OPERATIONAL ENVIRONMENTAL MANAGEMENT PLAN (OEMP)

KAVANGO GARAGE TOTAL SERVICE STATION (KAVANGO-EAST REGION)

NOVEMBER 2024

PROJECT INFORMATION

EMP	**DRAFT**
PROJECT TITLE	APPLICATION FOR AN ENVIRONMENTAL CLEARANCE CERTIFICATE RENEWAL FOR THE EXISTING KAVANGO GARAGE TOTAL SERVICE STATION
DEVELOPMENT LOCATION	ERVEN 1230 & 1231, EXTENSION 3, MARKUS SIWARONGO STREET, RUNDU – KAVANGO-EAST REGION (NAMIBIA)
PROJECT NUMBER	APP - 240925004731
COMPETENT AUTHORITY	Ministry of Mines and Energy
APPROVING AUTHORITY	Ministry of Environment, Forestry and Tourism
PROPONENT	MR A.G. FELISBERTO
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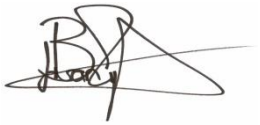
EAP SIGNATURE	

URBAN Green Sustainability Consultants

Town and Regional Planning Consultants

Environmental Management Consultants

Water and Wastewater Treatment Consultants

EMP REVISION STATUS

Version	Date Approved	Revision Details
V1 – Original EMP	November 2013	
V2	November 2024	
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APPENDIXES

PART 1: BACKGROUND INFORMATION

THE PROJECT

Kavango Garage Total Service Station (the lessee) on agreement with Mr Adalberto G. Felisberto (the Proponent) intents to apply for the renewal of an Environmental Clearance Certificate from the Directorate of Environmental Affairs (DEA), for their existing Kavango Garage Service Station, (herein referred to as Kavango Garage Total Service Station).

The initial original environmental clearance certificate (ECC) was issued during 2012/2013, prior to construction of the Kavango Garage Total Service Station. However, the ECC cannot be located. To this effect an Environmental Scoping Assessment (ESA) was undertaken in accordance with the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (GN. No. 30 of 6 February 2012). The development was officially opened by the then Ministry of Mines and Energy, Hon. Isak Katali on 10 July 2014.

NEED AND DESIRABILITY OF THE ACTIVITY

Namibia`s Vision 2030 and National Development Plan 5 (NDP5) both recognise a need for and place significant value on economic growth and employment creation. The Kavango Total Service Station contributes to these priorities at a local and regional level.

Photo 1-1 – View of the Kavango Garage Total Service Station within the Rundu Town Area.

1 DESCRIPTION OF ACTIVITY

The fuel station consists of the following:

- Fuel retail building with ancillary services;
- Four underground fuel storage tanks (46 m3) of 2x unleaded petrol and 2x diesel connected to five ventilation pipes and associated reticulation pipelines;
- Fuel dispensing islands inclusive of pump island servicing equipment;
- A water/oil separator is suitably located for ease of connections;
- High density Polyethylene (HDPE) fuel delivery pipeline system and tanks fitted with submersible pumps and ancillary equipment (automatic tank gaging etc.);
- Dispensing islands fitted with fuel dispensers for pressure system and Septic tank or connections to municipal services;
- A dining area for staff members; and
- Ablution facilities.

2 ENVIRONMENTAL ASSESSMENT

The Environmental Assessment (EA) process is conducted according to the provisions laid out in the Environmental Management Act (No. 7 of 2007) and its Environmental Impact Assessment Regulations (2012).

The main objectives of the EA are as follows:

- Comply with Namibia`s Environmental Management Act (2007) and its regulations (2012);
- To identify potential impacts associated with the proposed development area;
- To inform Interested and Affected Parties (I&APs) and relevant authorities about the proposed development and to provide them with a reasonable opportunity to participate during this EA process;
- To assess the significance of issues and concerns raised;
- To compile a scoping report addressing all identified issues and potential impacts related to various aspects of the proposed development; and

- To compile Environmental Management Plan (EMP) which include impact mitigation and monitoring measures.

2.1 Locality

The Project location (Lat: -17.913999° Long: 19.769801°) is located at Erven 1230 & 1231, Extension 3, Markus Siwarongo Street, within the Rundu Townlands, Kavango-East Region. Refer to Appendix A for the locality map.

Figure 1: Project location -17.913999° Long: 19.769801°

Installation Information

The site is equipped with the following:

Four underground fuel storage tanks (46m3) of 2x unleaded petrol and 2x diesel, which is permanently cordoned off from public access,

Five ventilation pipe connections and associated reticulation pipelines,

Fuel dispensing islands inclusive of pump island servicing equipment,

Fuel dispensing island canopy,

Water/oil separator suitably located for ease of connections,

High density Polyethylene (HDPE) fuel delivery pipeline system,

Tanks fitted with submersible pumps and ancillary equipment (automatic tank gaging etc.),

Islands fitted with fuel dispensers for pressure system,

Septic tank and connections to municipal services,

A dining area for staff members, and

Ablution facilities.

