



ENVIRONMENTAL MANAGEMENT PLAN
FOR THE
GIBEON SHORT POWER SUPPLY LINE
CONSTRUCTION PROJECT

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Prepared by:

NamWater, Private Bag 13389, Windhoek, Namibia

Contact Person: Fillemon Aupokolo

Tel: +264-6171 2095

Email: AupokoloF@namwater.com.na

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LIST OF ABBREVIATIONS

AC	Alternating Current
AC	Asbestos Cement
AIDS	Acquired Immune Deficiency Syndrome
CoC	Code of Conduct
DEA	Department of Environmental Affairs
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMA	Environmental Management Act 7 of 2007
EMP	Environmental Management Plan
HIV	Human Immunodeficiency Virus
I&AP	Interested and Affected Parties
km	kilometer
kV	kilovolt
kVA	kilo (Volt X Amps)
MAWF	Ministry of Agriculture, Water, and Forestry
m	meter
mm	millimeter
MEFT	Ministry of Environment, Forestry and Tourism
NEM	NamWater Environmental Manager
NWQG	Namibian Water Quality Guideline
NWQS	Namibian Water Quality Standard
STI's	Sexually Transmitted Infections
v	Voltage
WSS	Water Supply Scheme

GLOSSARY OF TERMS

Conductor: A type of material that allows heat or electricity to pass through it.

Environmental Impact Assessment (EIA): The continuous method of assessing adverse effects of development on the environment.

Interested and affected parties (I&AP): Persons or groups of people, organizations, the institution that is directly or indirectly affected by the proposed development.

Water Supply Scheme (WSS): A collection of NamWater transportation infrastructure aimed at providing potable water to specific communities or industrial areas.

1. INTRODUCTION

Gibeon is located in the Hardap Region and is administered by the Village Council. The Village Council is responsible for payments and running of the water account. There are 700 erven accommodating 560 households and 2 720 people, who are served by 370 metered water points. See **Figure 1** for the location of Gibeon.

Gibeon settlement receives its water via gravitation flow from the terminal concrete reservoir to the settlements water distribution system. There is currently no electrical power supply at the water reservoir, thus the existing telemetry communication equipment is powered by solar energy. However, there are power lines close to the scheme, approximately 500m from where electrical power can be sourced. Namwater intends to source and construct a power line to connect power to the reservoirs' electronic equipment.

The power line will increase the electrical power supply to the Gibeon Water Scheme. The infrastructure will improve the reliability of water, which is critical for the communities that rely on these reservoirs. The construction and operation of the project requires urgency in the matter of assisting disadvantage communities.

2. PURPOSE OF THE EMP

This Environmental Management Plan (EMP) was developed as an important tool focusing on the management actions that are required to ensure environmental compliance for the construction, operation and decommissioning phases of the proposed Gibeon power line. The EMP has been compiled to ensure that the contractors, subcontractors, including consultants, understand the environmental risks arising from the construction project.

Therefore, the purpose of this EMP is to ensure that construction and operational and decommissioning activities for construction project complies with the environmental impact mitigation practices (minimizing adverse impacts), and that optimal environmental protection is achieved during the various phases of the construction project.

This EMP provides:

- ❖ Strategies and plans to manage environmental impacts identified through the application of best practices to avoid, reduce or mitigate potential adverse impacts to minimal of insignificant levels;
- ❖ Measures that could enhance positive impacts;
- ❖ Information required to ensure adherence to legal requirements;
- ❖ Strategies to maintain good community relationships;

- ❖ A method for auditing and monitoring implementation and operation of recommended measures, thereby ensure compliance with the EMP.
- ❖ Assignment of responsibilities with regard to measures to be implemented.
- ❖ Greivance procedure to ensure noncompliance and complaints are recorderd accordingly.

