
APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE RENEWAL

ENVIRONMENTAL IMPACT ASSESSMENT FOR THE CONSTRUCTION AND OPERATION OF A CHARCOAL PROCESSING PLANT IN WALVIS BAY, ERONGO REGION, NAMIBIA.

PROPONENT:CHARCOAL WAREHOUSE CC

16-Nov-22

To: The Ministry of Environment, Forestry and Tourism
Department of Environmental Affairs
C/o Dr. Kenneth David Kaunda Street, 2nd Floor
Windhoek, Namibia

Attention: Environmental Commissioner

Dear Sir,

The issued Environmental clearance Certificate for the above mentioned project is valid for three years from date of issue, from October 2019 to October 2022

Due to the current economic constraints and the COVID-19 pandemic, the project has been delayed and minor activities have occurred on the ground, including site establishment and setting up of a temporary packaging facility. As such the project is still in the process of also securing funds to implement the project and a valid ECC forms part of the requirements to secure funding-

In this respect, we would like to apply for a renewal or extension to the issued ECC for this project based on the **Existing Environmental Management Plan(Also attached herewith) and a Biannual Audit conducted on site**, since no changes have been noted on site to date.

For your information, we have attached the previously issued ECC as well as the approved EMP, and should you require any additional information, please do not hesitate to contact the Environmental Consultant.

Yours truly,



Tendai E. Kasinganeti (PhD Cand.)
Environment | Climate | ESG | Carbon Markets Consultant

ENVIRONMENTAL COMPLIANCE AUDIT AND BI-ANNUAL REPORT:

CONSTRUCTION AND OPERATION OF A CHARCOAL PROCESSING PLANT IN WALVIS BAY, ERONGO REGION, NAMIBIA.

PROJECT:	CONSTRUCTION AND OPERATION OF A CHARCOAL PROCESSING PLANT IN WALVIS BAY, ERONGO REGION, NAMIBIA		
PROPONENT:	CHARCOAL WAREHOUSE CC WALVIS BAY, NAMIBIA		
LOCATION:	WALVIS BAY -NAMIBIA		
PROJECT TYPE:	CHARCOAL PROCESSING AND PACKAGING (MANUFACTURING)		
REPORTING PERIOD: FROM	APRIL 2022- OCTOBER 2022	APP No.	221124000434
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Project Name:

Proposed Construction & Operation of a Charcoal Processing and Packaging Plant in Walvis Bay, Erongo
Region-Namibia

Period

This audit report covers the period starting from April 2022 to October 2022.

Stage of Report

Final Report

Client

Charcoal Warehouse cc

Date of Release:

November 2022

EnviroPlan consulting cc

We welcome any enquiries regarding this document and its content, please contact:

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Confidentiality

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Definitions and Abbreviations

DEA	Directorate of Environmental Affairs
DBN	Development Bank of Namibia
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
ESMP	Environmental and Social Management Plan
EHS	Environmental, Health and Safety
L	Litre
MET	Ministry of Environment and Tourism
SABS	South African Bureau of Standards

1. INTRODUCTION

The applicant Charcoal warehouse cc, is in the process of establishing a charcoal processing and packaging facility in Walvis Bay town. The project is aimed at processing and packaging charcoal for overseas market, regional markets and local consumers. The proposed project will use temporary infrastructure for their operations, since they are using leased land. Because, the area is not serviced, the client will install a water supply pipeline water Plant water requirement.

Thus, in accordance to the requirements of the Environmental Management Act, No. 7 of 2007 Section 40 the companies' environmental clearance certificate granted on in September 2016 requires that Bi-Annual reports are submitted to MET: DEA to ensure compliance with the EMP developed for the operations.

It is under this background that this document has been prepared following a request by the proponent, to the consultant (EnviroPlan Consulting cc) to conduct periodic auditing of the progression of the construction stage and operations of the warehouse and submit a Biannual report in compliance to the requirements of the EMA Act No.7 of 2007. The document gives an in-depth understanding of the nature of environmental, occupational health and safety and social (EOHS&S) risks associated with the current on-going activities and goes on to give mitigation and prevention measures to manage environmental risks and non-compliance issues surrounding the operations of the venture.

2. PROJECT ACTIVITIES: PHASES COVERED BY THE BI-ANNUAL REPORT

Construction and Operational Phase

- The Construction of Offices and employee accommodation
- Water supply
- Sewage waste reticulation
- Charcoal Packaging
- OH&S Issues surrounding the project operation
- Waste Management
- Corrective Maintenance (Replacing of non-functioning equipment)
- Conservation of local biota.
- Monitoring of water and air quality.

2.1. OBJECTIVES

The objectives of Bi-Annual assessment as conducted in October 2022 were to establish the extent to which the environmental management plan approved by the DEA is being followed as well as to determine the extent to which non-compliance issues can be rectified for the effective implementation of the environmental management plan.

- An assessment of legal and another requirements compliance.
- Analyse the Implementation of the Environmental Management Plan in managing environmental impacts/aspects from daily operational activities.
- Document a corrective action Environmental Management Plan.

2.2. SCOPE OF ASSESSMENT

The assessment was conducted based on a full audit of all construction and operational operations, were no non-conformances were recorded in an area of the organisation's activities, or against any requirement of the relevant standard, it does not necessarily indicate that no non-conformances exist. It should be noted that it is

imperative to understand that the purpose and scope of the assessment is not to identify and record all non-conformances but only to obtain sufficient information upon which the ECC was issued.

It therefore follows that future non-conformances, not identified during this assessment, could be recorded during subsequent assessments. It is the responsibility of the organization to determine if similar non-conformances, such as those recorded during the assessment, exist in other areas of the environmental management plan and identify other potential negative impacts on the environment during their internal audit processes, to take the necessary corrective action.

3. METHODOLOGY AND DATA COLLECTION

Literature Review

An analysis of the operational environmental files was conducted, this included reports and recommendations from routine inspections by DEA's Environmental Officers, scrutiny of previous EMPs and initial Scoping assessment for the project as well as other Namibian legal requirements and similar reports conducted previously.

Key Interviews

Interviews with the Site manager, plant operators and two general hand employees was conducted to:

- Understand the all activities and process operations of the project proponent.
- Establish extend of environmental impacts, measures being employed to manage environmental aspects/impacts.
- To source first-hand information on environmental and social issues about the operation of the project.
- Lobby for possible solutions to some of the environmental challenges being faced by the proponent.

4. CURRENT PROJECT PROCESSES AND SERVICES

Environmental Reporting

Upon awarding of ECC in October 2019, Charcoal Warehouse embarked on preparation and construction activities, however in 2020 the activities were affected by COVID 19 and no activities were conducted and consequently no Bi-Annual reports were generated. In January 2021 construction activities started, and this Bi-Annual is prepared and submitted in compliance to the requirements of the EMA Act No. 7 of 2007.

It is behind this background that this comprehensive Bi-Annual report paves way for the construction and operation the charcoal processing and packaging facility.

Site structures



Figure 1: Existing Offices for use (Sewer and water supply installed)

The proponent has established a temporary office block with containers. The block houses a garage, kitchen, toilet and offices.

Charcoal Packaging equipment



Figure 2: Charcoal is delivered on site for sorting in Trucks

To ensure sustainability, Charcoal warehouse deals with IFC Charcoal certified charcoal producers



Figure 3: Charcoal is stored on site in large open sack baggings



Figure 4: A mobile screening facility is on site to grade the charcoal and ready for packaging



Figure 5: Charcoal is bagged in 5kg bags for exportation to Europe and Asia

(Currently charcoal is pre-processed by producers, and it is only packaged on site, since there is no equipment and machinery yet for processing.)



Figure 6: Septic tank wash away system used on site.

Greywater from the kitchen is currently used for watering plants.

4.1. SERVICES

- Roads: The site is accessible
- Water: There is municipal water supply
- Energy: A solar system has been installed on site.

5. ENVIRONMENTAL MANAGEMENT COMPLIANCE

5.1. POLICY AND LEGISLATORY COMPLIANCE

The operation of the charcoal processing and packaging facility will be assessed in relation to compliance with guiding legal requirements in Namibia, international conventions and best practices for environmental management and the existing Environmental Management Plan for the facility.