Land Use and Development

The fuel installation occupies an approximate surface area of ± 747m² in extent, on an area zoned as "Business" under the Rundu Zoning Scheme.

Listed Activities

The following activities require an Environmental Clearance Certificate (ECC) under the Environmental Management Act (No. 7 of 2007).

- **Activity 9 - Hazardous Substance Treatment, Handling and Storage Activities**

  Activity 9.4 – The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location

  Activity 9.5 – Construction of filling stations or any other facility for the underground and aboveground storage of dangerous goods, including petrol, diesel, liquid, petroleum, gas or paraffin

- **Activity 10 - Infrastructure**

  Activity 10.1 (a) - Construction of oil, water, gas and petrochemical and other bulk supply
  Pipelines.

Potential Impacts

The following potential impacts have been identified so far:

Positive:

- Fuel convenience (meeting the local needs within the area and region) to local residents and businesses;
- Social and economic benefits for the local and regional community;

- Creation of temporary and permanent employment during construction and operational phase of the fuel station.

Negative:

- Health and safety risks associated with the handling and storage of flammable goods;
- Potential soil and groundwater pollution from hydrocarbon spills; and
- Potential surface water pollution due to possible run-off.

3. LEGISLATIVE FRAMEWORK

The Namibian Constitution

The Namibian Constitution has a section on principles of state policy. These principles cannot be enforced by the courts in the same way as other sections of the Constitution. But they intend to guide the Government in making laws which can be enforced.

The Constitution stipulates that the state shall actively promote and maintain the welfare of the people by adopting policies aimed at management of ecosystems, essential ecological processes and biological diversity of Namibia for the benefit of Namibians, both present and future.

Environmental Management Act No.7 of 2007

This Act provides a list of projects requiring an Environmental assessment. It aims to promote the sustainable management of the environment and the use of natural resources and to provide for a process of assessment and control of activities which may have significant effects on the environment; and to provide for incidental matters.

The Act defines the term “environment” as an interconnected system of natural and human-made elements such as land, water and air; all living organisms and matter arising from nature, cultural, historical, artistic, economic and social heritage and values.

The Environmental Management Act has three main purposes:

a) to ensure that people consider the impact of activities on the environment carefully and in good time

b) to ensure that all interested or affected people are given a chance to participate in environmental assessments

c) to ensure that the findings of environmental assessments are considered before any decisions are made about activities which might affect the environment

The Water Act (Act No 54 of 1956), as amended

The Water Act No. 54 of 1956 as amended, aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users.

The Act broadly controls the use and conservation of water for domestic, agricultural, urban and industrial purposes; to control in certain respects, the use of sea water; to monitor certain activities on or in water in certain areas; and to control activities which may alter the natural occurrence of certain types of atmospheric precipitation.

Water Resources Management Act of Namibia (2004) (Guideline)

This act repealed the existing South African Water Act No.54 of 1956 which was used by Namibia. This Act ensures that Namibia's water resources are managed, developed, protected, conserved and used in ways which are consistent with fundamental principles depicted in section 3 of this Act. Part IX regulates the control and protection of groundwater resources. Part XI, titled Water Pollution Control, regulates discharge of effluent by permit.

Line Ministry: Ministry of Agriculture, Water Affairs and Forestry

V. Environmental Assessment Policy of Namibia (1995)

Environmental Assessments (EA's) seek to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT (in the context of IEM and EA's) is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.

All listed policies, programmes and projects, whether initiated by the government or private sector, should be subjected to the established EA procedures.

Apart from the requirements of the Environmental Assessment Policy, the following sustainability principles needs to be taken into consideration, particularly to achieve proper waste management and pollution control:

- Cradle to Grave Responsibility

This principle provides that those who manufacture potentially harmful products should be liable for their safe production, use and disposal and that those who initiate potentially polluting activities should be liable for their commissioning, operation and decommissioning.

- Precautionary Principle

There are numerous versions of the precautionary principle. At its simplest it provides that if there is any doubt about the effects of a potentially polluting activity, a cautious approach should be adopted.

- The Polluter Pays Principle

A person who generates waste or causes pollution should, in theory, pay the full costs of its treatment or of the harm, which it causes to the environment.

- Public Participation and Access to Information

In the context of environmental management, citizens should have access to information and the right to participate in decisions making.

Line Ministry: Ministry of Environment and Tourism

VI. Petroleum Products and Energy Act of Namibia (Act No. 13 of 1990)

The Act makes provision for impact assessment for new proposed fuel retail facilities and petroleum products known to have detrimental effects on the environment.

