Project Name:	***ENVIRONMENTAL MANAGEMENT PLAN FOR THE CONSTRUCTION AND OPERATION OF A CHARCOAL PROCESSING AND PACKAGING PLANT ON PORTION 24, USAKOS, ERONGO REGION***
The Proponent:	**Africa Burns (Pty) Ltd** **P O Box 1094** **SWAKOPMUND**
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Table of Contents

1. INTRODUCTION

According to the Environmental Management Act (2007), the construction and operation of a charcoal processing and packaging plant on Portion 24, Usakos, Erongo Region are part of the listed activities for which an Environmental Impact Assessment (EIA) has to be conducted and which needs an Environmental Clearance (EC) from the Ministry of Environment and Tourism (MET) before implementation of the project. The MET indicated that they will consider the Environmental Clearance upon the submission of an Environmental Management Plan (EMP).

The proponent (Africa Burns (Pty) Ltd) appointed *Green Earth Environmental Consultants* to prepare an Environmental Management Plan (EMP) to guide the operations of the proposed charcoal processing and packaging plant. The EMP was prepared from information gathered from the proponent (Africa Burns (Pty) Ltd) and knowledge of the site (based upon several site visits) as well as from experience with EIA's and EMP's conducted for other similar operations. The assessment concluded that the charcoal plant will not pose any long term or irreversible threats to the receiving or surrounding environment if the operations are conducted along the guidelines of this EMP.

The EMP included in this document contains practical measures that should be taken and maintained by the developer and manager of the proposed charcoal plant in order to prevent potentially negative impacts on the environment, both from the ecological and social perspective. The EMP assigns rules, regulations and responsibilities and can be used by the MET and other relevant authorities as checklist to monitor compliance at the site. The idea is to minimize any negative impacts or to completely avoid it if possible in the operation of the proposed project.

The actions stated in this document (EMP) should be diligently followed in order to maintain a safe and healthy sustainable environment for future generations residing on the land and immediate environment. The proponent is responsible to oversee that the EMP is implemented and adhered to at all time. MET is kindly requested to consider and approve the EMP below and to issue a Clearance Certificate.

2. BACKGROUND AND SITE INFORMATION

The EMP included in this document is based on the principle that the relevant authorities with the MET as responsible Ministry, through their Environmental Control Officer's (ECO) with the proponent of the project as responsible person, should ensure that:

- The necessary environmental authorizations and permits have been obtained and are in use;

- Open and direct communication between the proponent and Interested and Affected Parties (I&APs) with regards to environmental and ecological matters are maintained;
- Regular site inspections of constructed areas and operations is conducted to ensure compliance with the EMP of the site;
- By complying with the guidelines of the EMP, the impact on the receiving environment is kept to a minimum or avoided;
- Immediate action is taken if EMP specifications are not followed or adhered to;
- The proponent/manager of the charcoal plant need to find environmentally responsible solutions;
- All new personnel/workers should be informed on the stipulations of the EMP and that environmental awareness is regarded as a high priority;
- Level of implementation and adherence to the EMP is audited on a regular basis;

There should be a clear message to the management and staff/workforce of the project that non-adherence to or non-compliance with the EMP can lead to the withdrawal of the Environmental Clearance Certificate and might lead to the closure of the charcoal plant's operations. It is against this background that the EMP has been drafted.

3. RECOMMENDATION

The following measures are recommended:

- That Africa Burns (Pty) Ltd be granted an Environmental Clearance to proceed with the construction and operation of the proposed charcoal processing and packaging plant by the Environmental Commissioner of the Ministry of Environment and Tourism.
- The continuous monitoring of the identified impacts on the environment to be able to take preventative remedial action.
- The implementation of the Environmental Management Plan (EMP) to mitigate identified impacts which are associated with the construction and operational phase of the project.
- The consideration of green building/environmentally sustainable designs in the planning, construction and operational phases for example making use of solar panels, rainwater tanks, recycling depots, etc.
- Testing of the water quality is also recommended in order to determine a baseline of the current water quality which can be used to monitor contamination which might occur from the proposed charcoal plant's operations and to determine if the water is suitable for use in the process. It is proposed that the water quality is monitored through annual testing and comparison with the baseline analysis.
- An Environmental Audit to be conducted on the new charcoal plant a year from the date of the Environmental Clearance Certificate by an inspector (from the DEA) or an independent Environmental Practitioner to ensure that

the Environmental Management Plan has been implemented and is adhered to on a continuous basis.

- Training and induction courses should be given to the managers, workforce and employees.
- The proponent is responsible for ensuring that environmental awareness education of all employees and contractors is done satisfactorily.
- The proponent should ensure that employees and contractors are made aware of the environmental requirements of the project.
- The contractors, sub-contractors and staff should familiarize themselves with the full content of the Environmental Management Plan.
- Periodic environmental monitoring must be taken on a regular basis. This should be done to ensure compliance with all aspects of the Environmental Management Plan.
- A copy of the Environmental Management Plan should be kept at the site office and should be distributed to the manager, contractors and sub-contractors.
- Non-compliance to the measures stated in the Environmental Management Plan: Implement suitable corrective action and prevent recurrence of the incident.
- An independent environmental control officer should be appointed to monitor and review the on-site environmental management and implementation of the Environmental Management Plan.
- The environmental control officer should ensure that the impacts are kept to a minimum.
- He/she should be inspecting the site and surrounding areas regularly and should monitor an ongoing program to promote environmental awareness.
- He/she should request the removal of people or equipment not complying with the specifications of the Environmental Management Plan.
- Any areas outside the designated working zone should be considered “no go” areas.