Compliance was categorised in the following:

- a. Non-Compliance (NC)
- b. Partial compliance (PC)
- c. Compliant (C)

Table 1: Legal and other requirements compliancy assessment

Aspect	Legislation	Compliance Status	Comments
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	C	-The Proponent through conducting environmental impact assessments and applying for environmental clearance certificate renewal is complying with the requirements of the constitution.
Archaeology	National Heritage Act 27 of 2004	C	-Employees have been trained and informed of the course of action if they come across artefacts, graves or seeming culturally important objects and sites.
	National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	C	-Employees have been trained and informed of the course of action if they come across artefacts, graves or seeming culturally important objects and sites.
Environmental	Environmental Management Act 7 of 2007	C	-This Bi-Annual Report is in compliance to the Act. -There are two Bi-Annual reports that were missed to economic and health issues as highlighted.
	Pollution and Waste Management Bill (draft)	PC	-There is need to conduct effluent testing and analysis before use for gardening. -A greywater management system should be designed and installed.
	Soil Conservation Act 76 of 1969	N/A	
Forestry	Forest Act 12 of 2001	N/A	

	Nature Conservation Ordinance 4 of 1975	C	-Employees have been trained against indiscriminate tree harvesting, hunting and gathering of forest produce.
Health and Safety	Labour Act (No 11 of 2007) in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work'.	NC	-Employees' PPE is insufficient. -Employees need detailed training on Occupational Health and Safety. -There is need for SHEQ Signage on site.
	Public Health and Environmental Act, 2015	NC	-Site health and sanitation is not in compliance effluent discharge requirements.

5.2. ENVIRONMENTAL MANAGEMENT PLAN COMPLIANCE

The charcoal processing facility operations were assessed in relation to compliance with the commissioned Environmental Management Plan upon which the previous ECC was operating under. The major environmental impacts and/ aspects identified and addressed in the EMP were assessed in relation to remediation or impact prevention with the corrective action measures provided for in the EMP. Compliance was categorised in the following:

- a. Non-Compliance (NC)
- b. Partial compliance (PC)
- c. Compliant (C)

Table 2: Environmental Management Compliance Summary

Environmental Aspect	Environmental Impact	Compliance Status	Comments
Vegetation	Protected Species destruction.	C	-There are no protected tree species on site that would require special authorisation before clearance.
	Indiscriminate tree cutting	C	-The proponent is planting trees along the boundary line.
Fauna	Driving away of local wild animals	C	-The area is already affected by the local communities such that there are few wild animals in the area.
	Indiscriminate killing and hunting of animals	C	-Employees have been trained on the importance of animals and the non-hunting policy of the company.
Culture and Heritage	Archaeology	C	-Employees have been trained and informed of the course of action if they come across artefacts, graves or seeming culturally important objects and sites.

	Proliferation of local cultures	C	-The Proponent employed local people to ensure that the operations blend with the local cultural values -Employees from other areas of different cultural values have been given guidelines on conduct with the public.
Environmental Quality	Soil erosion	C	-No erosion have been observed on site.
	Water abstraction	C	-There is municipal water and borehole water supply.
	Water & Soil pollution	NC	-Polluted soil can result in hydrocarbons deposition in river, thus there is need for a clear and practical oil collection system. And spill cleaning kits availability. -Water quality will eb benchmarked and results submitted together with Bi-Annual reports.
	Dust pollution	NC	-Dust collection buckets have not yet been installed around the site.
	Noise pollution	C	-Operations are only done during the day.
Land Use	Land Use change and resource depletion	PC	-There are no appropriate signs in place to notify the on-going activities on site, thus the ECO recommends signage on entrance to the mining area. -In terms of local area carrying capacity, the proponent has ensured that the project fits into the area and uses as minimal resources as possible.
Health and Safety	Workplace injuries and illnesses	PC	-There is no Safety training given to employees -The site does not have Site markings and or Signs.
Socio-Economic issues	Employment	C	-The Proponent has Local employees.

House Keeping	Security	PC	-there is need to effectively secure the site and keep the equipment such as screens safe from vandalism.
	Waste Management	NC	-Refuse bins should be colour coded to avoid mixing waste.

6. ENVIRONMENTAL MONITORING

An environmental monitoring plan provides a delivery mechanism to address the adverse environmental impacts of a project during its execution, to enhance project benefits, and to introduce standards of good practice to be adopted. An environmental monitoring plan is important as it provides useful information and helps to assist in detecting the development of any unwanted environmental situation, and thus, provides opportunities for adopting appropriate control measures. From the monitoring point of view, the important parameters are groundwater, occupational health and safety and fire and explosion. The suggested monitoring details are outlined in the following sections.

IMPACT	RECEPTORS	TYPE OF MONITORING	IMPLEMENTATION DATE
Fire and explosion	Environment	Regular inspections should be carried out to inspect and test firefighting equipment.	January 2023
O.H.S.E	Employees	-Site inspection -Conducting Hazard and Risk Identification -Safety procedures evaluation. -Health and safety incident monitoring -Conduct Environmental Compliance Audit	Monthly Audits, and Biannual Submissions to MET.
Noise	Employees	-Observation of on-site noise levels by the Site manager and reporting to the ECO Quarterly.	Monthly
Air quality (Dust)	Employees	-Install dust collection buckets around the site for monthly monitoring due to the dust fallout generated by charcoal dust. -Regular visual inspection -A complaint register regarding emissions/smell should be kept and acted on if it becomes a regular complaint.	Monthly
Generation of waste	Land	Site inspection on housekeeping	Monthly
Cumulative impact	Environment	Regular inspection	Monthly

7. CONCLUSIONS

The above Biannual Report, if properly implemented, will help to comply to the existing EMP and to minimise adverse impacts on the environment. Were 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 operation and perhaps decommissioning phase. Parties responsible for transgression of the EMP should be held responsible for any rehabilitation that may need to be undertaken.

Recommendations

- The Proponent must appoint an ECO to monitor the mining site Monthly, Report to MEFT Bi-Annually and to renew the ECC every Three years.
- The Proponent should appoint SHE consultant to train employees on HSE and come up with a SHE policy for the company.
- Waste management Issues needs to be addressed with immediate effect and dedicated Hazard waste containers be clearly marked.
- Spill kits will have to be obtained and kept on site due to risks posed by machines and fuel storage.
- The next Biannual Report coupled with ECC Renewal Application will be commissioned in March 2022.

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ENVIRONMENTAL MANAGEMENT PLAN (EMP): PROPOSED CONSTRUCTION & OPERATION OF A CHARCOAL PROCESSING AND PACKAGING PLANT IN WALVIS BAY, ERONGO REGION -NAMIBIA



DATE: JUNE 2019

Proposed Construction & Operation of a Charcoal Processing and Packaging Plant in Walvis Bay, Erongo Region-Namibia: Environmental Management Plan (EMP)

EMP Prepared for Charcoal Warehouse cc

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Definitions

TERMS	DEFINITION
BID	Background Information Document
EAP	Environmental Assessment Practitioners
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA (R)	Environmental Impact Assessment (Report)
ESIA	Environmental and Social Impact Assessment
EMP	Environmental Management Plan
EMPr	Environmental Management Plan Report
GHG	Greenhouse Gasses
ISO	International Organization for Standardization
I&Aps	Interested and Affected Parties
MET: DEA	Ministry of Environment and Tourism's Directorate of Environmental Affairs
NHC	National Heritage Council
NEMA	Namibia Environmental Management Act
ToR	Terms of Reference
UNFCCC	United Nations Framework Convention on Climate Change

i. Purpose of This Environmental Management Plan







This Environmental Management Plan follows on environmental flaws associated with the proposed project, which were identified through the Environmental Scoping Report. A conscious decision was made based on the recommendations and guidelines by the Directorate of Environmental Affairs EIA guidelines in order to assess both significant and less significant environmental impacts proposed by the development. The developed Environmental Management Plan (EMP) for this proposed activity will have to be effectively implemented by the client, to ensure that adverse environmental impacts are not considered.

The framework within which this EMP is developed includes identifying various activities, their occurrence in the construction and operation processes and the likely impacts that are associated with those activities.