VII. Draft Pollution Control and Waste Management Bill (Guideline only)

The operations of the existing Kavango Total Garage Service Station only applies to Parts 2, 7 and 8 of the Bill.

Part 2 stipulates that no person shall discharge or cause to be discharged any pollutant to the air from a process except under and in accordance with the provisions of an air pollution licence issued under section 23. It further provides for procedures to be followed in licence application, fees to be paid and required terms of conditions for air pollution licences.

Part 7 states that any person who sells, stores, transports or uses any hazardous substances or products containing hazardous substances shall notify the competent authority, in accordance with sub-section (2), of the presence and quantity of those substances.

Part 8 calls for emergency preparedness by the person handling hazardous substances, through emergency response plans.

VIII. Atmospheric Pollution Prevention Ordinance of Namibia No. 11 of 1976

The Ordinance prohibits anyone from carrying on a scheduled process without a registration certificate in a controlled area. A certificate must be issued if it can be demonstrated that the best practical means are being adopted for preventing or reducing the escape into the atmosphere of noxious or offensive gases produced by the scheduled

process. Best practice would be to notify the line Ministry about emissions but it is not a legal requirement.

Line Ministry: Ministry of Health and Social Services

IX. Hazardous Substances Ordinance No. 14 of 1974

The Ordinance applies to the manufacture, sale, use, disposal and dumping of hazardous substances, as well as their import and export and is administered by the Minister of Health and Social Welfare. Its primary purpose is to prevent hazardous substances from causing injury, ill-health or the death of human beings.

Line Ministry: Ministry of Health and Social Services

4.THE ENVIRONMENTAL MANAGEMENT PLAN

4.1 Purpose of the EMP

The purpose of the EMP is to provide specifications for "good environmental practice" during the relocation process. As such, the EMP provides specifications that the Proponent and his nominated Contractor(s) must adhere to in order to minimise adverse environmental impacts associated with the relocation activities. The Proponent to which authorisation was granted, is ultimately responsible for overall environmental performance.

4.2 Scope of the EMP

This EMP intends to guide and manage the activities for the relocation of a grave only, as they relate to the natural and social environment.

5. EMERGENCY PREPAREDNESS

The ESM shall compile and maintain environmental emergency procedures to ensure that there will be an appropriate response to unexpected or accidental actions or incidents that will cause environmental impacts, throughout the operational period. Such activities may include, inter alia:

- Accidental discharges to water and land.
- Accidental exposure of employees to hazardous substances.
- Accidental fires.
- Accidental spillage of hazardous substances.
- Accidental toxic emissions into the air.
- Specific environmental and ecosystem effects from accidental releases or incidents.

These plans shall include:

- Emergency organization (manpower) and responsibilities, accountability and liability.
- A list of key personnel and contact details.
- Details of emergency services available (e.g. the fire department, spill clean-up services, etc.).
- Actions to be taken in the event of different types of emergencies.
- Incident recording, progress reporting and remediation measures required to be implemented.
- Information on hazardous materials, including the potential impact associated with each, and measures to be taken in the event of accidental release.

5.1 Fire Control

No fires may be lit on site. Any fires that occur shall immediately be reported to the ESM.

Smoking shall not be permitted in those areas where it is a fire hazard. Such areas shall include the workshop and fuel storage areas and any areas where the vegetation or other material is such as to make liable the rapid spread of an initial flame. Cigarette butts must be disposed of in designated containers.

In terms of the Atmospheric Pollution Prevention Act (No. 45 of 1965), burning is not permitted as a disposal method.

The ESM shall appoint a competent fire safety officer who shall be responsible for ensuring immediate and appropriate actions in the event of a fire and shall ensure that employees are aware of the procedure to be followed. The ESM shall ensure that there is basic fire-fighting equipment (e.g. fire buckets, extinguishers, fire beaters, etc.) available on Site at all times. This shall include at least rubber beaters when working in urban open spaces and one fire extinguisher of the appropriate type when welding or other “hot” activities are undertaken.

5.2 Emergency Procedures

The ESM’s procedures for the following emergencies shall include:

(i) Fire

- The ESM shall inform all relevant parties of a fire as soon as one starts and shall not wait until it can no longer be controlled.
- The ESM shall ensure that his employees are aware of the procedure to be followed in the event of a fire.

(ii) Accidental Leaks and Spillages

- The Manager shall ensure that his employees are aware of the procedure to be followed for dealing with spills and leaks, which shall include notifying the ESM and Resident Engineer.

- The business Manager shall ensure that the necessary materials (e.g. chemcap, spill-sorb, drizzat pads, enretech and sand buckets) and equipment for dealing with spills and leaks are available on Site at all times.
- The source of the spillage shall be isolated. The Manager shall contain the spillage using sand berms, sandbags, pre-made booms, saw dust or absorbent materials. Treatment and remediation of the spill areas shall be undertaken to the reasonable satisfaction of the ESM and Resident Engineer.