4. MAIN IMPACTS

Dust and Noise: The proponent appointed SHEQ-IQ, an independent occupational health, safety and environmental consultant to establish benchmarks on charcoal and general dust emissions and noise levels and to advise them on site and plant management practices to ensure that these levels remain below legally required levels. The regular monitoring of the charcoal and general dust and noise levels will form part of the Environmental Management Plan. The following information was obtained from Eliaser Ikela from SHEQ-IQ:

Stressor	**EMP Standard**	**Measure**	**Sampling / Analytical method**	**Monitoring Frequency**
Noise	**≤ 85 dB(A)** Source:	Occupational exposure limit	N/A	3 yearly as per the Namibian

	• Namibian Labour Act, Regulations relating to the health and safety of employees at work – 197(2). • Namibian Labour Act, Regulations relating to the health and safety of employees at work – Noise regulations (2)(2).	(OEL) • Actual or attenuated personal exposure to noise ($L_{Aeq,8hr}$). $L_{Aeq,8hr}$ = Sound pressure level equivalent to the noise exposure normalized to a nominal 8-hour working day.		Legislation. **Note:** It can be shorter if there is a significant change in the process or as per Company standard.
Charcoal dust	**≤ 5mg/m^3** Source: Occupational Safety and Health Administration (OSHA), USA Note: No specific local or international standard but this is the most applicable (See comments).	Occupational exposure limit (OEL) – Time-weighted average (TWA). • Personal exposure to dust (E8hrEV) E8hrEV = Equivalent 8 hour exposure value. Time weighted average normalised over 8hours.	**NIOSH 0600** [Particulates Not Otherwise Regulated (PNOR), Respirable] Note: No specific local or international method to charcoal dust but this is the most applicable (See comments).	2 yearly. **Note:** • No requirement in Namibian legislation. • Above based on South African Hazardous Chemical Substances regulation as a guideline. • It can be less or more depending on Company standard or stakeholder expectations.
Nuisance dust	Refer to below table for standards	Dust fall rate (D)	**ASTM D 1739**	Monthly for the

	(Acceptable dust fall rates). Source: South African National Standard (SANS) 1929:2011 and South African National Dust Control Regulations (Air Quality Act, Act 29 of 2004). Note: No specific local standard and thus an applicable regional standard which is derived from international standard was used.	(mg/m^2/day, 30-days average)		first year to establish baseline year. Monitor for one year or more to cover all seasons. Note: Once monitoring is in place, it must be done for the whole year. • Need for ongoing monitoring program will be evaluated after the first or 2nd (if done for 2 years) depending on Company and stakeholder's expectations. • There is no need for ongoing monitoring if there is no problem (i.e. can stop and resume later and continue to assess the situation). • NB: to clear it with the authorities and interested parties if

				stopping ongoing monitoring program.

Table 1: Acceptable dust fall rates

Restriction Areas	Dustfall rate (D) (mg/m²/day, 30- days average)	Permitted frequency of exceeding dust fall rate
Residential area	D<600	Two within a year, not sequential months.
Non-residential area	600<D<1200	Two within a year, not sequential months.

Comments

Personal exposure to charcoal dust;

- A carbon black standard of 3.5mg/^{3} was used - OSHA and NIOSH 5000.
- Since there is no occupational exposure limit for charcoal dust, the suitable method will be the one used for all stressors which do not have a specific method or standards (i.e. Particulates Not Otherwise Regulated – NIOSH 0500 or 0600).
- 0600 was selected for respirable dust because this is the method which specifically states that it is suitable for non-volatile respirable particulates and recommended for coal dust.
- The carbon black method is more suitable for volatile organic compounds from combustion of petroleum products.
- Carbon black also use an open face filter cassete (NIOSH 0500) of which the standard is 15mg^3 for OSHA and 10 mg/m^3 in other jurisdiction.
    - This method allows more dust in the sampler (all fractions) and that is why the standard is high.

5. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The proposed EMP has been drawn to give guidance to:

- Planning of future extensions or replacing of infrastructure, equipment and services **(Planning Phase)**;
- Constructing, rehabilitation and developing any infrastructure on the site **(Construction Phase)**;
- Operations concerning the daily management and running of the charcoal plant and associated activities **(Operational phase);**
- Decommissioning of the charcoal plant **(Decommissioning Phase).**

5.1. PLANNING PHASE

The location and design of the infrastructure must fit into the surroundings and the natural environment. The manager of the charcoal plant must ensure that the sense of place be kept in accordance with the surrounding areas.

Construction and operation of the charcoal plant are based on the assumption that it is feasible and viable. It is important that this be tested because of the work opportunities and socio-economic aspects involved. It is advised that the charcoal plant be audited by an independent auditor to verify if it is feasible.

Specific actions are required to ensure the negative effects or impacts are minimized on the site. The following measures should be followed:

5.1.1. Addressing of Aesthetic and Visual Issues	
Responsible Person	**Measures**
The Proponent, Developer or Builder	a. Infrastructure on the site must be visually pleasing namely it must be in concordance with a certain natural style since the site is in rural/natural surroundings. b. The building shapes must not contrast too much of the area namely high rising buildings in future should rather be avoided. c. The use of earthy colors (paint) on the infrastructure, which are in harmony with the environment, are strongly recommended. d. If construction on the site is carried out, it must make use to a large extent of the natural materials namely rocks from the area, wooden poles either from already non-living trees or commercially produced poles and thatch in order not to destroy the environment. e. Should there be any development regarding communication masts, solar panels, water tanks and other prominent features, it must be placed or constructed at spots that prohibits visual destruction or minimize visual impact. f. Tourists or any person driving past the operations should not be able to notice visually unpleasing objects on the site. g. Avoid any neon or non-earthy signs that will reduce the sense of place, rather use rustic metal or wood to construct signs. h. If practical and feasible, all additional or new pipes and cables must be buried underground and not be visible to the public. i. The visual character of the charcoal plant should not compromise the integrity of landmarks and places of cultural and heritage significance such as heritage sites, national monuments, urban conservation areas, old buildings, special scenic areas and tourist sites of interest.

	j. The charcoal plant should not significantly impact on the integrity of significant views. If a proposed facility may interrupt such a view, the options to minimise the visual impact should be considered.

5.1.2. Ensuring water consumption efficiency	
Responsible Person	**Measures**
The Developer and Builder	a. Any further addition of lawns or cultivated gardens on the site must be limited since it makes use of sparse clean water. The cultivation or enhancements of locally adapted natural grasses which can survive the natural conditions are preferred. b. Rivers and drainage systems bordering the site must be maintained and channels must be kept open to conserve the environment and flow of water. c. Water efficient systems/equipment which limit the use of water or make recycling of water possible should be introduced.

5.1.3. Ensuring energy consumption efficiency	
Responsible Person	**Measures**
The Developer or Builder	a. Preference must be given to the implementation of energy conserving and efficient systems. Renewable energy sources like gas produced from household waste or solar should be considered to replace the current commercially supplied electricity where possible. b. Devices or equipment which conserves energy must be introduced and used in the operations. c. Cautioned measures on how to handle electricity in the facility must be addressed to everyone working or residing on or near the facility, so as to conform to safety regulations in workplace.