It is therefore necessary to subcategorize the EMP into Construction and Operational activities. The first category of the EMP which deals with project activities identified and highlight the activities impacts and the phases they are likely to occur. In this respect, this EMP alludes on anticipated 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. This will also include rehabilitation measures that will need to be implemented once the construction is completed and how to continuously monitor the plant in accordance to monitoring parameters highlighted herein.

ii. EMP PRINCIPLES

The following principles have informed the compilation of this environmental management Plan:

-  The environment is considered to be composed of both biophysical and social components.
-  Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
-  Development must be socially, environmentally and economically sustainable.
-  Construction, in general, is a disruptive activity and all due consideration must be given to the environment, particularly the social environment, during the execution of the project to minimize the impact on the affected parties.
-  Minimization of areas disturbed by construction activities will reduce the severity of the construction related environmental impacts and reduce rehabilitation requirements and costs.
-  As minimum requirements, relevant standards relating to international, national, regional and local legislation, where applicable, shall be adhered to. This includes

requirements relating to waste emissions (e.g. hazardous, airborne, liquid and solid), waste disposal practices, noise regulations, road traffic ordinance etc.

-  Reasonable measures to avoid pollution and environmental degradation are to be provided for.
-  The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling, or minimizing further pollution, environmental damage or adverse health effects must be paid for by the person responsible for harming the environment.
-  The responsibility for the environmental, health and safety consequences of the proposed development exists throughout its life cycle

1. CHAPTER ONE: BACKGROUND

1.1. Introduction

Namibia's farmland is burdened by a massive encroachment of bush species. It was estimated in 2008 that approximately 26 million hectares of Namibian farmland is moderately to highly affected by bush encroachment. More recent unofficial research places this figure closer to 40 million hectares (GIZ 2016 Strategic Environmental Assessment), but this has yet to be confirmed by a GIS mapping exercise. Bush encroachment coupled with overgrazing and poor rangeland practices has caused extensive land degradation in Namibia. The biodiversity level has dropped considerably as bush encroachment has increased. Since the beginning of the last century, a significant decrease in agricultural productivity due to the land's reduced carrying capacity has been observed.

A combination of charcoal and wood production can be implemented as a bush-encroachment mitigation strategy. At the same time, more and more farmers are turning to charcoal production to compensate for the loss of farming income. Deemed a national challenge, bush encroachment has begun to mobilise both public- and private-sector responses. Production of lump charcoal is Namibia's oldest wood based value chain. At the same time, it is the single most important product value chain from a debushing point of view, as it currently generates a demand for biomass input of approximately 350,000 to 500,000 tonnes p.a., thus contributing to the debushing of 35,000 to 50,000 hectares of land each year (Ministry Of Industrialisation, Trade and SME Development, 2014).

Charcoal production has existed as an industry in Namibia for about 30 years and operates mainly on farms in the country's central and northern regions. The charcoal value chain is commercially viable, successful and widespread. Despite the fact that charcoal production is regulated by the Ministry of Agriculture, Water and Forestry: Directorate of Forestry (DoF) and organised by the Namibian Charcoal Association (NCA). However despite the high production of charcoal, huge volumes of charcoal is going to South Africa for processing and export to overseas markets. And it is behind this background that **Charcoal warehouse (CW)** wants to provide for a charcoal processing and packaging plant for export and domestic markets.

In terms of the Namibian environmental legislation (Environmental Management Act (No. 7 of 2007)), an EIA is required to obtain an Environmental Clearance Certificate from the Ministry of Environment and Tourism (MET) before the project can proceed. Furthermore as per the requirements of the Environmental Management Act No. 7 of 2007, CW has appointed D&P Engineering and Environmental Consultants to conduct an Environmental Assessment (EA) and develop an Environmental Management Plan (EMP) for the proposed project.

This has been followed by an application for Environmental Clearance Certificate (ECC) to the Ministry of Environment and Tourism (MET): Directorate of Environmental Affairs (DEA).

In this respect, this document forms part of the application to be made to the DEA's office for an Environmental Clearance certificate for the proposed construction and operation of a charcoal processing and packaging plant, in accordance with the guidelines and statutes of the Environmental Management Act No.7 of 2007 and the environmental impacts regulations (GN 30 in GG 4878 of 6 February 2012).

1.2. Project Location

The development is to be conducted on a 2 hectares on piece of the remainder Farm 38 Walvis Bay, Erongo Region-Namibia. The site is approximately 11km South East of Walvis Bay CBD, accessed using the D1983 road to Rooibank. Please refer to the map below (Fig 1) giving a locality layout of the site:

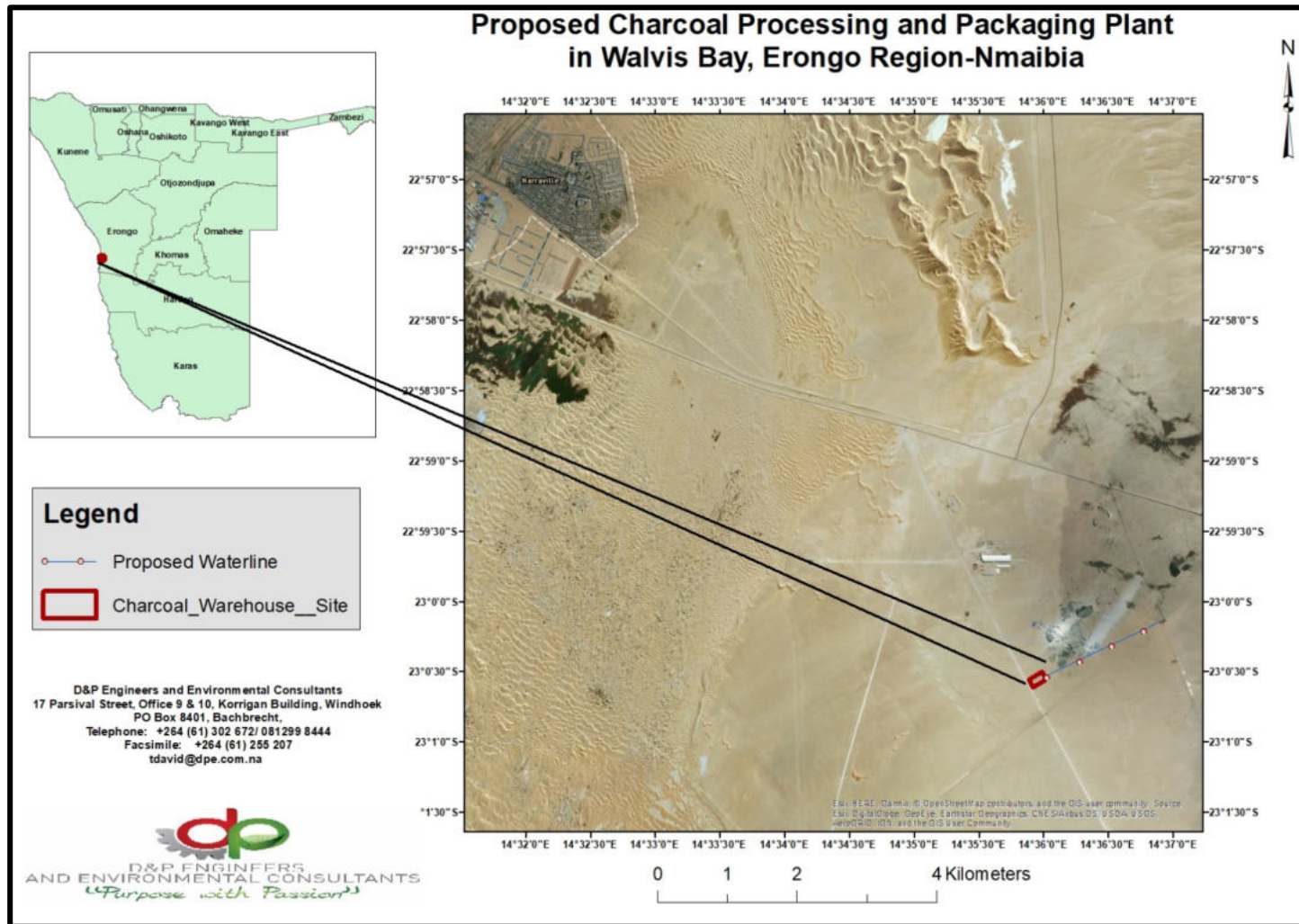






Figure 1: Proposed Project Site.