5.3 Hazardous Substances

Petroleum, chemicals, harmful and hazardous waste shall be stored in an enclosed and bunded area. This area shall be subject to the approval of the Engineer. The waste shall be disposed of at a hazardous waste disposal site as approved by the ESM.

6. CONSTRUCTION PLANT

6.1 Fuel and Oil

If so required, fuel may be stored on Site in a depot complying with the requirements listed below. Where reasonably practical, construction vehicles and equipment shall be refuelled at the depot or at the workshop as applicable. The surface under the refuelling area shall be protected (bunded) against pollution to the satisfaction of the Resident Engineer and ESM prior to any refuelling activities.

The Manager shall ensure that there is always a supply of absorbent material (e.g. chemcap, spill-sorb, drizzat pads, enretech and peat moss) readily available to neutralize and where possible be designed to encapsulate minor spillage. The quantity of such materials shall be able to handle a minimum of 200 ℓ of liquid spill.

(iii) Fuel storage areas

- The ESM and Resident Engineer shall be advised of the area that the Contractor intends using for the storage of fuel. Fuels shall be stored at a suitable location inside the Contractor's Camp.
- The fuel storage area must not be located near (i.e. less than 100m) any water resource, including a river, stream or surface water body, or borehole.
- The Contractor shall ensure that all liquid fuels (petrol and diesel) are stored in tanks with lids, which are kept firmly shut.
- The tanks shall be situated on a smooth impermeable surface (250 µm plastic or concrete) base with an earth bund (plastic must have a 5cm layer of sand on top to prevent perishing). The impermeable lining shall extend to the crest of the bund and the volume inside the bund shall be 110% x the total capacity of all the storage tanks.
- The floor shall be bunded and sloped towards a sump to contain any spillages of substances. The bund shall be inspected and emptied daily, and serviced when

necessary. The bund shall be closely monitored during rain events to ensure that it does not overflow.

- The Manager shall keep fuel under lock and key at all times. No smoking shall be allowed in the vicinity of fuel tanks.
- The ESM shall educate workers on the appropriate methods for workshop maintenance and fuel points to prevent fuel and oil being washed out of containment areas.
- Only empty and externally clean tanks may be stored on the bare ground. All empty and externally dirty tanks shall be sealed and stored on an area where the ground has been protected. In addition, if fuel is dispensed from 200 ℓ drums, the proper dispensing equipment shall be used, and the drum shall not be tipped in order to dispense fuel. The dispensing mechanism of the fuel storage tank shall be stored in a waterproof container when not in use.
- Symbolic safety signs depicting “No Smoking”, “No Naked Lights” and “Danger” are to be provided, and are to conform to the requirement of SABS 1186.
- The product contained within the tank shall be clearly identified; using the emergency information system detailed in SABS 0232 part 1.
- Any electrical or petrol-driven pump shall be equipped and positioned, so as not to cause any danger of ignition of the product.
- Areas for storage of fuels and other flammable materials shall comply with standard fire safety regulations and may require the approval of the fire safety officer.
- The Contractor shall ensure that there is adequate fire-fighting equipment at the fuel stores and that staff are adequately trained to use this equipment.

(iv) Fuel storage tanks

- Temporary above ground storage tanks may be permitted at the discretion of the ESM and Resident Engineer based on the merit of the situation, provided that the following requirements are met:
- All such tanks are to be designed and constructed in accordance with a recognized Act and code (Petroleum Product and Energy Act, No. 13 of 1990, as amended).
- The rated capacity of such a tank shall provide sufficient capacity to permit expansion of the product contained therein by the rise in temperature during storage.
- The tank shall be erected at least 3.5 m from buildings, boundaries and any other combustible or flammable materials.
- Adequate precautions shall be provided to prevent spillage during the filling of any tank.
- Soil contaminated by oil, fuel or chemicals shall be removed and disposed of at a registered Hazardous Waste Disposal Site or rehabilitated *in-situ*.
- If larger capacity tanks are required then an acceptable rational design based on a relevant national or international code or standard shall be submitted to the Directorate Energy, Petroleum and Downstream (Ministry of Mines and Energy).

6.2 Ablution Facilities

Washing, whether of the person or of personal effects and acts of excretion and urination are strictly prohibited other than at the designated facilities provided. Provision shall thus be made for ablution and washing facilities.

The exact location of the facilities shall be approved by the ESM and Resident Engineer prior to establishment. All temporary portable toilets shall be secured to the ground to prevent them toppling due to wind or any other cause.

Toilets for the workers shall be at a maximum ratio of 1 toilet per 5 workers (preferred 1:15) and be within walking distance of the staff. These facilities shall be maintained in a hygienic state and serviced regularly. Toilet paper shall be provided. The Manager shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from Site. Discharge of waste from toilets into the environment is prohibited.