5.1.4. Limiting creation of solid waste	
Responsible Person	**Measures**
The Manager	a. Consumables and containers which can be recycled or which are biodegradable must be introduced in order to limit the creation of solid waste which has to be taken out of the area to be managed and handled at another site. b. Hazardous waste should be transported to an adequate landfill site. c. Concepts like pollution control, material substitution and maximization on recycling content in order to reduce waste generation and disposal should be introduced.

5.1.5. Health and Safety of the Workforce	
Responsible Person	**Measures**
The Builders, Workforce and Contractor	a. The safety, security and health of the labour force, employees and neighbours are of great importance, workers should be orientated with the maintenance of safety and health procedures and they should be provided with PPE (Proper Protective Equipment). b. A health and safety officer should be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the work place. c. The introduction of external workers into the area is sometimes accompanied with criminal activities posing security risks for neighbouring portions/farms therefore security measures should be introduced to prevent such activities for example a security guard can be employed to safeguard the property. d. The welfare and quality of life of the neighbouring land/farms and workforce needs to be considered in order

	for the project to be a success on its environmental performance. e. Conversely, the process should not affect the overall health of persons related to the project including the neighbours.

5.2. CONSTRUCTION PHASE

Construction, decommissioning and rehabilitation are generally characterized by various activities that will take place on the site namely landscaping of the site, earthworks for the construction of bulk services and infrastructure, construction of additional buildings, removal, relocation and planting of trees and shrubs and installation/rehabilitation of sewer and water pipelines. All these activities have an unavoidable effect on the natural environment. Various actions must thus be undertaken to minimize the effect on the receiving and surrounding natural environment. The responsible persons in the entire process will be the proponent, the developer, project manager, subcontractors, etc. The developer takes the ultimate responsibility during the construction.

MET can ensure that the charcoal processing and packaging plant's operations adhere to the EMP stipulations through regular site inspections. The manager must ensure that the developer are aware of the EMP stipulations and enforces it on site. Throughout any construction it will be the Project Manager's, Quantity Surveyor's and Engineer's obligation to inspect the site at least once per month to make sure that all the mitigations measures are followed, adhered to and implemented. The Project Manager must do a final inspection and evaluation once the charcoal plant is completed. The project manager must also issue the building contractor with a completion letter once he or she is satisfied that the project has been done in accordance with the Environmental Management Plan. A copy of the final letter must be sent to the Director of Environmental Affairs (DEA).

Damage to the environment during construction has a few origins that differ to large degree: accidental, negligent, spillage, vehicles, earthmoving equipment, generators, workshops and plant areas, excessive noise or heat, workers exposed to physical and chemical hazards. There are mitigation measures that must be followed in order to minimize or avoid damage and pollution. The following measures are based on the Ministry of Environment and Tourism (MET) regulations and must strongly be adhered to:

5.2.1. Spillages of potentially toxic materials	
Responsible Person	**Measures**
The Developer, Builders and Workforce	a. Any spillages of potentially toxic materials, whether by accident or through negligence, must be reported and the corrective action must be undertaken to 'clean' and to remove the evidence of the spillage. b. Make use of design structures and transfer equipment so as to avoid spillage as far as possible. c. Train the staff members on how to make use of diesel/fuel transfer and to avoid spillage. Fuel storage should be bunded. d. Any spill must be cleaned up immediately by removing the spill together with the polluted soil and disposing of it at a recognized dumping site or facility. e. Install oil traps in all appropriate places to collect potentially toxic materials. f. When there is made use of diesel generators on site it must be placed on concrete slabs. g. When a workshop is introduced, the entire work area must be lined by concrete. h. Any runoff from the work areas either arising from wash downs or rainfall must be channeled into a pollution control pond. i. There must be a weekly monitoring of all equipment namely a visual check; there must also be a weekly monitoring of work areas.

5.2.2. Site Preparation	
Responsible Person	**Measures**
The Developer and Builders	a. Before any workers, equipment or building materials are brought in; the developer must set out the entire plan. The corners of every building, walkway, driveway, parking area, water installation, power generator, etc must clearly be marked. b. The marked out area must be inspected and approved by the Engineer before any construction is started. c. The building contractor must demarcate the area with metal droppers and hazard tape so that there will be no confusion about which area may be disturbed for additional development and which areas will strictly be off-limits. d. Disturbance and risks related to sitting and construction should be minimized at all time. Construction activities and the site location should comply with national environment protection legislations and best practice environmental management guidelines. e. Construction should be carried out in a safe and effective manner and obstruction or danger to pedestrians or vehicles caused by the location of the charcoal plant, construction activity or material used in construction should be minimized.

5.2.3. Building Materials	
Responsible Person	**Measures**
The Developer, Builders and Workforce	a. All the materials needed for construction namely bricks, sand, cement, poles, roofing, etc., must be brought into the site from outside. b. In the case of items that are not brought from a registered shop for example poles, the contractor

	must ensure that the harvesting of these materials did not cause any serious impacts at the place which they came from. c. Sand/rock that will be used for building should only be collected from approved sites or be commercially procured from a supplier. d. No materials, including rocks for building purposes may be collected from the environmentally sensitive areas pointed out in the Environmental Impact Assessment. e. The design, location, installation and operation of underground cables or ducts must be in accordance with the principles as set out. f. Where underground cables or duct require the removal of protected plant species, a permit from the Ministry of Agriculture, Water and Forestry – Department of Forestry is required for the removal of such a plant.

5.2.4. Facilities for Workers	
Responsible Person	**Measures**
The Proponent, Developer and Builders	a. All workers that need to reside on the site while construction is in progress will have to be housed in temporary structures like tents or caravans to limit the impact on the environment. The majority of the workforce will consist of people already living in the area and therefore minimum impact on the environment is expected. b. The workforce residing on the site must be provided with water, proper toilets and washing facilities. c. Cooking on the site must be done on gas or open fires. When the workers make use of open fires, these must be made in a designated spot so that there will be no possibility for a veldt fire occurring. d. Construction workers working or residing on site should not be allowed to collect wood on site for cooking purposes. The manager or developer must provide them with wood/charcoal preferably from

	intruder bush from outside sources.