1.3. Project Overview

The applicant Charcoal warehouse cc, intends to establish a charcoal processing and packaging facility in Walvis Bay town. The project is aimed at processing and packaging charcoal for overseas market, regional markets and local consumers. The proposed project will use temporary infrastructure for their operations, since they are using leased land. Because, the area is not serviced, the client will install a water supply pipeline water Plant water requirements. The operations of the processing and packaging plant will be conducted with a high degree of safety for employees and equipment. The proposed infrastructure will have minimal impacts on the natural resources, i.e. water, fauna and flora.

1.4. Proposed project infrastructure

Proposed on site infrastructure entails of a

-  Loading and Offloading Bay,
-  Processing/ Sorting & Packaging Plant,
-  Product Storage Shed
-  1,2km Water supply pipeline.

The site will be composed of offices, weighing stations, security offices and other necessary infrastructure. However the main structure will be will be as illustrated below:

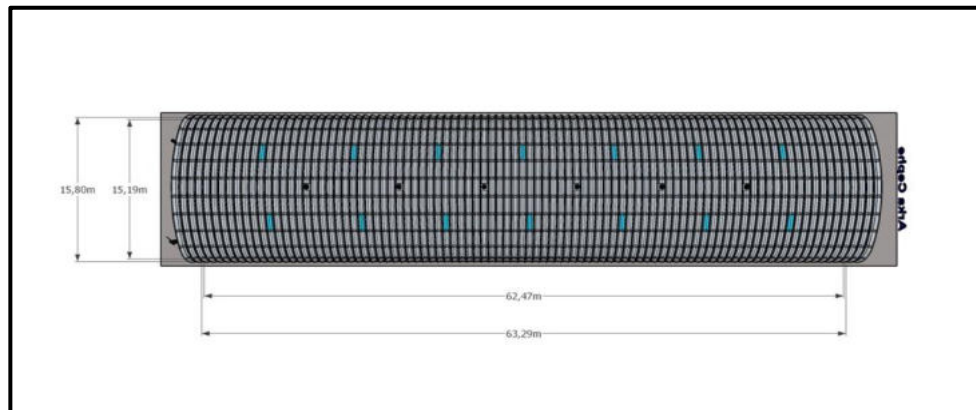


Figure 2: Proposed structures on site.

1.4.1. Accessibility

The site is easily linked to Walvis Bay proper with an existing D1983 gravel road to Rooibank.

1.4.2. Infrastructure and Services

Water: There is an existing water connection valve at about 1.2km from the site, the proponent will run a water pipeline to the connection valve.

Ablution: A septic tank system for domestic ablution handling will be used on site, upon approvals from the municipality.

Electricity: There is an existing electricity connection line within 300m from the site, however most of the equipment will be diesel powered.

Communication: The site is connected with MTC, TN Mobile and satellite phones.

2. CHAPTER TWO: POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

2.1. Introduction

An important part of the EIA is identifying and reviewing the administrative, policy and legislative frameworks concerning the proposed activity, to inform the proponent about the requirements to be fulfilled in undertaking the proposed project. This section looks at the legislative framework within which the proposed development will conform to; the focus is on the compliance with the legislation during the planning, construction and operational phases. All relevant legislations, policies and international statutes applying to the project are highlighted in the table below as specified in the Environmental Management Act, 2007 (Act No.7 of 2007) and the regulations for Environmental Impact Assessment as set out in the Schedule of Government Notice No. 30 (2012).

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Table 1: Policies, legal and Administrative regulations

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
<p>The Constitution of the Republic of Namibia (1990)</p>	<p>The articles 91(c) and 95(i) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalizing policies to accomplish the sustainable objectives which include:</p> <ul style="list-style-type: none"> - Guarding against overutilization of biological natural resources, - Limiting over-exploitation of non-renewable resources, - Ensuring ecosystem functionality, - Maintain biological diversity. 	<p>-Through implementation of the environmental management plan the proposed development will be in conformant to the constitution in terms of environmental management and sustainability, through bringing development in an environmentally sensitive way.</p>
<p>Vision 2030 and National Development Plans</p>	<p>Namibia’s overall Development ambitions are articulated in the Nations Vision 2030. At the operational level, five-yearly national development plans (NDP’s) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 4th NDP which pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.</p>	<p>The proposed project, is an important element in employment creation, manufacturing industry growth as well as a contribution to achieving the Vision 2030 of the country.</p>

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
<p>Environmental Assessment Policy of Namibia 1994</p>	<p>The Environmental Assessment Policy of Namibia requires that all projects, policies, Programmes, and plans that have detrimental effect on the environment must be accompanied by an EIA. The policy provides a definition to the term “Environment” broadly interpreted to include biophysical, social, economic, cultural, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmes and plans.</p>	<p>-Processing of wood products and manufacturing processes require environmental approval before they are undertaken.</p> <p>-Through abiding to the requirements of the Environmental Assessment Policy of Namibia. The EIA and EMP will cater for the sustainable management of biophysical environment.</p>
<p>Environmental Management Act No. 07 of 2007</p>	<p>The Act aims at</p> <ul style="list-style-type: none"> ✓ Promoting the sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment; ✓ To provide for a process of assessment and control of projects which may have significant effects on the environment; <p>The Act gives legislative effect to the Environmental Impact Assessment Policy. Moreover, the act also provides procedure for</p>	<p>This document is compiled in a nature that project implementation is in line with the objectives of the EMA. EIA guiding procedures developed by MET were also used in the course of this project.</p>

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
	adequate public participation during the environmental assessment process.	
Public Health Act (No. 36 of 1919)	Under this act, in section 119: “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.”	<p>-The project proponent will ensure that all legal requirements of the project in relation to protection of the health of their employees and surrounding residents is protected as will be alluded in the EMP.</p> <p>-Personal protective equipment shall be provided for employees in construction.</p> <p>-The development shall follow requirements and specification in relation to water supply and sewerage handling and solid waste management so as not to threaten public health of future residents on this piece of land.</p>

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
Soil Conservation Act 76 of 1969	<p>The objectives of this Act are to:</p> <ul style="list-style-type: none"> ✓ Make provisions for the combating and prevention of soil erosion, ✓ Promote the conservation, protection and improvement of the soil, vegetation, sources and resources of the Republic. 	<p>-The project will have a rather localized impact on soils and on the soil through clearance for construction</p> <p>-It is however important to note that footprint will not be more than 1 ha.</p>
Nature Conservation Ordinance 1996	<p>To consolidate and amend the laws relating to the conservation of nature; the establishment of game parks and nature reserves; the control of problem animals; and to provide for matters incidental thereto.</p>	<p>The proposed project implementation is not located in any known or demarcated conservation area, national park or unique environments. The project site was selected with this ordinance in mind to ensure that Namibian nature is conserved.</p>
Protected Areas and Wildlife Management Bill	<p>This bill, when it comes into force, will replace the Nature Conservation Ordinance 4 of 1975. The bill recognizes that biological diversity must be maintained, and where necessary, rehabilitated and that essential ecological processes and life support systems be maintained. It protects all indigenous species and control the exploitation of all plants and wildlife.</p>	<p>Environmental recommendations and considerations on this project has ensured that the proposed activities will not fall within the boundaries of any protected area and that the project will not affect heavily endangered vegetation and animals on its site, which is however unlikely because the areas forms part of Walvis Bay urban locale.</p>
Forest Act, 2001 (Act No. 12 of 2001)	<p>The Act gives provision for the protection of various plant species through the Ministry of Agriculture,</p>	<p>-The proponent will have to ensure that there is no indiscriminate removal of vegetation in the area.</p>

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
	Water and Forestry (MAWF), Directorate of Forestry).	-The proposed site is sparsely vegetated with desert lichens.
National Biodiversity Strategy and Action Plan (NBSAP2)	The action plan was operationalised in a bid to make aware the critical importance of biodiversity conservation in Namibia putting together management of matters to do with ecosystems protection, biosafety, biosystematics protection on both terrestrial and aquatic systems.	-The project proponent has been advised by the D&P Engineers and Environmental Consultants and recognises the need for ecosystems protection to manage the changing climatic environment.
National Policy on Climate Change for Namibia, 2010	In harmony with the findings of the IPCC over time and the Earth Summits held annually, the policy seeks to outline a coherent, transparent and inclusive framework on climate risk management in accordance with Namibia's national development agenda, legal framework, and in recognition of environmental constraints and vulnerability. Furthermore, the policy pursues the strengthening of national capacities to reduce climate change risk and build resilience for any climate change shocks.	-The proponent during construction should ensure that there are limited greenhouse gas emissions from machinery- -No blasting is expected to be conducted on site.
Water Resources Management Act, 2013 (Act No. 11 of 2013)	This Act provides for the management, protection, development, use and conservation of water resources. This also forms the regulation and monitoring of water resources.	The proposed activities are not expected to have any direct impacts on underground water resources, unless if extraction is conducted. Water abstraction will however be done in