6.3 Eating Area

Bins with lids at the eating areas for his staff shall be provided, which shall be emptied on a daily basis. The waste may be temporarily stored in a facility that is weatherproof and scavenger-proof and which has been approved by the Engineer. The feeding or discarding of food for animals is strictly prohibited.

6.4 Solid Waste Management

No burying or dumping of any waste materials, rubble, vegetation or refuse shall occur on Site. A solid waste control and removal system shall be set-up to fit into the larger Project waste management system. The waste may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof, and which the ESM and Resident Engineer has approved. The accumulation of construction waste materials must be avoided as far as possible. The system shall comply with the following detailed requirements:

6.4.1 Dumping

6.4.2 Receipts for hazardous waste disposal shall be copied to the ESM and Engineer.

6.4.3 Refuse shall be disposed of into scavenger- (baboons, dogs, rodents, etc.) and weather-proof bins. The Contractor shall then remove the refuse collected from the working areas, from Site at least once a week or depending on necessity.

6.4.4 Refuse must be disposed of at an authorized municipal landfill site.

6.4.5 The Manager shall make provision for workers to clean up the working areas at least once a week.

6.4.6 Recycling

6.4.7 Wherever possible, materials used or generated by construction shall be recycled.

6.4.8 Containers for glass, paper, metals and plastics shall be provided (a four bin recycling system). Office and camp areas are particularly suited to this form of recycling process.

6.4.9 Where possible and practical, such as at stores and offices, waste shall be sorted for recycling purposes.

6.5 Waste Water Management

The Resident Engineer shall set up a contaminated water management system, which shall include collection facilities to be used to prevent pollution, as well as suitable methods of disposal of contaminated water to fit into the larger waste water management system. The Contractor shall prevent the discharge of water contaminated with any pollutants, such as soaps, detergent, cements, concrete, lime, chemicals, glues, solvents, paints and fuels, into the environment. The Contractor shall notify the ESM and Resident Engineer immediately of any pollution incidents on Site.

Water from kitchens, showers, sinks, etc. shall be discharged into a conservancy tank for removal from Site. Runoff from fuel depots/workshops/truck washing areas and concrete swills shall be directed into a conservancy tank and disposed of at an approved municipal hazardous waste site.

Wash areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas are not polluted. This includes, but is not limited to, concrete batching areas, vehicle washing, workshop wash bays, paint wash and cleaning. Wash areas for domestic use shall ensure that the disposal of contaminated water is sanctioned by the ESM.

6.7 Workshop, Equipment Maintenance and Storage

Where practical, all maintenance of plant and equipment on Site shall be performed in the workshop. If it is necessary to do maintenance outside of the workshop area, the Contractor shall obtain the approval of the ESM prior to commencing activities.

All equipment shall be kept in good working order and serviced regularly. Equipment shall be removed immediately from the Site and repaired. When the Contractor carries out emergency plant maintenance it is essential that there is no pollution to the environment. This will be overseen by the ESM and Resident Engineer.

The workshop shall have a smooth impermeable (concrete or 250 µm plastic covered with sand) floor, which is bunded and sloped towards an oil trap to contain any spillages. When servicing equipment, drip trays shall be used to collect the waste oil and other lubricants. The floor shall be bunded and sloped towards an oil trap or sump to contain any spillages of substances (e.g. oil). Drip trays shall also be provided in areas for stationary plant (such as compressors) and for "parked" plant (such as scrapers, loaders, vehicles). Drip trays shall be inspected and emptied daily. Drip trays shall be closely monitored during rain events to ensure that they do not overflow. Where practical, the Contractor shall ensure that equipment is covered so that rainwater is excluded from the drip trays.

All washing shall be restricted to a minimum. If essential, washing must be undertaken in the workshop or maintenance areas. The use of detergents for washing shall be restricted to low phosphate and nitrate containing and biodegradable-type detergents. Runoff should be collected, contained and disposed of at an approved municipal hazardous waste site.

5. MITIGATION MEASURES AND PROPOSED MANAGEMENT PROGRAMME

The table below outlines those specific mitigation measures required in order to fulfil the recommendations. These measures must be implemented during the operational phase of the Kavango Total Garage Filling Station. The responsibility for these measures is included in Column 4.

This forms a general code of conduct for all contractors operating on the sight.

While responsibilities have been assigned to various other parties, it must be borne in mind that ultimately the applicant and his/her successor are held responsible for any damage to the environment as a result of the development and that non-compliance with the OEMP will be regarded as non-compliance in terms of the Environmental Authorization.