5.2.5. Waste Management	
Responsible Person	**Measures**
The Contractor, Developer and Builders	a. Should the developers and sub contractors make use of combustible waste for example empty cement bags, it must be collected at the end of each day and be stored in a cage structure to avoid it being blown around. b. All combustible and non-combustible waste must be removed from the site at least once a week to a designated and properly managed rubbish/waste dump site. c. Any waste that is stored temporarily on the site must be secured in refuse bags stored in a fenced-in area to avoid it being blown into the veldt. d. A temporary waste storage site or cage structure may not be set up close to any dam or any water courses. e. Measures must be taken to prevent waste that attracts scavengers for example jackal or vultures. f. No paint, solvents, thinners, diesel, oil or any other harmful substances may be poured onto the ground. The substances must be collected in containers and be removed from the site for proper disposal.

5.2.6. Water Use	
Responsible Person	**Measures**
The Developer, Builders and Workforce	a. A Waste Water Permit should be obtained from the Ministry of Agriculture, Water and Forestry if waste water will be produced.

	b. Water must at all times be used sparingly in the construction period as well as in all the other phases. c. All tapes, pipes and tanks that will be constructed must be maintained and managed so that they do not leak. d. Water pipelines laid to the site shall be done in such a manner that the surface and natural vegetation are not unduly disturbed. e. Weekly visual checks on possible spillages must be conducted. f. Effluent water from washing facilities must be disposed of in a properly constructed French drain/storage/septic tank that must be located as far as possible, but not less than 50 meters from a stream, river, pan, dam or borehole. g. French drains may only collect domestic type wash water, any effluent containing oil, grease or other industrial substances must be collected in a suitable receptacle and must be removed from the site, it could either be for resale or for appropriate disposal at a recognized facility. h. There must be weekly inspections of drains. i. These drains must be demolished after construction and the sites must be cleaned and restored to its natural state. j. If concrete reservoir walls are built, it must be painted in a camouflage colour to aid in concealing it. k. When reservoirs are built, it must be covered to reduce evaporation. l. If practically feasible, no reservoirs must be visible from the main road. m. There must also be weekly visual checks of the reservoirs and it must be supervised on site by the managers. n. Water must be recovered if used for cutting, cooling or washing. o. The workforce must be advised to use water sparingly for human consumption. p. Water consumption must be checked on a three monthly basis.

5.2.7. Wildlife	
Responsible Person	**Measures**
The Workforce, Builders, Contractors and Residents	a. No wild animals on the site may be trapped or killed for any reason whatsoever by the workers, builders, contractors or residents.

5.2.8. Fuel, Transport and Storage	
Responsible Person	**Measures**
The Vehicle Drivers, Builders, Contractors	a. Vehicles that transport materials to and from the site must be road worthy. b. All drivers that transport materials must have a valid driver's license and must at all times adhere to traffic rules and regulations. c. Vehicles carrying loads must be properly secured in order to completely avoid items falling off the vehicle at any time. d. The materials used in the construction process for example cement, bricks, poles, etc., must be stored at a central storage area on the site in order that the site be neat and orderly and to avoid a situation where materials are lying all over the place. e. Fuels, paints, solvents and chemicals must be stored in watertight containers that will ensure it cannot react with each other or be spilled onto the ground.

5.2.9. Vehicles, Trucks, Roads and Tracks	
Responsible Person	**Measures**
The Vehicle Drivers, Builders and Contractors	a. Any haphazard driving of any vehicles where there are no existing routes must be avoided. b. Vehicles, trucks and earthmoving equipment with headlights must switch their headlights on at all times. c. No vehicles or trucks that move in the area may exceed 40km/h with warning, and speed signs must be positioned at relevant locations. d. All the personnel responsible for the driving of transport vehicles must be in possession of a valid driver's license. e. No littering is allowed along the road, dumping of waste and scrap, etc. and all drivers must be made aware of this. f. Daily or weekly visual checks are required and all drivers must be supervised. g. The safety of surrounding residents and land users, other motorists and animals should not be compromised by the vehicle associated with the constructional operation. h. Traffic control measures should be taken during construction in accordance with the traffic control regulations.

5.2.10. Vegetation	
Responsible Person	**Measures**
The Builders, Contractors and Workforce	e. There must be an overall preservation of vegetation communities to ensure minimal disruption of important vegetation communities and valuable plant specimens. f. At all times, clearance of vegetation for firewood must be avoided.

	g. Alternative fuel and/or power sources must be made available namely paraffin stoves and diesel-driven generators if workers are accommodated on the site. h. No trees or shrubs must be damaged for the purpose of obtaining firewood. i. Daily inspections must be carried out and weekly checks whether the stock of alternative sources is sufficient. j. The developers or constructors must ensure the maximum use of local plant material for rehabilitation processes. k. Before new site construction begins, the upper level of the soil must be stripped and stockpiled separately so that this layer can be utilized in the rehabilitation process. l. There must also be a visual check on the wind erosion on a monthly basis. m. Disturbance of flora and fauna should be minimized during construction and vegetation replaced to the satisfaction of the responsible authority at the conclusion of work.

5.2.11. Fauna	
Responsible Person	**Measures**
The Developers, Constructors, Residents and Workforce	a. No hunting and trapping of resident animals will be allowed on the site. b. The developers or constructors must fence off waste pit storage areas to prevent animals from falling in or getting entangled in waste. c. The fences must be sufficient to control the access of large and small animals. d. There must be weekly visual checks of the fences and staff must report to the managers.

5.2.12. Noise	
Responsible Person	**Measures**
The Workforce, Contractor and Builders	a. If a generator is used, it must be positioned away from neighbours and must have boarding to help suppress noise. b. There must be limited noise impacts on adjacent settlements and on the workforce. c. There must be a weekly noise check of the generator and other equipment namely of trucks and construction machinery.