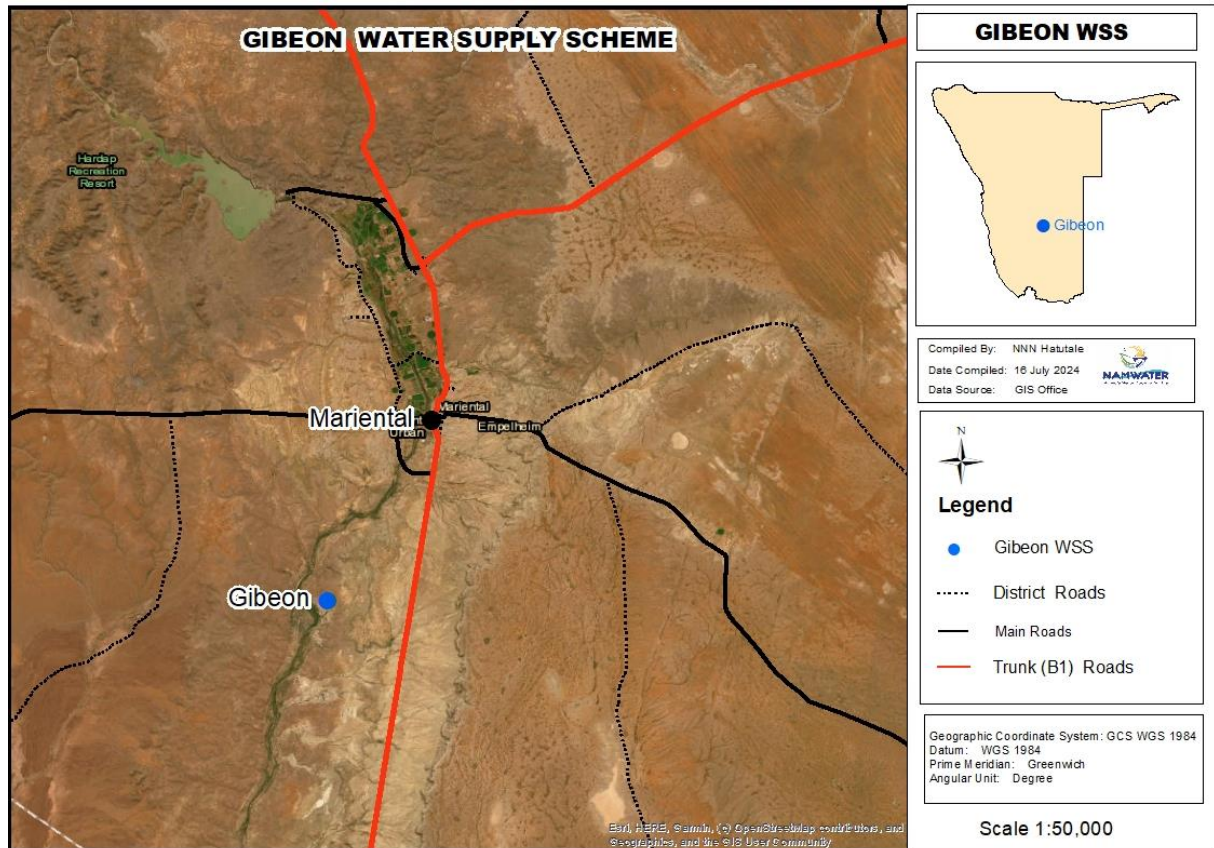


Figure 1: Gibeon Location Map

3. SCHEME EXISTING INFRASTRUCTURE

Two production boreholes supply the scheme, the boreholes are located at farm Orab, approx. 50 km from Gibeon. Raw water is pumped to the settlements concrete reservoir. The water is then treated with gas chlorination. Please see **Annexure 1** for the existing scheme layout.

3.1 Water Source

- ❖ The scheme consists of two very strong boreholes (WW27524 and WW27845), which each yield 80 m³/hr.

3.2 Water Quality and Disinfection

- ❖ Gas chlorination takes place in the reservoir.

3.3 Pipe Work

- ❖ The pipeline from the boreholes to the reservoir is 53 km long 200 mm diameter pipeline. The first 20 km is a class 18 AC pipeline, the second 20 km is a class 9 uPVC pipeline, whilst the remainder is a class 12 AC pipeline.

3.4 Reservoir

- ❖ The reservoir at Gibeon is a 1 000 m³ concrete reservoir.

4. DESCRIPTION OF THE PROPOSED PROJECT

4.1 Project objective

The primary objective of the project is to increase the electrical power supply to the Gibeon water scheme.

4.2 Scope of Work

The proposed power line project will encompass the following:

Construction of a single-phase power line

- ❖ The power required to energise the reservoirs' electrical equipment will require the construction of a power line. The proposed power line length is approximately 500 m. The (110-250V ac) power lines will be supported by wooden monopole structures, each measuring approximately 9 metres in height.
- ❖ The span width between the wooden monopole structures will be approximately 100 to 120 metres. A single-phase electrical system will be installed, i.e. two conductors having a live and neutral line. **Figure 2** below illustrates a typical design of a single-phase (110-250V ac) power line.
- ❖ The electrical power is required to power the following reservoir electrical equipment: (a). Telemetry systems (b). Prepaid meter facilities (c). Level transducers (d) Electromagnetic flowmeters (e) Actuated valves.



Figure 2: Typical single-phase design

5. DESCRIPTION OF THE ENVIRONMENT

The baseline description provided below focuses on the receiving environment:

5.1 Climate

Gibeon is found in the Namibian savannah woodlands ecoregion, which has a harsh climate with large seasonal and daily temperature variations. The climate is extreme most times of the year with high temperatures especially during the rainy season and low temperature during the dry winter season. The low humidity of the area results in extreme temperatures.

