necessary actions to limit, minimize and mitigate the damage caused by the developmental activity, in-order to make the land suitable for other uses or to simply beautify the affected area (so that it does not become an eyesore).

Rehabilitation can also be referred to as the measures taken to repair damaged environments (example refilling of excavated pits with the overburden, re-vegetating, removal of unwanted infrastructure, cleaning up pollution etc.).

8.3 Designing a Rehabilitation Plan

A rehabilitation plan refers to a set of steps or measures to be taken in-order to ensure that negative impacts associated with the development at hand are mitigated. This however requires prior planning and integration of rehabilitation activities throughout the project lifespan. Meaning, rehabilitation measures should be taken right from the beginning of the project.

The environmental characteristics of an area where a project is located plays a vital role in designing a rehabilitation plan.

SECTION G: REHABILITATION

Table 7-1: Potential impacts and Mitigation measures pertaining to Rehabilitation

<u>Sources of impacts:</u>				
<ul style="list-style-type: none"> ✓ Landscape alteration due to lack of rehabilitation ✓ Loss of topsoil due to lack of restoration measures ✓ Construction pits may become a death trap for animals ✓ Waste (Left over of broken equipment, material offcuts etc.) 				
Impact Description	Objective	Mitigation Measures/	Indicators for Monitoring and Compliance	Responsible Party
Habitat alteration and permanent environmental scars of the and construction operations	To minimize habitat alteration and environmental scars	Limit environmental damages e.g. the overburden may be collected and piled and used for re-filling of pits Plant indigenous trees to fill the gaps for trees removed during construction.	Re-filling of and construction pits with the overburden Indigenous Trees planted	Site Manager
	Landscaping	Landscaping – refers to re-shaping man-made landforms to blend in with the environment and in order to limit the damage to the natural landscape	Landscaping efforts and modification towards natural state	Site Manager
Waste discarded all over the place	Clean-up	Remove any foreign objects (including infrastructure, equipment, bricks and concrete, machinery and equipment remains), that is not needed at site upon project completion	Clean-up after project closure	Site Manager

8. CONCLUSION

It is important to note that, development takes place on land and certain materials are required from the land / environment.

This implies that, for development to take place, some part of the environment may be affected e.g access roads, vegetation clearing, water abstraction, wastewater discharge, solid waste disposal, sourcing of building sand and gravel, etc.

Thus, the proposed activities should be undertaken in a responsible and environmental friendly manner.

The EMP recommends measures to be implemented by the proponent, the contractor and sub-contractors in order to manage the infrastructure development activities at Leeudrink APU Camp on behalf of MEFT (the Proponent), in an environmental friendly manner, and in accordance with the provisions of the Environmental Management Act and EIA regulations.

In-addition, the aim of the EMP is to ensure legal compliance to prevent environmental fatal flaws as mitigation for any impacts arising from the construction process at the end of the construction phase.

Non-compliance against the EMP is punishable and specific responsibilities has been assigned to role players, in-order to ensure that the EMP is implemented. The key role-players (Proponent, Contractor, Site Manager and ESHS) as defined under section 4 should:

- **Read** the EMP (particularly the Site Manager) and ensure that they are fully conversant with provisions of the EMP,
- If need be, **Ask for clarity** from the Environmental Assessment Practitioner (EAP), Environmental Compliance Officer (ECO) or relevant authority,
- Ensure implementation of the recommended mitigation measures, and
- Communicate defaults / challenges to the ECO as soon as possible.

It is recommended that an Environmental Control Officer (ECO) should monitor (conduct periodic and unannounced EMP audits) throughout the development phase, in-order to ensure compliance in-accordance with the mitigation measures prescribed in the EMP.