5.2.13. Dust	
Responsible Person	**Measures**
The Developer, Builders and Workforce	a. The impact of dust on the air quality in general and on the fauna and flora must be limited. b. The general speed limit on the construction site must be kept below 40km/h to limit dust generated by construction traffic. c. There must be daily visual monitoring of transport activities and dust generation in the area. d. Good general ventilation, maintenance, housekeeping, and training. Protective clothing required, and possibly respiratory protective equipment (RPE) to deal with cleaning and maintenance. e. Local exhaust ventilation; restricted access; good housekeeping; protective clothing, and eye and skin protection depending on substance, and possibly RPE to deal with cleaning and maintenance; specific training on hazards and control. f. Containment; controlled access to labelled areas; 'permit to work' for maintenance, with written maintenance procedures; protective clothing, eye and skin protection depending on substance, and suitable RPE to deal with cleaning and maintenance; specific training on running of plant,

	maintenance, control, and emergencies (*World Health Organisation, 1999*). g. The commonest forms of process modification are the use of damp materials and wet methods, such as wetting down dusty products, wet drilling, water spraying at points of dust generation, wet cleaning of floors and work surfaces, and the use of stabilizers for stock or waste piles. One of the ways in which wet methods reduce dust is that larger lumps are coated with a thin film of liquid, which encloses small dust particles that might otherwise become airborne. Wet methods are therefore more efficient when the water is introduced at the point of dust generation so that the particles become wetted before having a chance to disperse into the ambient air (*World Health Organisation, 1999*). h. Air in the breathing zone of the workers should be monitored and, if needed, ventilation and/or personal protection should be used as complementary measures. There is a danger that the presence of water sprays may give the workers an unjustified belief that there is no dust exposure. Whenever wet methods are used, the evaporation of the dust-laden water may constitute a secondary dust source; this must be avoided or controlled. Another problem to be considered is the increase of heat stress caused by the increased humidity; particularly in hot places and under extreme situations, this may exclude the use of wet methods (*World Health Organisation, 1999*). i. Piped water can be used with portable tools. A water system could reduce respirable dust by more than 90%. Wet methods do not necessarily use water. Oils or water have been added to solids to reduce dustiness in many situations (*World Health Organisation, 1999*). j. The use of water as a wetting agent in connection with the bulk outdoor storage of certain dusty materials; wet processing of minerals; the use of slurries and wetted materials in the ceramics industry; and wet milling rather than dry milling. It is important that the wetting liquid does not interfere with the subsequent processing of the material (*World Health Organisation, 1999*). k. Water sprays are often used in operations such as grinding, transport and transfer of dusty materials; over rocks and ores; or as a “curtain” to confine dust to certain areas and prevent it from dispersing over large portions of the work environment. There are two actions involved. First, such sprays add moisture to the working material, and so reduce the propensity of the dust to become airborne.

	Second, such sprays produce airborne droplets, which act as collectors for the airborne dust particles (*World Health Organisation, 1999*). l. The following protective clothing and equipment should be used on site: Producing, processing and packaging charcoal exposes workers to risks such as snakebite, heat exhaustion, inhalation of sawdust and smoke, and possible cuts from equipment. Protective clothing can prevent many such injuries as well as the diseases linked to working in the charcoal industry. Generally, a set of protective clothing includes – safety boots, overalls, gloves mask and hat (*Dieckmann & Muduva, 2010*). m. Safer and cleaner production processes, even if initially more costly, are certainly worthwhile in the long run, including from the financial point of view. In this respect, there is much room for international collaboration: sharing technological knowledge and practical experiences, both positive and negative, can appreciably contribute to "safer and healthier" development everywhere (*World Health Organisation, 1999*). n. Occupational health assessments, prior to the design and installation of any new facility for industry, energy production and agriculture activity should be conducted; o. Careful study of all feasible alternatives, for the selection of the most suitable, safest and healthiest, as well as the least polluting technology, keeping in mind that an initially less expensive alternative may turn out to be more costly in the long run; adequate location, in relation to geography, topography and meteorological conditions (e.g. dominant winds); p. Correct design, accounting for all the possible health and safety hazards, with adequate lay-out and incorporation of appropriate control technology as an integral part of the project, including provision for safe handling and disposal of the resulting effluents and waste; and q. Elaboration of guidelines and training on the operation and maintenance of workplaces and equipment, including adequate work practices, never overlooking preparedness for emergency situations (*World Health Organisation, 1999*). r. Provision (e.g., facilities, personnel and operational costs) should be made for maintenance of

	equipment, of the facilities and of the preventive measures (e.g. ventilation systems), hazard communication schemes, education and training programmes for workers, as well as routine environmental and health surveillance (*World Health Organisation, 1999*). s. Inspection of all equipment in the plant, by trained personnel and on a regular basis; t. Recording of equipment performance in logs that are regularly reviewed to detect any deterioration in performance; u. Regular and routine service and adjustment of equipment; and v. Repair of leaks or breakdowns as soon as possible, preferably before the leaks become disastrous (*World Health Organisation, 1999*)

5.2.14. Visual Impacts	
Responsible Person	**Measures**
The Proponent, Developer, Constructor and Builders	a. The height of the supporting buildings of the charcoal plant must be in line with the design proposal to ensure that the infrastructure is aesthetically pleasing. Waste and stockpile dumps must not be visible from the road or neighbours. b. The developer should ensure that new structures on site blend in with the surrounding landscape. c. The design and architectural concepts proposed in the planning phase must be adhered to and implemented to ensure that the charcoal plant is in harmony with the surrounding natural environment.

5.2.15. Historical, archaeological and cultural heritage	
Responsible Person	**Measures**
The Contractor, Developer and Builders	a. No archaeological or cultural heritage sites had been identified or observed during the environmental assessment. However the developer and his sub contractors must carefully examine on the area before any construction is undertaken. b. If any archaeological or cultural heritage sites are found on the site, the manager must immediately advise the National Monuments Council to ensure that steps are taken for the preservation of the site or artefacts.

5.2.16. Accommodation and Sanitation	
Responsible Person	**Measures**
The Constructors, Developers and Builders	a. There must be no camp or office site located closer than 50 meters from any spring, river, dam or pan. b. If space is required for a camp or office site, it must be kept to a minimum. c. Workers may make use of the existing toilet facilities on the site.

5.2.17. Rehabilitation of site after completion of construction phase	
Responsible Person	**Measures**
The Builders, Workforce,	a. Before any final rehabilitation is started on the site, the Ministry of Environment and Tourism must be advised to set certain terms and conditions.