5.1.1 Precipitation

Precipitation in the savannah woodlands ecoregion is scarce. The area surrounding Gibeon experiences inter-annual variable rainfall (Mendelsohn et al., 2002), with rainfall, peaking between December and March. Annual rainfall ranges between 100-200mm.

5.1.2 Temperature

Gibeon experiences extreme temperatures, typical of most areas in southern Namibia, with an average temperature as high as 40°C (Mendelsohn et al., 2002).

5.2 Geology

Gibeon Kimberlite Province (GKP), which is 60-70 Ma in age, intrude shales and sandstones of the Neoproterozoic to Palaeozoic Nama Group, and tillites and mudstones of the Carboniferous Dwyka Formation (Janse, 1975; Spriggs, 1988; Nguno, 2004).

5.3 Natural Flora

The vegetation in and surrounding Gibeon is dominated by Karoo shrubs and grasses, typical of the Namibian savannah woodlands ecoregion in the south. Characteristic vegetation of this ecoregion is, *Parkinsonia Africana*, *Catophractes alexandri*, *Acacia nebrownii*, *Boscia foetida*, *B. albitrunca*, and *Rhigozum trichotomum* as well as smaller karoo bushes such as *Eriocephalus spp.* and *Pentzia spp.* Tufted grasses, mainly *Stipagrostis spp.*, can be found scattered among the woody plants in the ecoregion (Fund et. al., 2015).

5.4 Fauna

The Gibeon areas hosts a variety of large to small fauna, ranging from Kudu (*Tragelaphus strepsiceros*), Springbok (*Antidorcas marsupialis*), Duiker (*Sylvicapra grimmia*), Klipspringer (*Oreotragus oreotragus*), Steenbok (*Raphicerus campestris*), black-backed jackal (*Canis mesomelas*) to Caracal (*Caracal caracal damarensis*). Gemsbuck (*Oryx gazella*) are also widely scattered across the area in addition to Zebra (*Equus zebra hartmannae*) and Red Hartebeest (*Alcelaphus buselaphus caama*) (Barnard et al., 1997).

6. RESPONSIBLE PARTIES

6.1 Contractor

The contractor is responsible for the implementation of the EMP during the construction phase of the Gibeon power line. The EMP will be included in all tender and contract documents. This guarantees that the contractor is fully aware of his obligations and responsibilities.

The Contractor shall take adequate steps to educate all members of his workforce (in Consultation with NamWater) as well as his supervisory staff on the relevant environmental laws and protection requirements. The Contractor shall supplement these steps with prominently displayed notices and signs in strategic locations to remind personnel of environmental obligations.

The Contractor shall ensure that all his employees, and those of his Sub-Contractors, attend an Environmental, Awareness Training. This training shall be structured to ensure that attendees:

- ❖ Acquire a basic understanding of the key environmental features on the site and its immediate environs;
- ❖ Become familiar with the environmental controls contained in the EMP;
- ❖ Are made aware of all protected areas and that the trapping, catching, poisoning, and/or shooting of animals is strictly forbidden. No domestic pets are allowed on site;
- ❖ Are informed that natural features (e.g. rock formations) are not defaced or marked for the survey or other purposes unless agreed beforehand with the contractor.
- ❖ Natural water sources (e.g. streams) are not allowed to be used for the purposes of swimming, personal washing, and the washing of machinery or clothes;
- ❖ Are made aware of the need to conserve water and minimise waste;
- ❖ Receive pertinent, written instructions regarding compliance with the relevant environmental management requirements (viz. typical environmental “Code of Conduct”);
- ❖ Are made aware of any other environmental matters as deemed necessary by the contractor.
- ❖ Are made aware of the importance of preserving archaeological sites.
- ❖ Receive training on-site health and safety requirements.

- ❖ Are aware that a copy of the EMP is readily available on-site and that all site staff are aware of the location and have access to the document;
- ❖ Become familiar with the environmental controls contained in the EMP;
- ❖ Are made aware of the need to conserve water and minimise waste;

6.2 Environmental Control Officer

A suitably qualified and experienced Environmental Control Officer (ECO) shall be appointed by the Contractor prior to the commencement of construction to ensure that the mitigation and rehabilitation measures are implemented and to ensure compliance with the provisions of the EMP. The ECO is responsible to oversee and monitor compliance with and implementation of the EMP. The ECO's responsibilities include:

- ❖ Liaison with the community, NamWater, Consulting Engineer, Resident Engineer, and Environmental Authorities;
- ❖ Monitoring of all the Contractor's activities for compliance with the various environmental requirements contained in this EMP;
- ❖ Ensuring that the required remedial action is implemented in the event of non-compliance;
- ❖ Ensuring the proactive and effective implementation and management of environmental protection measures;
- ❖ Ensuring that institutions and that any and all public comments or issues are appropriately reported and addressed;
- ❖ Routine recording and reporting of environmental activities, incidents, and non-compliance on a monthly basis;
- ❖ Notifying the Environmental Authorities immediately of any events or incidents that may cause significant environmental damage or breach the requirements of the EMP; and
- ❖ Presenting Environmental Awareness Training courses to the Contractor's entire team of workers prior to commencing with construction. All new appointees should also receive the training.