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
		accordance with Water Resources Management Act No. 11 of 2013.
National Heritage Act 27 of 2004	Heritage resources to be conserved in development. (National Heritage)	During the project implementation as soon as objects of cultural and heritage interests are observed such as graves, artefacts and any other object believed to be older than 50 years, all measures will be taken protect these objects until the National Heritage Council of Namibia have been informed, and approval to proceed with the operations granted accordingly by the Council.
National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	“No person shall destroy, damage, excavate, alter, remove from its original site or export from Namibia: (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyph known or commonly believed to have been executed by any people who inhabited or visited Namibia before the year 1900 AD; or (c) any implement, ornament or structure known or commonly believed to have been used as a mace, used or erected by people referred to in paragraph (b); or	The proposed site of development is not within any known monument site both movable or immovable as specified in the Act, however in such an instance that any material or sites or archeologic importance are identified, it will be the responsibility of the developer to take the required route and notify the relevant commission.

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
	<p>(d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell mounds or other sites used by such people; or</p> <p>(e) any other archaeological or palaeontological finds, material or object; except under the authority of and in accordance with a permit issued under this section.</p>	
<p>Pollution Control and Waste Management Bill</p>	<p>This bill has not come into force. Amongst others, the bill aims to “prevent and regulate the discharge of pollutants to the air, water and land” Of particular reference to the Project is: Section 21 “(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse.”</p> <p>Section 55 “(1) No person may produce, collect, transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human health or the environment.”</p>	<p>-To control air, water and land pollution as agitated by the Bill, the project proponent will ensure that proposed project activities will abide by the EMP’s specification in terms of pollution prevention to land, water and air during the construction and operation phases.</p>
<p>Atmospheric Pollution Prevention Ordinance 11 of 1976</p>	<p>To provide for the prevention of the pollution of the atmosphere, and for matters incidental thereto.</p>	<p>-Dust emission from charcoal processing is a great risk to the ambient air quality, hence there will be strict abidance to this Act. Employee health and safety will also be prioritised.</p>

LEGISLATION/POLICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
Walvis Bay Municipality: Solid and Hazardous Waste Management Regulations: Local Authorities, 1992	Provides for management and handling of industrial, business and domestic waste.	-The proponent will ensure that they abide to the municipal solid waste management provisions.
Convention on Biological Diversity (CBD)	Namibia is a signatory of the Convention on Biological Diversity and thus is obliged to conserve its biodiversity.	The project will preserve vegetation on site as part of their plans for green and sustainable development.

3. CHAPTER THREE: ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The proposed construction and operation of a charcoal processing and packaging facility will have environmental impacts as indicated in the previous chapter. This section describes the Environmental Management Plan (EMP) for impacts associated with the proposed development. The EMP stipulates the management of environmental programs in a systematic, planned and documented manner. The EMP below includes the organizational structure, planning and monitoring for environmental protection at the proposed project development and other areas of its influence. The aim is to ensure that the proponent maintains adequate control over the project operations to:

- To prevent negative impacts where possible;
- Reduce or minimise the extent of impact during project life cycle;
- Prevent long term environmental degradation.

3.1. EMP Administration

There is a strong need to clearly outline the roles and responsibilities of all stakeholders to ensure that the EMP is fully implemented. To ensure that the EMP is effectively implemented, the consultant also recommends that MET: DEA also conduct regular inspection visits on site to enforce conducting of quarterly and biannual reports.

Furthermore, there is also a need for the proponent to appoint an overall responsible person (project manager) to ensure the successful implementation of the EMP as highlighted below:

Table 2: Roles and Responsibilities in EMP Implementation

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Charcoal Warehouse	Responsible to enforce EMP implementation during construction and operation phases.
Environmental Control Officer (E	Implement, review and update the EMP. <ul style="list-style-type: none"> • Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed • Conduct environmental site training (tool box talks) and inductions with the support of an environmental consultant. • Conducts environmental audit at work site with the support of environmental consultant. • Close out all non-conformances. • Ensure materials being used on site are environmental friendly and safe.
The Directorate of Environmental Affairs	Approve the EMP and any amendments to the EMP. <ul style="list-style-type: none"> • Approve reports of environmental issues and non-conformances as issued. • Review and approve environmental reports submitted as part of EMP implementation • Ensure that the client is compliant to the EMP through biannual reporting on environmental performance.
Project Manager	Control and monitor actions required by the EMP. <ul style="list-style-type: none"> • Report all environmental issues to HSE Manager. • Ensure documented procedures are followed and records kept on site. • Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.
Workers	Follow requirements as directed by the EMP when conducting work. <ul style="list-style-type: none"> • Report any potential environmental issues to site engineer/project manager, indicating spilt oil, excess waste, excessive dust generation, dirty water running off the site and other possible non-conformances

Table 3 : Construction and Operation EMP (C&O EMP)

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Ensure contractors are aware of the required management measures stipulated in the EMPr.	1)	This EMPr must form part of the contractual agreements with the specific contractors.	Once Off	Project Manager	Contractors	Construction & Pre-Construction
Ensure all construction staff is familiar with the Environmental awareness Plan.	2)	-The contractor is expected to have safety “tool box” talks in accordance with the risks and trends associated with the project. Proof of these talks shall be kept on site.	Daily	Contractor	ECO	Pre-Construction , Construction and Decommissioning
	3)	- The contractor will develop a specific emergency procedure and plan.	Once Off	Contractor	ECO	Pre-Construction
Increase employment Opportunities.	4)	Labour (skilled and unskilled) and contractors employed for the proposed project should be sourced locally.	Once Off	Contractor	Project Manager	Pre-Construction , Construction and Decommissioning
	5)	Local business will be used where unskilled labour is required. Reputable local business will be used where available.	Once Off	Contractor	Project Manager	Pre-Construction , Construction and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Minimise the impact on surrounding land uses and employees due to dust emissions.	6)	-Charcoal dust must be contained in the processing plant area, such that it does not affect neighbouring industries. -The proponent has already processed installation of dust collection cartridge filters.	Daily	Project Manager	Project Manager	Operation
	7)	Ensure optimum ventilation to keep the work area as a safe environment.	Continuous	Project Manager	Project Manager	Operation
	8)	Collected charcoal dust will also be packaged for export.	Continuous	Project Manager	Project Manager	Operation
	9)	Solid waste will be removed from site frequently so as to prevent the accumulation of waste on site.	Continuous	Project Manager	Project Manager	Operation
	10)	Divert water used to clean structures to a septic tank if not biodegradable.	Continuous	Project Manager	Project Manager	Operation
Minimise the potential exposure of employees and neighbouring operations to diseases.	11)	-Dust suppression and provision of PPE will be prioritised to prevent dust related illnesses such as Bronchitis. -Prior to employment, employees should be medically tested for fitness.	When Required	Project Manager	Project Manager	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	12)	Clean overalls, gumboots and face protection PPE will be provided for.	Continuous	Project Manager	Project Manager	Operations
	13)	Vehicles will be sprayed with disinfectants when entering and exiting the loading and offloading bay.	Daily	Project Manager	Project Manager	Operations
	14)	Workers should be adequately trained to follow all safety procedures and wear protective equipment provided.	Once Off	Project Manager	Project Manager	Operations
	15)	Comprehensive records should be kept. Proper sanitary facilities must be provided, i.e.: wash room with showering facilities.	Once Off	Project Manager	Project Manager	Operations
Minimise the impact of migrant workers and possible crime increase.	16)	No recruitment "at the gate" will be allowed.	Daily	Contractors	Project Manager	Construction, Operational and Decommissioning
Reduce misconduct by employees on site.	17)	No alcohol /drugs are permitted on the construction site.	On going	Contractor, Employees	Project Manager	Construction, Operational and Decommissioning
	18)	No firearms allowed on site, unless used by security personnel.	On going	Contractor	Project Manager	Construction, Operational and Decommissioning
Prevent incidents posing a risk to the health and safety of employees.	19)	Correct Personal Protective Equipment (PPE) must be worn at all times by the personnel on site. Personnel must be trained on the use of PPE.	Daily	Employees/Contractor	ECO	Construction, Operational and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	20)	Each contractor will employ their own Safety Officer to monitor the safety conditions during the construction phase.	Daily	Employees/Contractor	ECO	Construction, Operational and Decommissioning
	21)	No unauthorised ignition sources will be permitted on site and debris/waste shall not be burnt under any circumstances.	Daily	Employees/Contractor	ECO	Construction, Operational and Decommissioning
	22)	Erect suitable warning and information signage near any hazardous storage facility. Handling of hazardous chemicals must only be done by trained personnel.	On-going	Employees/Contractor	ECO	Construction, Operational and Decommissioning
	23)	All provisions of the Labour Act Nr 11 of 2007 in conjunction with Regulation 156, 'Regulations Relating to the Health and Safety of Employees at work' must be complied with	On-going	Employees/Contractor	ECO	Construction, Operational and Decommissioning
	24)	Safety Data Sheets (SDSs) must be readily available on site for hazardous substances.	On-going	Employees/Contractor	ECO	Construction, Operational and Decommissioning
	25)	Workers should at all times be made aware of the health risks associated with any hazardous substances/dangerous goods used, through talk topics and awareness campaigns.	Daily	Employees/Contractor	ECO	Construction, Operational and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	26)	In the event of an emergency relating to hazardous substances, procedures detailed in the SDS shall be implemented.	When required	Employees/Contractor	ECO	Construction, Operational and Decommissioning
Prevent the loss of soil resources as a result of soil stripping.	27)	The construction footprint will be fenced off and unnecessary disturbance will be minimised.	Once Off	Employees/Contractor	ECO	Construction, Operational and Decommissioning
	28)	Topsoil stripped will be stockpiled and reused for rehabilitation purposes following construction activities.	Once Off	Contractor	ECO	Construction, Operational and Decommissioning
	29)	All excavations will be backfilled with sub soil and topsoil in the reverse order to which the soil profiles were removed.	Once Off	Contractor	ECO	Construction, Operational and Decommissioning
Prevent sterilisation of soils as a result of hydrocarbon / chemical / waste contamination.	30)	No foreign matter such as rubble, waste or hazardous material will be mixed with the topsoil or used to backfill excavation.	Daily	Contractor	ECO	Construction
	31)	Spills will be cleaned up immediately after the incident. Contaminated soil will be disposed of as hazardous waste at a licensed hazardous landfill facility.	Daily	Contractor	ECO	Construction
	32)	Drip trays or a Polyvinyl chloride (PVC) lining shall be provided for equipment utilising hydrocarbons.	Daily	Contractor	ECO	Construction