Constructors, Developers and Residents	b. Qualified or accredited personnel from the constructing or developing companies must refill pits alternately with waste and not saleable stockpiled blocks and smaller fragments of larger blocks. c. Refilled rock waste must be covered with saved topsoil and complemented if necessary by scraping the area adjoining the pit on the condition that no vegetation is cleared for this operation. d. All rehabilitated areas must be monitored over a 4 year time period from the onset of the rehabilitation procedures. (The frequency of monitoring suggested is dependent on satisfactory performance. If however the requirements are not being met, the frequency of the monitoring must be increased). e. Unwanted materials and all waste namely domestic or industrial must be collected. Remaining domestic waste on site must be collected and transported to a recognised disposal facility. f. Waste material must be collected in drums and transported to a recognised disposal facility as well. g. All weedy species present on the site must manually be removed. h. Monitoring must be conducted when grasses are flowering. i. Upon the completion of all construction activities, remove workshops, surrounding fencing, generators and any scrap materials in the vicinity of the work area. j. Seal all petrol, diesel, oil and grease containers and remove it from the site to a recognised storage facility. k. Break up all unnecessary concrete slabs and structures on the site and transport the fragments to a suitable site for disposal or dump it in one of the pits.

5.2.18. Health and Sickness/Disease	
Responsible Person	**Measures**
The Builders, Workforce, Constructors, Developers and Residents	a. Any large project has the potential to increase the rate of HIV/AIDS infection, especially during construction as a large workforce from outside the area is brought in for a period, without their families, to work on the project. That impact cannot be realistically assessed, but mitigation measures are recommended, namely instruction to all personnel on HIV/AIDS education, and making condoms readily available at little or no cost. b. It can be expected that HIV/AIDS may have an impact on the project because labourers might be lost to this disease. This results also in a loss of skills, so that training programmes will need to be ongoing. c. The workforce should receive an induction course on awareness and spreading of HIV/AIDS. d. The workers should be informed that prevention is better than cure and condoms should be made available to the workers as mentioned above. e. The Ministry of Health and Social Services can be consulted to inform the workers of the dangers regarding the disease. f. HIV/AIDS's negative impacts/aspects should be discussed and the workers should know the dangers regarding the disease for instance sickness, loss of energy and eventually death.

There must be photographic evidence at different rehabilitated places with a camera providing dates on the prints. These photographs must be taken every year around the same period at the same places.

5.3. THE OPERATIONAL PHASE

Steps to be taken in the daily management and running of the proposed charcoal plant are stated in the following section. To ensure that the charcoal plant is operated on an environmentally sustainable manner the following **general guidelines** are included in the EMP:

a. The charcoal plant must be managed with minimal disturbance to the surrounding natural environment.
b. It must be ensured that guests/clients to the site behave in an appropriate manner that does not impact negatively on the environment, wildlife and local communities.
c. The conservation of the natural and human environment must be regarded as high priority.
d. An “environmental friendly behavior” must be cultivated and maintained amongst all people involved in the operation of the charcoal plant activities.
e. The job description for the manager must include his/her responsibilities and duties towards the implementation and adherence to the EMP.

The following specific environmental management issues which require daily operational attention from management and staff are included in the EMP:

5.3.1. Human Waste Management (Sewage)	
Responsible Person	**Measures**
The Proponent, Developer, Constructor and Builders	a. All the toilets must be flush-type toilets and should be linked to their own French Drain/septic tank. b. Notices must be placed in the toilets indicating that staff members or workers should not flush foreign objects down the toilet to ensure a healthy environment and the sustained functioning of the sewer system.

5.3.2. Storage of Raw Materials	
Responsible Person	**Measures**
The Proponent and Manager	a. Smelly products should be managed in order that it will have a limited impact on the surrounding neighbours. b. The storage areas should be clearly marked and have clear/highly visible instructions on procedures to be followed in the handling and in case of spillages or other emergencies. c. The handling, operations and storage areas of the charcoal plant should be hygienically managed to prevent the breeding of flies and the generation of bad smells.

5.3.3. Management of Waste Water	
Responsible Person	**Measures**
The Proponent and Manager	a. The possibility of leakages at the charcoal plant must be managed by ensuring that the condition of the pipelines and channels are continuously visually monitored by the manager and staff members. b. The staff must monitor and limit water consumption as efficiently as possible. c. Staff members must not have lawns or gardens that need to be watered (small vegetable gardens are permitted on the site). d. All pipes must be well maintained and leaks must be repaired immediately. e. All taps must be turned off after it had been used. f. A water meter must be installed and it must be checked regularly to keep a register of water consumption and to monitor trends. g. Special care should be taken to prevent chemicals from washing/leaching into surface or groundwater systems. h. During operations, it should be ensured that the conditions as stated under the Waste Water Permit obtained during construction are adhered to at all times.

5.3.4. Energy Management	
Responsible Person	**Measures**
The Proponent, Constructor, Builders, Manager and Residents	a. Electricity must be obtained from approved electrical suppliers like NamPower to ensure efficiency of generation and use as well as sustainability of supply. b. Gas must be used as alternative to electricity in kitchens due to its efficiency and low pollution factor.

	c. A generator may only be used as emergency source of electricity as continued operation thereof normally creates additional noise, require the bulk storage of fuel and oil which can have a negative impact on the environment if not managed properly. d. When fires are used on the site, the workforce must make use of alien-invasive wood that is readily available for example wood that comes from bush encroaching species for example *Acacia melifera*. The workers must avoid using Mopani, Leadwood or other species that might be harvested unsustainably. e. The workers may not buy wood from the local people since that might lead to increased deforestation by cutting down protected species or the natural forests.

5.3.5. Nature Conservation	
Responsible Person	**Measures**
The Proponent, Manager and Residents	To sustain the natural attributes on the site, it needs to be preserved and protected to the best of their abilities. The manager of the development activities has a key responsibility in protecting the environmental aspects on the site and the following measures should be taken: a. There must be adequate waste management control. b. There must be adequate water management control. c. The workforce/manager/proponent must refrain from planting alien plants. d. A general environmental awareness must be established amongst staff members/workers and visitors.

5.3.6. Maintaining Sense of Place	
Responsible Person	**Measures**
The Proponent, Manager and Residents	Sense of place is seen as the style of the area, the atmosphere present when entering the site and the general "vibe" of the place. The "sense of place" normally differentiates one area from the other and therefore management must avoid the following: a. They may not make use of any inappropriate décor for example bright or clashing colors, unattractive murals or art, unnecessary statues, etc. b. No shabbiness may be experienced on the site; management must make sure that they abstain from untidiness, un-emptied ashtrays, rubbish bins etc. c. The manager must repair and maintain all infrastructure since un-repaired infrastructure creates a poor impression. d. Waste must be properly managed on the site; visitors and residents may not smell rubbish bins. The manager must keep drains clean in order to avoid unpleasant smells. e. The site may not have many signs or objects that distract tourists driving past the site from the natural beauty of the area. f. No scrap metal for example old vehicles or equipment may lie around in various states of disrepair, the site must be clean and neat. g. The manager may not allow overcrowding at the site since this will destroy sense of place in a way that it will takes away the feeling of exclusivity. h. There may be no people loitering around at the site, whether visiting staff or looking for work.