The ECO shall visit the site a minimum of once a month. More frequent visits may be required if the situation required it or in cases of non-compliance.

6.3 NamWater

NamWater's Environmental Manager is primarily responsible for the implementation of the EMP during the operation, maintenance and decommissioning phases for the Gibeon project.

He/she should also ensure proper implementation of the EMP by the Contractor. Compliance will be monitored via compliance audits.

NamWater shall ensure that the contractor complies with the EMP. NamWater, as the implementing agency, is responsible for:

- ❖ Ensuring that the objects of the EMP are being obtained;
- ❖ Ensuring that all environmental impacts are managed according to the environmental principles of avoiding, minimizing, mitigating and rehabilitation. This will be achieved by the successful implementation of the EMP;
- ❖ Ensuring that appropriate monitoring and compliance auditing are executed;
- ❖ Ensuring that the environment is rehabilitated to its natural state as far as possible.

7. LEGAL ENVIRONMENT

A legal review was completed and the key laws of concern include those, which protect the ecological integrity of the Gibeon ecosystem and its water resource, including the Water Act of 1954 and the Water Resources Management Act of 2004, and applicable international treaties such as the Convention on Biological Diversity. These laws and conventions place Namibia under an obligation to conserve the ecological integrity of the Gibeon ecosystem for sustainable use by Namibians.

7.1 The Constitution of the Republic of Namibia

There are two clauses contained in the Namibian Constitution that are of particular relevance to sound environmental management practice, viz. articles 91(c) and 95(l). In giving effect to articles 91(c) and 95(l) of the Constitution of Namibia, general principles for sound management of the environment and natural resources in an integrated manner have been formulated. The formulation of these general principles resulted in Namibia's Environmental Assessment Policy of 1994. To give statutory effect to this Policy, the Environmental Management Act was approved in 2007 and gazetted as the Environmental Management Act (Act No. 7 of 2007) (herein referred to as the EMA. As the organ of state responsible for management and protection of its natural resources, MEFT: DEA is committed to pursuing the 13 principles of environmental management that are set out by Part 2 of the Act.

To summarise, Articles 91(c) and 95(l) refer to:

- ❖ Guarding against over –utilisation of biological natural resources;
- ❖ Limiting over-exploitation of non-renewable resources;
- ❖ Ensuring ecosystem functionality
- ❖ Protecting Namibia's sense of place and character;

- ❖ Maintaining biological diversity and
- ❖ Pursuing sustainable natural resource use.

7.2 Environmental Assessment Policy (1995)

Cabinet endorsed Namibia's Environmental Assessment Policy in 1995 as the first formal effort in Namibia to regulate the application of environmental impact assessments and environmental management. Amongst others, the Policy provides a procedure for conducting EIA's which sets out to:

- ❖ Better inform decision-makers and to promote accountability of decisions taken;
- ❖ Strive for a high degree of public participation and involvement of all sectors of the Namibian community during the execution of the EIA;
- ❖ Take into account the environmental costs and benefits of projects and Programmes;
- ❖ Promote sustainable development in Namibia;
- ❖ Ensure that anticipated adverse impacts are minimized and that positive impacts are maximized.

7.3 Environmental Management Act (No 7 of 2007) (EMA)

The Environmental Management Act (EMA) was promulgated in 2007 by Parliament and gives effect to the Environmental Assessment Policy. The Act specifies the environmental assessment procedures to be followed as well as the listed activities (activities that require an EIA).

Of relevance to this project are the following listed activities, as provided in Section 27 of this Act, which includes:

- ❖ The construction, transmission, and supply of electricity.

Table 1: Applicable listed activity in terms of EMA and Regulations

Activity	Description of Activity	Activity Triggers
Activity 1. (b) (Energy generation, transmission, and storage activities)	Construction, transmission, and supply of electricity;	The proposed power supply project will construct a power line to supply electrical power to the reservoir.

7.4 EIA Regulations Government Notice No. 30, promulgated on 6 February 2012

The regulations, promulgated in terms of the EMA, were promulgated on 6 February 2012 and indicated a certain list of activities that may not be undertaken without an environmental clearance certificate: environmental management act, 2007 from MEFT: DEA prior to commencing the project.

8. ENVIRONMENTAL MANAGEMENT PLAN

An EMP is an important tool focusing on the management actions that are required to ensure environmental compliance of a particular project.