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	33)	No waste will be buried or burned on site.	Daily	Project Manager	Project Manager	Operation
Prevent the risk of soil Contamination as a result of uncontrolled storm water runoff or wash water runoff.	34)	Care must be taken to collect contaminated wash water from cleaning activities. All visible remains of excess Concrete must be physically removed on completion and disposed of. Washing off the remains into the ground is Not acceptable.	Daily	Contractor	Project Manager	Construction & Operation
	35)	In terms of the National Building Regulations, on site drainage will be provided prior to construction to combat soil erosion.	On-going	Contractor	Project Manager	Construction & Operation
	36)	Divert dirty water (water used to clean containers and from the disinfection area) to a septic tank and nowhere else. This water must not be allowed to seep into the soil or run towards the non-perennial watercourse.	On-going	Project Manager	Project Manager	Construction & Operation
	37)	Under no circumstances may open areas or the surrounding vegetation be used as toilet facilities		Project Manager	Project Manager	Construction & Operation
	38)	Toilets, permanent or portable/temporary, shall be	On-going	Contractor	Project Manager	Construction & Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
		Maintained in a hygienic state and serviced regularly. Portable toilets, should they be required, should be serviced by a reputable contractor and the contents shall be removed to a licensed disposal facility.				
	39)	Safe disposal certificate will be obtained and kept on site for the disposal of sewage.	On-going	Contractor		Construction & Operation
Prevent contamination of surface water resources and onsite erosion as a result of contained runoff.	40)	No project infrastructure will be located within the 1:100 year flood lines or within 100 m of any perennial tributaries.	Daily	Project Manager		Construction and Decommissioning
	41)	Storm water systems will be inspected and repaired timeously.	Weekly	Project Manager		Operation
	42)	No waste or refuse will be allowed to access the storm water infrastructure.	Daily	Contractor/ Employees	ECO	Construction and Decommissioning
	43)	The development footprint will be landscaped in order to prevent pooling of water.	Once Off	Project Manager	ECO	Operation
	44)	No hazardous chemical must be discarded in the sewage or storm water system.	Daily	Project Manager	ECO	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	45)	Energy dissipaters will be placed at discharge points to reduce surface water runoff and possible pollution.	Once Off	Project Manager	Project Manager	Operation
Prevent the pollution of the surrounding environment as a result of waste generation, incorrect waste disposal and housekeeping.	46)	Waste will be sorted at source.	Daily	Employees/ Contractor	ECO	Construction, Operational and Decommissioning
	47)	Waste receptacles will be kept closed at all times when not in use.	Daily	Employees/ Contractor	ECO	Construction, Operational and Decommissioning
	48)	Littering on site is forbidden and the site must be cleared of litter at the end of each working day.	Daily	Employees/ Contractor	ECO	Construction, Operational and Decommissioning
	49)	Where possible, materials used or generated by construction activities must be recycled.	Weekly	Employees/ Contractor	ECO/ Project Manager	Construction, Operational and Decommissioning
	50)	Waste will not be stored for a period exceeding 90 days Or volumes exceeding 100 cubic metres.	Weekly	Employees/ Contractor		Construction, Operational and Decommissioning
	51)	Waste generated on the proposed site should be collected by authorised waste contractors and frequently disposed of at a licensed landfill site as the last resort. Recycling/reuse of waste should be enforced where feasible.	Weekly	Employees/ Contractor	ECO/ Project Manager	Construction, Operational and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Prevent the impact on water and soil resources through the accidental spillage or leakage of waste or the incorrect storage/handling of hazardous substance.	52)	An inventory of all chemicals on site must be kept together with the respective SDS.	Weekly	Employees/ Contractor	ECO/ Project Manager	Construction and Decommissioning
	53)	Cleaning of equipment/vehicles should be done in a designated area to prevent soil and water pollution.	Weekly	Employees/ Contractor	ECO/ Project Manager	Construction and Decommissioning
	54)	Storage areas containing hazardous substances/materials are to be clearly demarcated and labelled.	Daily	Employees/ Contractor	ECO/ Project Manager	Construction and Decommissioning
	55)	Remediation of spillages must be conducted as far as practically reasonable.	On-Going	Employees/ Contractor	ECO/ Project Manager	Construction and Decommissioning
	56)	All hazardous substances will be stored in a bunded area with the capacity to store 110% of the contents volume;	Daily	Employees/ Contractor	ECO/ Project Manager	Construction and Decommissioning
	57)	When mortar is used on site, the following guidelines apply: - Carefully control all on-site operations that involve the use of mortar and concrete; - Limit mortar mixing to single sites where possible;	Daily	Employees/ Contractor	ECO/ Project Manager	Construction and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
		- Use plastic trays or liners when mixing mortar and concrete: Do not mix mortar and concrete directly on the ground; - Dispose of in the approved manner				
	58)	Should there be a specific storage area for fuel, oil and other hydrocarbon/hazardous materials. This area will be access controlled and SDSs will be available	Weekly	ECO/ Project Manager	ECO/ Project Manager	Construction and Decommissioning
Prevent possible sedimentation of water resources as a result of runoff from cleared areas.	59)	No alterations to banks or beds of watercourses is allowed (a dry gully is also recognized as a water course);	On-going	Contractor/Employees	ECO	Construction and Decommissioning
	60)	Stockpile will be shaped to divert storm water around the site to minimise soil erosion of the site as well as to prevent the contaminated water runoff.	On-going	Contractor	ECO	Construction and Decommissioning
	61)	Use of biodegradable sanitiser should be used to prevent pollution of soil and water resources.	Once off	Project manager	ECO	Operation
	62)	The storm water drainage system must be adequately designed based on site conditions in order to ensure the free flow of surface run-off.	Daily	Project manager	ECO	Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Ensure pipeline laying is done with minimal disturbance to the environment	63)	Ensure that the pipeline right of way is approved by the municipality	Daily	Project manager	ECO	Operation
	64)	-Ensure that after laying the pipe, adequate backfilling is done, with excess soil on top in case of rainfall effect on the porous backfilled material. -The water pipeline route should be marked and clearly visible to anyone in the area.	Once Off	Project manager	ECO/ Project Manager	Operation
Prevent possible groundwater contamination as a result of hazardous waste spillage and uncontrolled waste handling.	65)	No equipment or tools with oil or grease is allowed to be placed on bare ground, these must always be placed on a lined surface.	Weekly	Contractor/Employees	ECO/ Project Manager	Construction, Operational and Decommissioning
	66)	Cement mixing will take place on a lined surface. No Cement will be mixed on a bare surface.	Weekly	Contractor/Employees	ECO/ Project Manager	Construction, Operational and Decommissioning
	67)	No waste will be allowed to be disposed of into excavations.	Weekly	Contractor/Employees	ECO/ Project Manager	Construction, Operational and Decommissioning
	68)	Waste water will be contained to prevent the ingress into the groundwater system.	Weekly	Contractor/Employees	ECO/ Project Manager	Construction, Operational and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	69)	Sewage facilities will be maintained and kept in a good order to prevent any sewage spills. -The septic tanks will always be maintained and emptied when required. All sewerage waste is under the Management of the municipality.	Weekly	Contractor/Employees	ECO/ Project Manager	Construction, Operational and Decommissioning
Reduce the environmental and health impacts as a result of dust and emissions generated.	70)	-At times of high winds, periodic dust suppression techniques will be employed on cleared areas generating dust. -During charcoal processing and packaging, all dust suppression measures will be employed to prevent charcoal dust affecting neighbours.	Daily	Contractor	Project Manager	Construction, Operational and Decommissioning
	71)	Ambient dust measurement will be conducted on site (inside the plant shell and outside dust PPM)	Quarterly	Contractor	ECO	Construction, Operational and Decommissioning
	72)	Machinery emitting large quantities of Volatile Organic Compounds will be removed from site until maintenance and repair have been conducted on the machines to ensure their compliance.	Weekly	Contractor	ECO	Construction, Operational and Decommissioning
	73)	Cleared areas will be rehabilitated as soon as these areas are not in use anymore.	Following Construction	Project Manager	ECO	Operations