5.3.7. Community Relations	
Responsible Person	**Measures**
The Proponent, Manager and Residents	a. The manager must have sound relations with communities in the vicinity. b. They may not damage any cultural or archaeological sites. c. They must employ as many local people as possible for all levels of operation. d. They must make use of dispute resolution methods and labour practices that are within the law and cultural norms. e. All staff must be trained in order that they have the knowledge to do their work properly. f. The manager must provide opportunities for career advancement and skills development.

5.3.8. Occupational Health & Safety Issues & Hospital Services	
Responsible Person	**Measures**
The Proponent, Manager and Workforce	a. Potential accidents may require the use of emergency services and hospital facilities nearby. b. Personnel on site should be trained in handling emergencies such as response to fire, accidents etc. c. There should be careful planning of emergency procedures. d. Training in first aid and emergency response to employees on site should be done. e. The Labour Act (No. 6 of 1992) makes certain provisions with regard to occupational health and safety, e.g. in relation to hazardous substances. f. In particular it is expected that workers will need to be protected against dust and noise in the work place.

5.3.9. Danger from the Surrounding Environment	
Responsible Person	**Measures**
The Proponent, Manager and Workforce	a. Weather-related or other environmental sources of danger may also arise, for example from flooding, earthquakes, storms, ice and/or snow, power outage, heavy rainfall or frost. Site-related sources of danger such as the effect of neighbouring businesses or the traffic situation must also be taken into account.

5.3.10. Dust	
Responsible Person	**Measures**
The Proponent, Manager and Workforce	a. The impact of dust on the air quality in general and on the fauna and flora must be limited. b. The general speed limit on the construction site must be kept below 40km/h to limit dust generated by construction traffic. c. There must be daily visual monitoring of transport activities and dust generation in the area. d. Good general ventilation, maintenance, housekeeping, and training. Protective clothing required, and possibly respiratory protective equipment (RPE) to deal with cleaning and maintenance. e. Local exhaust ventilation; restricted access; good housekeeping; protective clothing, and eye and skin protection depending on substance, and possibly RPE to deal with cleaning and maintenance; specific training on hazards and control. f. Containment; controlled access to labelled areas; 'permit to work' for maintenance, with written maintenance procedures; protective clothing, eye and skin protection depending on substance, and suitable RPE to deal with cleaning and maintenance; specific training on running of plant, maintenance, control, and emergencies (*World Health Organisation, 1999*).

	g. The commonest forms of process modification are the use of damp materials and wet methods, such as wetting down dusty products, wet drilling, water spraying at points of dust generation, wet cleaning of floors and work surfaces, and the use of stabilizers for stock or waste piles. One of the ways in which wet methods reduce dust is that larger lumps are coated with a thin film of liquid, which encloses small dust particles that might otherwise become airborne. Wet methods are therefore more efficient when the water is introduced at the point of dust generation so that the particles become wetted before having a chance to disperse into the ambient air (*World Health Organisation, 1999*). h. Air in the breathing zone of the workers should be monitored and, if needed, ventilation and/or personal protection should be used as complementary measures. There is a danger that the presence of water sprays may give the workers an unjustified belief that there is no dust exposure. Whenever wet methods are used, the evaporation of the dust-laden water may constitute a secondary dust source; this must be avoided or controlled. Another problem to be considered is the increase of heat stress caused by the increased humidity; particularly in hot places and under extreme situations, this may exclude the use of wet methods (*World Health Organisation, 1999*). i. Piped water can be used with portable tools. A water system could reduce respirable dust by more than 90%. Wet methods do not necessarily use water. Oils or water have been added to solids to reduce dustiness in many situations (*World Health Organisation, 1999*). j. The use of water as a wetting agent in connection with the bulk outdoor storage of certain dusty materials; wet processing of minerals; the use of slurries and wetted materials in the ceramics industry; and wet milling rather than dry milling. It is important that the wetting liquid does not interfere with the subsequent processing of the material (*World Health Organisation, 1999*). k. Water sprays are often used in operations such as grinding, transport and transfer of dusty materials; over rocks and ores; or as a “curtain” to confine dust to certain areas and prevent it from dispersing over large portions of the work environment. There are two actions involved. First, such sprays add moisture to the working material, and so reduce the propensity of the dust to become airborne. Second, such sprays produce airborne droplets, which act as collectors for the airborne dust particles

	(*World Health Organisation, 1999*). l. The following protective clothing and equipment should be used on site: Producing, processing and packaging charcoal exposes workers to risks such as snakebite, heat exhaustion, inhalation of sawdust and smoke, and possible cuts from equipment. Protective clothing can prevent many such injuries as well as the diseases linked to working in the charcoal industry. Generally, a set of protective clothing includes – safety boots, overalls, gloves mask and hat (*Dieckmann & Muduva, 2010*). m. Safer and cleaner production processes, even if initially more costly, are certainly worthwhile in the long run, including from the financial point of view. In this respect, there is much room for international collaboration: sharing technological knowledge and practical experiences, both positive and negative, can appreciably contribute to "safer and healthier" development everywhere (*World Health Organisation, 1999*). n. Occupational health assessments, prior to the design and installation of any new facility for industry, energy production and agriculture activity should be conducted; o. Careful study of all feasible alternatives, for the selection of the most suitable, safest and healthiest, as well as the least polluting technology, keeping in mind that an initially less expensive alternative may turn out to be more costly in the long run; adequate location, in relation to geography, topography and meteorological conditions (e.g. dominant winds); p. Correct design, accounting for all the possible health and safety hazards, with adequate lay-out and incorporation of appropriate control technology as an integral part of the project, including provision for safe handling and disposal of the resulting effluents and waste; and q. Elaboration of guidelines and training on the operation and maintenance of workplaces and equipment, including adequate work practices, never overlooking preparedness for emergency situations (*World Health Organisation, 1999*). r. Provision (e.g., facilities, personnel and operational costs) should be made for maintenance of equipment, of the facilities and of the preventive measures (e.g. ventilation systems), hazard

	communication schemes, education and training programmes for workers, as well as routine environmental and health surveillance (*World Health Organisation, 1999*). s. Inspection of all equipment in the plant, by trained personnel and on a regular basis; t. Recording of equipment performance in logs that are regularly reviewed to detect any deterioration in performance; u. Regular and routine service and adjustment of equipment; and v. Repair of leaks or breakdowns as soon as possible, preferably before the leaks become disastrous (*World Health Organisation, 1999*)

5.4. DECOMMISSIONING/CLOSURE PHASE

The decommissioning phase normally follows the operational phase. This is a site-specific plan developed to ensure that appropriate environmental management practices are followed during the decommissioning phase of this project and to detail remediation, site control, and monitoring activities that will continue once the project/infrastructure is no longer required/needed.