EMP implementation is a cyclical process that converts mitigation measures into actions and through cyclical monitoring, auditing, review and corrective action, ensures conformance with stated EMP aims and objectives. Monitoring and auditing, feedback for continual improvement ensures that environmental performance has been provided and corrective action is taken for an effective EMP.

The main aim of this EMP is to ensure that the project complies with the goals of the Namibian Environmental Management Act (No. 7 of 2007); and, more specifically, to provide a framework for implementing the management actions as described in the EMP for the operational and maintenance phases of the scheme. Best practice is proposed for the operation of the scheme.

There are some environmental impacts that cannot be avoided. These environmental impacts require mitigation, and in order to mitigate against these impacts an EMP is required. The EMP aims to ensure best practises are implemented and environmental degradation is avoided through appropriate environmental protection, adherence to legal requirements and maintaining good community relationships.

MEFT indicated that EMP's for existing operations are sufficient.

The project activities are grouped according to the different operational processes and stages. Most of the impacts can be reduced through good housekeeping.

9. MITIGATION MEASURES PRIOR TO CONSTRUCTION

The following mitigation measures are put in place mainly for the contractor, the contractor must ensure that the EMP's measures and management actions are adhered to. The designated ECO should be allocated appropriate authority to ensure EMP recommendations and requirements are accomplished.

9.1 Ablution facilities at the construction site

Temporary toilets shall be supplied by the contractor during the construction phase, at a maximum ratio of 1 toilet per 20 workers (preferred 1:15) within walking distance of the work area and all be kept in clean and hygienic conditions at all times

The contractor shall ensure that no spillage occurs during the cleaning or emptying of toilets and that the contents are removed from the site and be disposed of at an appropriate waste disposal facility. Discharge of waste from toilets into the environment is prohibited.

9.2 Waste management

All solid waste (domestic and construction waste) will be collected and disposed of at an appropriate local landfill.

Sufficient bins with lids shall be provided on-site to store the waste produced on a daily basis. Solid, non-hazardous waste shall be disposed of in the bins provided and no onsite burying, dumping or burning of any waste materials, vegetation, litter or refuse will be permitted. Bins are to be emptied, a minimum of once daily, and are not allowed to be overloaded. The waste may be temporarily stored on-site in a central waste area that is weatherproof and scavenger-proof, and which the contractor has approved.

9.3 Workshops and Site Management

In the event that a workshop is required, the workshop will be erected on site (as per agreement with the landowners) for the duration of the construction phase. Temporary fences are to be erected around the workshop, to prevent the theft of equipment and animals from entering the workshop.

Site activities shall be carefully managed in order to avoid site erosion and sedimentation. The contractor shall implement effective sediment and erosion control measures during construction and operation of the construction work in accordance with the environmental requirements. The camp should where possible be away from prominent roads to minimise visual impact. Provide proper accommodation ablution and cooking facilities, and a construction camp consisting of an equipment and storage facility for the storing and servicing of construction material and equipment.

9.4 Storage and utilization of hazardous substance

Areas for the storage of fuel or lubricants and for a maintenance workshop shall be fenced and have a compacted/impervious floor to prevent the escape of accidental spillage of fuel and or lubricants from the site.

These substances should be stored in a bunded area, with a volume of 130 % of the largest single storage container or 25 % of the total storage containers whichever is greater.

- ❖ The storage of these substances should be as stipulated below:
- ❖ Any harmful substance or chemical must be stored and handled so that it does not become water-or airborne.
- ❖ Bulk storage of hazardous materials should be in clearly marked containers, indicating the type and quantity being stored.
- ❖ Storage containers should be surrounded by berms to contain the volume being stored in case of an accidental spillage system.

9.5 Refuelling

Refuelling of vehicles should be done in designated areas with appropriate measures in place to prevent spillages; these may include the use of drip trays, funnels, non-drip dispensing nozzles, and any other similar device. Regardless of the preventative measures in place, all mobile fuel bowsers shall carry a spill-kit that is adequately sized to contain at least a 200-litre spill, at all times.

9.6 Cooking facilities:

- ❖ Gas or fuel-efficient stoves should be provided to the employees to limit the use of illegal collection of firewood.
- ❖ If firewood is to be used (which is to be provided by the contractor), the fires should not be left unattended. All grass and bushes shall be removed around fireplaces.
- ❖ Employees shall be made aware that the collection and removal of firewood is prohibited, except where indicated by the contractor as clearing takes place.
- ❖ Fires are only permitted in designated areas and shall not be left unattended.
- ❖ Cooking places shall be located at a safe distance from fuel/hazardous materials storage area and vehicle parking areas.
- ❖ Any fires that occur outside of designated areas shall be reported to the ECO immediately.
- ❖ Fire extinguishers should be readily available in the camp.