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Reduce the impact of noise on surrounding land uses and employees.	74)	Construction activities should be restricted to 07:00hrs to 17:00hrs during weekdays and 08:00hrs to 13:00hrs during weekends.	Daily	Contractor/Employees	ECO	Construction and Decommissioning
	75)	Machinery will be kept in good working order to reduce noise emissions.	Daily	Contractor/Employees	ECO	Construction and Decommissioning
	76)	Should noise be problematic, silencers will be fitted to construction vehicles and generators.	Weekly	Contractor/Employees	ECO	Construction and Decommissioning
	77)	Demolish and remove all infrastructure not required post closure.	Following Construction	Contractor/Employees	ECO	Construction and Decommissioning
	78)	Any noise complaints received must be recorded in the Complaints Register.	Daily	Contractor/Employees	ECO	Construction and Decommissioning
Minimise pollution as a result of uncontrolled waste disposal and storage.	79)	Recyclable waste must be stored separately to waste disposed to landfill. Reuse or recycling of waste must be Investigated.	Weekly	Contractor/Employees	ECO	Construction, Operational and Decommissioning
	80)	Waste will be stored in designated areas.	Daily	Contractor/Employees	ECO	Construction, Operational and Decommissioning
	81)	Waste bins will be labelled for their designated use.	Daily	Contractor/Employees	ECO	Construction, Operational and Decommissioning
	82)	All waste contaminated with hydrocarbons will be considered	Daily	Contractor/Employees	ECO	Construction, Operational and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
		hazardous waste, regardless of the level of contamination.				
	83)	Safe disposal certificates to be kept on record.	Daily	Contractor/Employees	ECO	Construction, Operational and Decommissioning
	84)	Bins for hazardous and non-hazardous waste should be clearly separated and marked. Waste should be separated according to the appropriate bin.	Daily	Contractor/Employees	ECO	Construction, Operational and Decommissioning
	85)	Domestic waste will be disposed at a registered landfill site.	Weekly	Contractor/Employees	ECO	Construction, Operational and Decommissioning
	86)	No domestic or solid waste will be disposed of on site. All waste will be collected in drums and disposed of at a licensed landfill site.	Weekly	Contractor/Employees	ECO	Construction, Operational and Decommissioning
Protect artefacts of cultural or archaeological importance.	87)	If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease and it must be reported immediately to the nearest museum/archaeologist or to the SAHRA, so that a systematic and professional investigation can be undertaken	Daily	ECO	Project Manager	Construction, Operational and Decommissioning

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	88)	Construction workers will be made aware of the requirement to report archaeological discoveries	Weekly	ECO	Project Manager	Construction, Operational and Decommissioning
Minimise the impact on the visual character of the surrounding areas by the construction of the plant infrastructure.	89)	Artificial lighting will be restricted to areas under construction. Yellow sodium lights will be recommended on site as they do not attract as many invertebrates at night and will not disturb the wildlife.	Once Off	Project Manager	Project Manager	Construction & Operation
	90)	Natural vegetation, wherever possible, must be retained.	On-going	Project Manager	Project Manager	Construction & Operation
	91)	The structures on site must be designed to minimise visual intrusion.	Once Off	Project Manager	Project Manager	Construction & Operation
	92)	The colour selection and tone must be carefully considered to mitigate visual impacts.	Once Off	Project Manager	Project Manager	Construction & Operation
Minimise the safety risks due to increased possibility of crime and safety conditions of employees.	93)	Clear sign boards should be erected at the entrance to the site to indicate that a construction area is being entered and safety precautions should be followed;	Once Off	Contractor/Employees	Project Manager/ECO	Construction & Operation
	94)	Notification signs must be posted around the site warning residents and visitors about the hazards around the construction site;	Once Off	Contractor/Employees	Project Manager/ECO	Construction & Operation

Objective	No.	Monitoring				Project Stage
		Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
	95)	Workers should be adequately trained to follow all safety procedures and wear protective equipment where required;	Continuous	Contractor/Employees	Project Manager/ECO	Construction & Operation
Prevent the impacts resulting from traffic movement to and from the Site.	96)	Reduce the amount of trucks entering the premises by transporting larger loads;	Continuous	Contractor/Employees	Project Manager/ECO	Construction & Operation
	97)	Speed limits will be restricted at the around the site to 10 km/h.	Continuous	Contractor/Employees	Project Manager/ECO	Construction & Operation
	98)	Investigate the installation of renewable energy – such as solar or wind power – to the operations.	Continuous	Project Manager	Project Manager/ECO	Construction & Operation
	99)	The operational footprint will be kept as small as possible. All disturbed areas will be rehabilitated.	Continuous	Project Manager	Project Manager/ECO	Construction & Operation

4. Environmental Management Plan

4.1. Overview

The following management plans need to be implemented during construction, operation and decommissioning of the proposed charcoal processing facility and its associated infrastructure envisaged.

- Construction Management Plan;
- Construction Control Plan,
- Rehabilitation Plan; and
- Operation Management Plan.

Many of the issues to be addressed in these plans are regulated in existing laws, regulations and guidelines. In addition, it is recognized that the content of several plans will be generic, in the sense that existing procedures are documented in standard code of practice, and that adaption of such generic plans will only be possible as a dynamic process during construction, operation and decommissioning.