The decommissioning phase:

- Provide effective, site-specific, and implementable procedures and mitigation measures to monitor and control environmental impacts throughout this phase of the project, such that the related activities do not adversely impact amenity, traffic, or the environment in the surrounding area.
- Establish long-term management of the project site for its next intended use, detailing plan for site assessment, remediation of contamination, and ecological restoration activities.
- Eliminate the long-term liability issues related to the site for the proponent or owner of the facility or project site.

The decommissioning/closure of the charcoal plant is not anticipated. However, should this be required for any reason, the following conditions are generally required.

5.4.1. Equipment	
Responsible Person	**Measures**
The Proponent, Manager and the Environmental Control Officer	a. An investigation on the soil and groundwater contamination must be conducted to determine the presence, nature and extent of any contamination. This will provide information as to the current status of the site in terms of the level of contamination, which will influence the level or type of remediation that needs to be undertaken. b. Prior to the infrastructure being destroyed, all residue products must be carefully removed for recycling or safe disposal. c. Solid materials must be used for filling. Only clean soil should be used for filling purposes.

5.4.2. Stormwater and Wastewater Management	
Responsible Person	**Measures**
The Proponent, Manager and the Environmental Control Officer	a. Water used for flushing the pipes and tanks must be disposed off safely if it is not suitable for disposal via the sewer system. The relevant department must be contacted with regard to the discharge of water containing waste to the sewer system. b. The water containing waste must pass through a separator before discharge could be allowed. c. Any water containing waste should not contaminate clean storm water.

5.4.3. Waste Management	
Responsible Person	**Measures**
The Proponent, Manager and the Environmental Control Officer	a. Solid waste generated from the removal of tanks must be handled according to the precautionary principle meaning that waste (including soils, metals and other material) should be treated as hazardous unless proven otherwise. b. Contaminated soil and other waste material must be disposed of at an authorized/permitted landfill site. c. Waste must not be allowed to be stockpiled on the site for extensive periods but must be disposed off as generated/soon as possible. d. If waste material is stockpiled temporarily on site, it must be adequately protected from the environment to prevent leaching of potentially harmful contaminants.

5.4.4. Spillage	
Responsible Person	**Measures**
The Proponent, Manager and the Environmental Control Officer	a. Spillages during the decommissioning must be reported to the relevant authorities.

5.4.5. Remediation	
Responsible Person	**Measures**
The Proponent, Manager and the Environmental Control Officer	a. Clean-up or remediation of any contamination must be done. b. The owner of the land, the person in control of land or the person who occupies or uses the land on which pollution has occurred is not absolved from the responsibility of any further and/or associated pollution arising from this property. c. Should there be a risk to downstream users or the environment from this site in the future, it would be requested that further remedial measures be instituted at this site.

5.4.6. Site Rehabilitation	
Responsible Person	**Measures**
The Proponent, Manager, Contractor and the Environmental Control Officer	a. It should be ensured that all structures, equipment, materials, waste, rubble, notice boards and temporary fences used during the construction and operation and decommissioning be removed with minimum damage to the surrounding and receiving area or environment. b. The site should be cleaned and cleared to the satisfaction of the ECO. c. In the case of accidental spills of oil or chemicals in the construction camp, the affected soil should be dug out and removed from the site for disposal at a hazardous waste site and replaced with fresh topsoil.

5.4.7. Health and Safety of the Workers	
Responsible Person	**Measures**
The Contractor, Builders, Workforce, Constructors and Developers	a. The safety and security of labourers in the decommissioning phase of the project are required and of high importance. b. The Contractor shall comply with all standard and legally required health and safety regulations as promulgated under the Occupational Health and Safety Act and Labour Act and associated regulations. c. The Contractor must provide and maintain personal protective equipment and facilities to employees working with hazardous chemical substances. d. The Contractor shall provide a standard first aid kit at the site and/or at additional identified locations where needed. e. Disturbed soils, slopes and areas of open excavation must be minimised to avoid wind erosion. f. A health and safety officer should again be employed to manage, coordinate and monitor risk and hazard and report all health and safety related issues in the work place. g. Conversely, it is anticipated that the process should not affect the overall health of persons related to the project including the neighbours.

6. ENVIRONMENTAL STATEMENT/AGREEMENT

After all assessing was done and information available was reviewed, the conclusion was reached that the site of land allocated for the construction and operation of a charcoal processing and packaging plant on Portion 24, Usakos, Erongo Region will have a low significance impact rating. The charcoal plant will also not have a large negative impact on the environment and it is therefore recommended to proceed with the process. The activities associated with the charcoal plant will exert a general low impact on the environment and are easily manageable as long as the impact on the environment is mitigated through the implementing of the Environmental Management Plan (EMP) as proposed in this document. Management actions prescribed and recommended in this EMP are especially designed to minimize or manage the impacts exerted by the activities and operations and the staff members working/residing on the site.

It should however be noticed that the management activities should further be strengthened with continuous and well orchestrated monitoring of the implementation of the given EMP. The manager of the charcoal plant needs to understand the severity of the situation and all efforts should be made to ensure that the message is conveyed to the workforce and visitors.

It should further be noted the proposed EMP will have little or no value in managing the impacts of the activities on the environment if it is not implemented by the proponent and not monitored by the responsible authorities. **It is thus suggested that the level of implementation of the EMP is audited at regular intervals by the Environmental Control Officer of the MET in order to ensure that remedial actions are taken on time and on a continues basis.**

The Ministry of Environment and Tourism is herewith requested to accept and approve the EMP for the construction and operation of a charcoal processing and packaging plant on Portion 24, Usakos, Erongo Region and to issue the site with an Environmental Clearance Certificate for the proposed operations.