9.7 Transport of materials

All materials to be transported shall be appropriately secured and covered to ensure safe passage between destinations. Loads including, but not limited to sand, stone chips, fine

vegetation, refuse, paper and cement, shall have appropriate cover to prevent them spilling from the vehicle during transit. The contractor shall be liable for any clean-up resulting from the failure by his employees or suppliers to properly secure transported materials.

9.8 Concrete batching

The location of the batching plant (including the location of cement stores, sand and aggregate stockpiles) shall be as approved by the contractor after consultation with the ECO. The concrete/cement batching plant shall be kept neat and clean at all times. Concrete batching shall take place at least 20 m away from any water resource to avoid contaminated water and/or sediment entering the resource.

All batching activities are to occur on ground that has been protected. The batching plant shall be located on a smooth impermeable surface (concrete or 250 µm plastic covered with 5 cm of sand). The area shall be bunded and sloped towards a sump to contain spillages of substances. All visible remains of concrete shall be physically removed on completion and be appropriately disposed of. All spoiled and excess aggregate/cement/concrete shall be removed and disposed of appropriately. All wastewater resulting from batching of concrete shall be disposed of appropriately and shall not be discharged into the environment, unless treated to an acceptable standard, as determined by the ECO. Contaminated water storage areas shall be emptied when full and shall not be allowed to overflow. The contractor shall implement appropriate protection from rain and flooding.

The Contractor shall ensure that sand, aggregate, cement or additives used during the mixing process are contained and covered to prevent contamination of the surrounding environment. Reasonable measures to prevent the spillage of cement/concrete during batching and construction operations shall be taken by the Contractor.

Where “ready-mix” concrete is used, the Contractor shall ensure that the concrete trucks do not wash their chutes directly onto the ground. Any spillage resulting from the concrete truck drum-wash-water shall be cleaned up immediately and disposed of appropriately. Concrete trucks shall not be permitted to dump drum-wash on-site unless into contaminated water pond (that has been approved by the ECO) which must be fully rehabilitated at completion and the sediment collected for disposal.

9.9 Workforce

The contractor will be responsible for the recruiting and management of his/her staff. The EMP recommends that for unskilled vacancies, local labourers be employed.

It's the Contractors responsibility to:

- ❖ Establish a formal and organised recruitment process.
- ❖ Not recruit at construction sites.
- ❖ Ensure that contractors are aware of recommended recruitment procedures and discourage any recruitment of labour outside the agreed process.
- ❖ Encourage contractors to recruit local Namibian labourers, (i.e. from Gibeon).
- ❖ Keep to provisions in the Labour Act.
- ❖ Repatriate employees to the town from where they were hired after completion of the contract, (i.e. if employed from further away than Gibeon).
- ❖ Inform job seekers that they are hired for a contract period only.
- ❖ train and ensure skills development of the workforce.
- ❖ Stick to mutually agreed working times. No work on Sundays or public holidays.

10. MANAGEMENT ACTIONS

10.1 Construction Phase

Objectives	Risk Sources	Management Action	Monitoring
a. Minimize the disturbance of vegetation and faunal communities and their habitats during the construction of the Gibeon power line.	Disturbance of vegetation and faunal communities and their habitats.	<ul style="list-style-type: none"> Identify and demarcate the extent of the construction or accommodation site and associated work areas using danger tape with steel droppers. Identify animal species, populations and nest to be relocated. Relocate to areas with no associated risks. Such operations should be planned well in advance. Protect identified plants using danger tape and steel droppers. Keep disturbance of vegetation and fauna to a minimum. The area to be disturbed should be as small as possible. Maintain plant demarcations in position until the construction works cease. 	<p>Visual inspection to ensure that construction activities are done within the demarcated area.</p> <p>Frequency: Daily, especially during the first phase of construction, as this is the time when most disturbances to the vegetation and fauna and their habitats are most likely occur.</p> <p>Responsible party: Contractors.</p>
b. Prevent unnecessary removal of trees/plants of importance.	Unnecessary removal of trees/plants of importance.	<ul style="list-style-type: none"> Do not remove any vegetation unless it is absolutely necessary. Make sure that bulldozer, grader and excavator operators are informed. The clearing of plants or natural features for the proposed construction should be managed to avoid further damage to vegetation cover. The use of herbicides and pesticides is prohibited. 	<p>Visual inspection/checks to prevent, as well as to ensure the unnecessary removal of trees/plants.</p> <p>Frequency: Daily</p> <p>Responsible Party: Contractors.</p>
c. Prevent the poaching of flora and fauna.	Poaching of fauna and flora.	<ul style="list-style-type: none"> Employees who poached fauna and/or flora will be handed to the authorities for prosecution. 	<p>Visual inspection.</p> <p>Frequency: Weekly visual checks.</p>