4.2. Construction Management Plan

The construction management plan to be implemented by the contractor shall include the following key measures:

4.2.1. Management of Construction Campsite

1. The contractor shall comply will all relevant laws and regulations concerning water provision, sanitation, wastewater discharge and liquid and solid waste handling and disposal. The contractor is referred to the requirements of the EMA
2. The campsite will be access controlled to prevent the access of livestock and local fauna.
3. The contractor shall not locate the campsite, or sanitation facilities, in any areas in which vegetation is pristine, nor within 100 m from any watercourse.
4. The contractor shall at all times carefully consider the machinery required for the desired task while minimizing the extent of environmental damage.
5. The contractor shall keep construction campsites clean and tidy at all times. The contractor shall not leave domestic waste uncontained, and temporary storage shall be enclosed to keep out people and animals. No permanent domestic waste disposal shall be permitted at the campsites. All domestic refuse is to be removed to an existing licensed landfill site.
6. The contractor shall take specific measures to prevent the spread of veld fires, caused by activities at the campsites. These measures may include appropriate instruction of employees about the fire risks and the construction of firebreaks around the site perimeter.

7. All vehicles and plant will be allocated a dedicated parking area in the camp site. Plant still standing for long periods of time will be provided with a drip tray in order to contain any possible hydrocarbon spills. Drip trays will be provided with absorbent material on a permanent basis.
8. Adequate firefighting equipment shall be made available and maintained on site.
9. Decommissioning of the campsite will involve removal of all compacted platforms and slab foundations or as agreed with the land owner.

4.2.2. Management of Fuels and other Hazardous Materials

10. The contractor shall comply with all applicable laws, regulations, permits and approval conditions and requirements relevant to the storage, use and proper disposal of hazardous materials.
11. The contractor shall manage all hazardous materials and wastes in a safe and responsible manner, and shall prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials.
12. Should soil be contaminated by hazardous substances, soil will be removed and disposed of at a registered hazardous waste disposal facility.
13. The contractor shall not construct fixed fuel storage or refuel any vehicle or equipment within 100 m from a watercourse or wetland, within a floodplain, or where there is the potential for spilled fuel to enter a watercourse or groundwater. Should it not be possible to establish such facilities outside the 100 m zone, the contractor shall ensure that the necessary precautions to prevent and clean up spillages.
14. The contractor shall enclose all fixed storage.
15. The contractor shall place on – site tools and equipment, such as pumps, compressors, and generators on impermeable sheeting (i.e. polyethylene or other similar materials) to prevent hydraulic fluid or fuel leaks from contaminating soils or groundwater or entering any watercourse or wetland.
16. The contractor shall take all reasonable precautions to prevent fuel and lubricant spills during the course of construction. To this end, the contractor shall ensure that regular audits are performed to verify that no leakage or defective equipment is brought onto site.
17. The contractor shall ensure that there is sufficient spill containment and absorbent material available on site to manage accidental spills. The contractor shall immediately clean up accidental spillages of fuel and oils, or other hazardous substances.

4.2.3. Management of the Construction Footprint

18. The contractor shall prevent littering and the random discard of solid waste on the site.
19. The contractor shall manage hazardous waste.
20. The contractor shall minimize the risk of fires.
21. The contractor shall prevent trespassing on the site.

22. The contractor shall prohibit, and actively monitor and prevent, poaching or harassment of wild animals by contract employees.
23. The contractor will ensure that travelling speeds do not exceed 10 km/h and shall ensure that this restriction is enforced. This may include, but not limited to, the monitoring of vehicle speeds and the erection of speed limit signs.

4.2.4. Management of Dust and Noise Nuisance during construction and operation

24. The contractor shall control dust along the construction footprint so as to ensure that no detrimental effects to occupiers of the land or general public are caused. Control measures to be considered include the use of water browsers to wet down surfaces that have been denuded and which have the potential to generate dust.
25. Wetting of denuded areas, including the topsoil stockpile, will be done in such a manner than only enough water is utilized for dust suppression, and to ensure no unduly runoff is caused.
26. The contractor shall comply with legal requirements for the management of noise impacts.
27. The contractor's employees shall not make recreational use of all – terrain vehicles or motorcycles on site.
28. An appropriate freeboard will be enforced for trucks hauling dirt, sand, soil and other loose materials. All material transported by trucks will be covered to prevent undue nuisance dust during transportation.

4.2.5. Waste Management

29. Temporary storage of construction waste will be limited to within the construction camp site, and areas designated.
30. The contractor shall be responsible for the collection and removal of waste from the construction site.
31. The contractor shall arrange for the removal of waste on a weekly basis to a registered landfill site. Records of this disposal shall be kept on site.
32. Hazardous waste will be separated from domestic waste and stored in demarcated bins.
33. Hazardous waste bins will be stored on a hard standing surface, covered and made water tight.
34. Safe disposal certificate will be obtained from the sub-contractor appointed for the removal of hazardous waste, and will be in adherence to the EMA Act and the Walvis Bay Municipality waste management guidelines and by-laws.
35. The contractor shall respect the property and rights of the landowners and occupiers at all times and shall treat all such persons with courtesy.
36. Access over land, the integrity of fences, the closure of gates, control of veld fires, littering, dust control, noise abatement, harassment of animals, sedimentation and contamination of surface and ground water, damage to landscape and vegetation, and all such environmental matters, shall be controlled as far as practical by the contractor in the best interests of Charcoal Warehouse cc.

4.2.6. Complaints Register

37. The contractor and proponent shall establish and maintain a register for periodic review by the Project Management Team that logs all complaints raised by I&APs about the construction and operational activities.
38. The register shall be regularly updated and maintain records, including the name of the complainant, his/her domicile and contact details, the nature of the complaint and if any action was taken to rectify the problem.

4.2.7. Rehabilitation Plan

39. The contractor shall restore the construction footprint to the natural contours of the ground and shall allow normal surface drainage, as far as practical.
40. The contractor shall loosen compacted soils along the construction footprint by means of a plough or scarified. Scarifying areas where topsoil has been removed shall be carried out prior to the replacement of topsoil. Care shall be taken to avoid topsoil inversion if scarifying is carried out in areas where topsoil has not been removed. Any ripping or scarifying operations shall not exceed a depth of 100 mm.
41. The contractor shall prevent concentrated runoff along, or next to, the construction footprint, and shall do so by shaping the land, establishing vegetation, and taking other appropriate measures to absorb and disperse runoff.
42. In places where erosion control is required, including gullies, watercourses, large depressions, and steep slopes, the contractor shall construct diversion banks across the construction footprint to divert the flow of water away from the construction area and into the natural drainage courses.
43. Where the land is naturally armoured with surface rock or stone, the contractor shall, after construction, replace the armouring over the construction footprint to protect against erosion.

4.2.8. Operational Management Plan

44. Regular monitoring must be conducted during the operation to ensure that rehabilitation measures have been successful, and to determine whether any unstable cut and fill area need to be stabilized, especially after heavy rains.
45. Charcoal dust is one of the major issues that the proponent should ensure that employees are protected against respiratory illnesses and that dust proliferation to neighbours is prevented by all practicable means. As recommended, dust cartridges in the processing plant will to be installed.
46. A clean-up procedure will be conducted on a regular basis in order to ensure that litter, oil spills etc., are cleaned timeously and pollution of the watercourse is minimized.
47. Noise pollution emanating from the operation of the facility, affecting sensitive receptors will be mitigated if deemed necessary, through the construction of an earth berm or planting absorbent vegetation along the route.

48. Storm water management structures must be cleaned and maintained on a regular basis in order to minimize erosion that can cause siltation of aquatic systems. This will require regular inspections of the storm water infrastructure to confirm its functionality.

5. External Auditing

The key to a successful EMPr is appropriate monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner. In the event where discrepancies are identified, the problem must be investigated and attended to. All the results obtained during environmental monitoring must be documented for audit purposes.

An audit of the environmental management actions undertaken is essential to ensure that it is effective in operation, is meeting specified goals, and performs in accordance with relevant regulations and standards. Audits should be conducted during the construction phase of the facility to ensure adherence to the management measures contained in the EMPr. The construction audit schedule will be determined by the conditions of the EA. The frequency of the construction and operational audits may vary and will be synchronised with the construction schedule.

During Operation Audits will also be undertaken by an appointed consultant, In addition every quarter from the awarding of the Environmental Clearance Certificate a report will be compiled on environmental performance. This will be followed with bi-annual reports to MET: DEA on project operations during construction and operational phases. It is imperative to understand the a clearance certificate is valid for 3 years only, after which a renewal will have to be applied for along with performance report over the past years in terms of environmental compliance to existing legislation and this EMPr.