Issue	Objective	Mitigation Measure	Responsibility	Compliance Notes
		PLANNING & DESIGN		
Operator`s Requirements	Ensure that the Site Operator is aware of his/her responsibility.	Provide the contractor with the OEMP.	ESM	Yes. File with EMP and Scoping Assessment Report (July 2021) & ECC (February 2022) available at Manager's Site Office
Environmental Site Manager	Ensure that activities on site are compliant with the requirements of the OEMP.	Appoint an independent Environmental Site Manager to oversee environmental aspects of the development.	New Limit Property Developers CC	
Visuals & Aesthetics	Ensure that the visual aspects of work area are taken into consideration to lessen impacts on neighbouring activities.	Service Station area should be kept neat and tidy at all times. Advert boards on the premises should not obstruct other road users.	Manager	
Waste Management	Ensure the effective and efficient separation, storage and removal of waste from the site.	Develop a Waste Management Plan for the construction phase which will detail: • Schedules for collection • Responsible parties for collection • Details regarding waste separation (hazardous vs. general) • Provision of facilities for the separation and storage of waste • Details regarding the disposal of the waste (hazardous and general) • Assigns responsibilities for these activities	ESM & Manager	
Loss of habitat/eco-systems	Conserve tall indigenous trees.	Indigenous trees should be preserved to recreate and improve some important habitats.	Contractor	

Issue	Objective	Mitigation Measure	Responsibility	Compliance Notes
Training	Improve the awareness of all construction personnel with regard to environmental matters.	Develop and implement a training programme to address environmental issues and responsibilities.	Environmental Site Manager	
Environmental Site Manager and RE	Ensure that there is compliance with the EMP on site.	An Environmental Site Manager may inspect the site at any time during the construction phase.	Environmental Site Manager	
Effect of the EMP	Ensure that the EMP is enforced on all contractors.	Each contractor and subcontractor must be notified on the content of this EMP.	Resident Engineer & Environmental	

Issue	Objective	Mitigation Measure	Responsibility	Compliance Notes
			Site Manager	
Effect of the EMP	Ensure that the EMP is enforced on all contractors	All contractors and subcontractors must be bound by the content and requirements in this EMP.	Resident Engineer & Environmental Site Manager	
Ground Water	Prevent the contamination of groundwater resources.	Vehicles must be equipped with drip trays to prevent spillages of oils and fuels.	Contractor	
Loss of surrounding habitat and sensitive species	Prevent the destruction of protected, medicinal or sensitive plant species.	Protected, medicinal and/or sensitive plants that are likely to be destroyed or affected by construction activities should be relocated to more suitable areas.	Contractor	
Installation of Services	Ensure that all points for water provision are regularly inspected for erosion impacts.	Implement adequate mitigating measures to curtail any erosion impacts.	Contractor	
Installation of Services	Ensure that water used to wash machinery and any other “grey” water does not pollute the site.	Provide a wash bay with a impermeable floor to contain such water.	Contractor	
Litter	Ensure that the site remains clean and clear of litter.	All litter must be collected into rubbish bins located on the site. These bins must be regularly (i.e. weekly) collected and transported to a registered waste disposal facility.	Contractor	
Road Works and Traffic	Ensure that soil does not erode from culverts or similar structures.	All culverts or similar structures must be stabilized with gabions and/or indigenous grasses.	Contractor	
Road Works and Traffic	Ensure that local residents are not inconvenienced by the movement of construction vehicles off-site.	The movement of heavy vehicles from the site must occur outside of peak traffic hours (after 08h30 and before 16h30).	Contractor	
Road Works and Traffic	Ensure that local residents are not inconvenienced	Spillages on the roads should be avoided. When	Contractor	

Issue	Objective	Mitigation Measure	Responsibility	Compliance Notes
	by the movement of construction vehicles off-site.	these occur, they should be cleaned immediately.		
Safety & Security	Ensure the safety and security of staff and the public.	All local authority by-laws must be adhered to.	Manager	
Safety & Security	Ensure the safety and security of staff and the public.	All contractors must take cognisance of and abide by the Occupational Health and Safety Act.	ESM	
Safety & Security	Ensure the safety and security of staff and the public.	Trenches to a depth greater than 1.5 m must be supported or appropriate warning must be provided.	Contractor	
Storage Facilities	Ensure that hazardous materials are stored according to legislative requirements.	Specifically designed storage facilities need to be provided and used for hazardous materials.	Manager & ESM	
Storage Facilities	Ensure that fuel stored on site does not pose a pollution and fire hazard.	Fuels stored on site shall be bunded to 110% of the capacity of the largest container.	Contractor & ESM	
Storage Facilities	Ensure that fuel stored on site does not pose a pollution hazard.	The fuel storage area must not be located less than 100m from any water resource.	Contractor & ESM	
Storm Water Run-off	Ensure that run-off does not contribute to erosion & siltation.	Construct and maintain berms on the site to contain storm water run-off or establish riffle beds or retention ponds, as appropriate.	Contractor & ESM	
Vehicle repairs	Ensure that spillages are minimized and that where these occur, that they are appropriately managed.	Minor vehicle repairs on an appropriate work surface may only take place within the provided area.	Manager & ESM	
Waste	Ensure the adequate removal of solid waste.	All wastes (hazardous or general) must be collected and disposed of at an appropriate registered facility.	Contractor	