Objectives	Risk Sources	Management Action	Monitoring
		<ul style="list-style-type: none"> • Employees who set traps will be handed to the authorities for prosecution. No wild animals under any circumstance are hunted illegally, handled, removed or be interfered with. • The Contractor will be held liable for the replacement of any plant or animal that is removed or damaged due to the Contractor's negligence or mismanagement. • Regular checks of the surrounding environment must be undertaken to ensure no traps or snares have been set. Any snares or traps found on or adjacent to the site must be disposed of. • Employees should not collect any fruits or seeds without permission from appropriate persons. 	Responsible party: Contractors.
d. Minimise the creation and use of tracks outside existing roads.	Creation of tracks outside existing roads.	<ul style="list-style-type: none"> • The Contractors shall be held responsible for all project related traffic. • Use existing roads. • Construction traffic shall be controlled to ensure minimal disruption to other road users. • Do not construct new roads when the quality of existing roads deteriorates. Where possible, repair or upgrade existing roads. • Areas to be cleared for road construction should be as small as possible. • Road construction methods should ensure good road surfaces to preclude vehicles driving off-road to find smoother surfaces with less corrugation or potholes. 	Visual checks to ensure that no off-road driving exists. Frequency: Weekly Responsible party: Contractors.

Objectives	Risk Sources	Management Action	Monitoring
		<ul style="list-style-type: none"> • Ensure that adequate vehicle turning areas are allowed. • Enforce speed limits at all times. Unless otherwise specified, the speed limit on construction roads is 50km/h. • Runoff from roads must be managed to avoid erosion and pollution problems. • Roads not required for further use shall be rehabilitated immediately. • Enter and exit roadways and construction areas at demarcated entrances. • Erect signage to warn motorists about construction activities and heavy vehicle movement where appropriate. • Use 3-point turns and no U-turns. Confine turning to the road. • Prevent shortcuts between roads. 	
<p>e. To ensure that the living conditions of workers are not hazardous to their health or safety.</p>	<p>Hazardous living conditions for the employees.</p>	<ul style="list-style-type: none"> • Materials storage may only be at designated sites that have been determined by the ECO. • Toilets Facilities: <ul style="list-style-type: none"> - Always use the toilet & hand washing facilities provided. - The accommodation camp must have adequate toilets (portable chemical toilets) with hand-wash. - Separate facilities for males and females are recommended, and the facility must provide privacy. 	

Objectives	Risk Sources	Management Action	Monitoring
		<ul style="list-style-type: none"> - Toilets shall be kept in a good state of repair and shall be serviced at intervals sufficient to ensure that they are kept in a clean and sanitary condition. - The Contractor shall ensure that no spillage occurs when the toilets are cleaned or emptied and that the contents are removed from the site. - Discharge of waste from the toilets into the environment is not allowed. - Each toilet shall be stocked with toilet paper at all times. - All toilets shall be secured to the ground to ensure that they are not overturned during high winds. • Acts of excretion or urination are strictly prohibited other than at the facilities provided. 	
<p>f. Minimise the damage and destruction of important palaeontological and archaeological sites during construction.</p>	<p>Disturbance to sites of palaeontological and archaeological importance.</p>	<ul style="list-style-type: none"> • Do not disrupt any archaeological or palaeontological sites. Inform NEM (N.P. du Plessis at cell no 081 127 9040) who will take the necessary action. • All workers will be educated about the importance of preserving archaeological sites. • Educate specific workers about tell-tale signs of archaeological sites and the action to be taken if one is identified. 	<p>Monitoring can and should involve field induction of key construction personnel so that they will be able to recognize the important palaeontological and archaeological sites themselves</p> <p>Frequency: Monthly</p> <p>Responsible party: Key Construction Personnel.</p>

Objectives	Risk Sources	Management Action	Monitoring
g. Borrow pits should only be established if its really necessary and careful excavation should be considered to minimise the impact.	Establishment of borrow pits.	<ul style="list-style-type: none"> No borrow pits should be established. 	<p>Checks to ensure that no borrow pits are established.</p> <p>Frequency: Monthly</p> <p>Responsible Person: Contractors.</p>
h. Minimise the number of heavy vehicles on the road.	Increased number of heavy vehicles on the road.	<ul style="list-style-type: none"> Heavy vehicles should be limited to the numbers necessary. 	<p>Checks to ensure that there is a minimal heavy vehicles on the road.</p> <p>Frequency: Weekly</p> <p>Responsible Person: Contractors.</p>
i. Minimise and prevent the activities that accelerate erosion during construction.	Erosion.	<ul style="list-style-type: none"> Runoff on steep inclines should be diverted to prevent the formation of erosion gullies. Vegetative cover is the most efficient and economical means of controlling soil erosion. Berms should be constructed at selected intervals on long sloping areas to prevent erosion. Diversion berms should be reshaped as necessary to divert runoff. When equipment crossings are necessary, diversions may be wider with flatter side slopes to minimise erosion. 	<p>Visual inspection to ensure that activities that accelerate soil erosion are minimised and if possible prevented at all costs.</p> <p>Frequency: Daily</p> <p>Responsible Person: Contractors.</p>