Issue	Objective	Mitigation Measure	Responsibility	Compliance Notes
Waste	Ensure the adequate management of waste	Refuse shall be disposed of into scavenger- free (stray cats, dogs, rodents, etc.) and weather-proof bins. The Contractor shall then remove the refuse collected from the working areas, from Site at least once a week or depending on necessity. Refuse must be disposed of at an authorized landfill acceptable to the DEA.	Contractor	
Waste	Ensure the adequate management of waste.	No waste should be burnt on site.	Contractor & ESM	
POST CONSTRUCTION				

MONITORING				
Audit Reports	Ensure adequate reporting of progress with the development	Regular reports, monthly and construction end are proposed, and should be forwarded to the DEA.	Environmental Site Manager	
Monitoring	Ensure compliance with the requirements of the EMP.	Undertake monitoring activities on a monthly basis.	Environmental Site Manager	

APPENDIX A

ENVIRONMENTAL METHOD STATEMENT

A method statement forms the baseline information on which sensitive area work takes place and is thus considered a “live document” in that modifications can be negotiated between the Contractor and ESM if or as required. The Contractor (and, where relevant, any subcontractors) must also sign the Method Statement, thereby indicating that the works will be carried out according to the approved methodology. Changes in the methodology must be reflected by amendments to the original approved Method Statement. Amendments must be signed by both the ESM and RE, denoting that the change is environmentally acceptable. The Contractor must also sign the amended Method Statement.

All method statements will form part of the OEMP documentation and are subject to all terms and conditions contained within the OEMP main document.

A Method Statement describes the scope of the intended work in a step-by-step description in order for the ESM or Engineer to understand the Contractor’s intentions. This will enable them to assist in devising any mitigation measures, which would minimize environmental impact during these tasks. The Method Statement should also clearly stipulate mitigation methods of the intended works, against which the contractor’s performance will be measured.

For each instance wherein it is requested that the Contractor submit a Method Statement to the satisfaction of the ESM and Engineer, the format should clearly indicate the following:-

What a concise, description of the task/work to be undertaken;
How a detailed description of the process of work, methods, materials and mitigation strategies;
Where a description/sketch map of the locality of work area (if applicable); and
When the sequencing of actions with due commencement dates and completion date estimates.

The Contractor must submit the Method Statement two weeks before any particular construction activity is due to start, especially with respect to impacts on sensitive ecosystems. Work may not commence until the method statement has been accepted by the ESM and Engineer, and clearly communicated to the workforce. The Contractor shall, except in the case of emergency activities, allow 14 days for consideration and approval of the Method Statement. The Engineer or ESM may require changes to a Method Statement if the proposal does not comply with the specifications or if, in the reasonable opinion of the Engineer and ESM, the proposal may result in damage to the environment in excess of that permitted by the specifications. Approved Method Statements shall be communicated to all relevant personnel.

Method Statements may be required by the ESM for the following, if so required:

- Construction procedures;
- Materials and equipment to be used;

- How and where materials will be stored;
- The containment of accidental leaks or spills;
- Timing and location of activities; and
- Construction activities
    - *Dust*
        - *Dust control protocol.*
    - *Fire and hazardous substances*
        - *Handling and storage of hazardous wastes.*
        - *Emergency spillage procedures and compounds to be used.*
        - *Emergency procedures for accidental fire.*
        - *Methods for the disposal of hazardous materials.*
    - *Fuels and fuel spills*
        - *Methods of refuelling vehicles.*
        - *Details of methods for fuel spills and cleanup operations.*
    - *Protection of archaeological resources*
        - *Methods for dealing with archaeological resources in the event that any are found.*
    - *Protection of environmentally sensitive resources (fauna and flora)*
        - *Methods for dealing with conservation areas or areas identified as environmentally sensitive requiring protection.*
        - *Locality and preparation of onsite nursery to house vegetation relocated from construction areas or propagated locally for replanting purposes.*
        - *Details of methods dealing with the identification, transportation and transplanting of flora species of conservation value.*
        - *Details of methods dealing with the identification, capture and relocation of fauna species of conservation value.*

- *Solid waste management*
  - *Solid waste control and removal of waste from Site.*
- *Sources of materials*
  - *Details of materials imported to the Site (where applicable).*
- *Wash areas*
  - *Location, layout, preparation and operation of all wash areas.*
- *Storm water management*
  - *Details of how storm water is to be handled on Site.*

A pro-forma Method Statement is given below.

METHOD STATEMENT

CONTRACT: ..... **DATE**: .....

WHAT WORK IS TO BE UNDERTAKEN? (give a brief description of the works)

WHERE ARE THE WORKS TO BE UNDERTAKEN? (where possible, provide an annotated plan and a full description of the extent of works)

START AND END DATE OF WORKS FOR WHICH THE METHOD STATEMENT IS REQUIRED

Start Date:	End Date:

HOW ARE THE WORKS TO BE UNDERTAKEN? (provide as much detail as possible, including annotated sketches and plans where possible) *Note: please attach extra pages if more space is required.

APPENDIX B

PRO-FORMA: ENVIRONMENTAL MONITORING REPORT

PRO-FORMA: ESM ENVIRONMENTAL MONITORING REPORT

Zone: ..... **Environmental Site Manager:.....**

Report No:..... **Date:.....**

Environmental Education	**Contractor:**	**Date undertaken:**

Issue	**Observation**	**Remedial action**	**Compliance**
2.1 Construction			
2.1.1 All plant, personnel, etc. restricted to works area?			
2.1.2 Where needed, sensitive areas adequately fenced off?			
2.1.3 Fencing well maintained?			
2.1.4 No unauthorized entry, stockpiling, etc. outside work areas?			
2.1.5 All vehicles and plant remain on designated routes?			
2.1.6 Information posters put up and maintained where needed?			
2.1.7 No smoking in hazardous areas?			
2.1.8 Basic fire fighting equipment available on Site?			
2.1.9 No burning of wastes as a means of disposal?			

Issue	Observation	Remedial action	Compliance
2.1.10 Staff aware of procedures in the event of spills/leaks?			
2.1.11 Materials for dealing with spills/leaks available?			
2.1.11 Emergency contact numbers displayed at Manager's office?			
2.1.12 Complaints Register up to date?			
2.1.13 No animals trapped or harmed?			
2.1.14 No flora removed or damaged outside work areas?			
2.1.15 Adequate drainage and retaining works in place to control erosion/siltation?			
2.1.16 Restricted traffic over stabilized areas?			

Issue	Observation	Remedial action	Compliance
2.1.17 No unauthorized traffic on revegetated areas?			
2.2 Materials			
2.2.1 Materials adequately secured to ensure safe deliveries?			
2.2.2 All materials being stored inside Manager's designated storage area?			
2.2.3 All imported materials free of weeds, litter, etc.?			
2.2.4 No spoil stockpiled outside agreed areas?			

Issue	Observation	Remedial action	Compliance

2.2.5 Spoil stockpiles correctly shaped and protected?			
2.2.6 All plants used for landscaping/rehabilitation listed in the approved plant list?			
2.2.7 Plants adequately protected during transit and at storage facilities?			
2.2.8 Plants healthy and free from diseases and pests?			
2.3 Plant			
2.3.1 Fuel/oil storage facilities adequately secured and protected against leakage?			
2.3.2 Safety signage provided at fuel storage areas?			
2.3.3 All electrical/petrol pumps suitably equipped and placed not cause any danger of ignition?			
2.3.4 Fuel storage areas comply with fire safety regulations?			
2.3.5 Necessary authorizations obtained for temporary above ground fuel tanks?			
2.3.6 Capacity of a fuel tank does not exceed 9000 ℓ?			
2.3.7 Fuel tanks erected at least 3.5 m away from buildings, boundaries or other flammable materials?			
2.3.8 Adequate toilet facilities provided for staff (min. 1 toilet per 5 workers)?			
2.3.9 Toilets adequately maintained?			
2.3.10 All workers use toilets?			
2.3.11 Scavenger-proof bins with lids provided at eating areas?			

Issue	Observation	Remedial action	Compliance
2.3.12 Waste temporarily stored inside Contractor's Camp in weather- and scavenger-proof bins?			
2.3.13 No burying or dumping of wastes on site?			
2.3.14 Waste management system in place?			
2.3.15 Refuse disposed of at licensed landfill?			
2.3.16 Adequate waste-water management system in place?			
2.3.17 Approval for discharge of contaminated water into municipal sewer system?			
2.3.18 Runoff from workshops, fuel depots, etc. directed into conservancy tanks for disposal at approved site?			
2.3.19 Wash areas placed and built in such a way that does not cause any pollution?			
2.3.20 All maintenance of plant and equipment takes place in workshop?			
2.3.21 All plant is well maintained (no leaking)?			
2.3.22 Workshop has a bunded, impermeable floor sloping towards oil trap?			
2.3.23 Filling Station area tidy?			
2.3.24 All plant and machinery have drip trays, which are checked and emptied daily?			
2.3.25 All repairs on machinery using fuels or lubricants done over a drip tray?			
2.3.26 Static plant located within a bunded area?			
2.3.27 Measures in place to minimize dust generation?			

Issue	Observation	Remedial action	Compliance
2.3.28 No handling/transport of erodible materials under high wind conditions?			

1. EMP Transgressions	Contractor:	Date:	Fine issued: (N$)

2. Complaints	Date received:	Action taken:

3. Other Issues	