Objectives	Risk Sources	Management Action	Monitoring
		<ul style="list-style-type: none"> • Berms should be constructed with compacted soil, have a minimum top width of 60 cm and a minimum height of 30 cm, and should allow for a 10% settlement. It should have side slopes with a gradient of at least 2:1. • Runoff should be guided to a point where it will not cause damage. Scour by the discharge of runoff should be prevented. 	
j. Minimise and prevent the collection and removal of firewood during construction.	Collection of firewood.	<ul style="list-style-type: none"> • No vegetative matter may be removed for firewood. • The collection and removal of firewood is not allowed. • Fire extinguishers should be readily available at designated locations. • Cooking places shall be located at a safe distance from fuel / hazardous material storage area and vehicle parking bays. • The Contractor shall either provide firewood or limit the use thereof by providing gas or fuel-efficient stoves. 	<p>Checks to ensure that there's no removal and collection of firewood by the employees.</p> <p>Frequency: Weekly</p> <p>Responsible Person: Contractors.</p>
k. Dust control	Generation of dust	<ul style="list-style-type: none"> • The Contractor shall take all reasonable measures to minimise the generation of dust as a result of construction activity. • Construction vehicles to use only designated roads and to adhere to speed regulations. • Consider temporary ceasing of work during high wind conditions. • The contractor is urged to use dust suppression methods. 	<p>Visual inspection to ensure that activities that generate dust are minimised and if possible prevented.</p> <p>Frequency: Daily</p> <p>Responsible Person: Contractor.</p>

Objectives	Risk Sources	Management Action	Monitoring
i. Noise	Generation of noise	<ul style="list-style-type: none"> • Install and maintain silencers on trucks and machinery. • Repair faulty brakes. • Operators should not use hooters for the purposes of general communication. 	<p>Visual inspection to ensure that activities that generate noise are minimised and if possible prevented.</p> <p>Frequency: Daily Responsible Person: Contractors.</p>
m. Driving	Increased risk for accidents	<ul style="list-style-type: none"> • No operator will operate any equipment when he is under the influence of any narcotics. • Adhere to safety rules. • Always keep your headlights on. • Drivers must have the correct licence for the vehicle they are driving. 	<p>Visual inspection to ensure that activities that generate noise are minimised and if possible prevented.</p> <p>Frequency: Daily Responsible Person: Contractors.</p>
n. Concrete Batching	Solid waste accumulation, pollution	<ul style="list-style-type: none"> • Concrete batching shall take place on a smooth impermeable surface enclosed with a bund. • Batching shall take place at least 20m away from any water source to avoid contamination. • All wastewater resulting from batching of concrete shall be contained and disposed of appropriately and shall not be discharged into the environment. • Any spillages of concrete shall be cleaned –up immediately and disposed of through the solid waste disposal system. 	<p>Checks to ensure that concrete batching is properly done.</p> <p>Frequency: Daily and as required.</p> <p>Responsible Person: Contractors.</p>

Objectives	Risk Sources	Management Action	Monitoring
		<ul style="list-style-type: none"> • Empty cement bags shall be collected continuously and stored in containers until disposal at appropriate disposal sites. • Bulk cement storage should be at the main construction camp. 	
o. Site establishment		<ul style="list-style-type: none"> • No establishment within 100 meters from any watercourse. • At existing disturbed areas • Away from prominent roads to minimise visual impact. • All vehicles to be parked at a dedicated parking area. • Construction camp should be fenced off. 	
p. Trenching		<ul style="list-style-type: none"> • Contractors urged to ensure all open trenches are backfilled. • Backfill to the same contours or slightly higher to allow for settlement. 	<p>Frequency: Weekly and as required.</p> <p>Responsible Person: Contractors</p>
q. Blasting	Blasting can cause noise, dust, and vibration, and can cause injury to employees.	<ul style="list-style-type: none"> • Vehicles carrying explosives should be appropriately marked with warning signs. • Explosives should be stored in dry and well-secured areas. • The contractor shall hire the best experienced qualified persons for blasting actions. • Employees are not allowed to handle any explosives unless he/she has been trained to handle explosives. 	<p>Frequency: Weekly and as required.</p> <p>Responsible Person: Contractors</p>

10.2 Operation and maintenance phase

Waste Management

Objectives	Potential Impact	Management Action	Mitigation Action
a. To prevent the improper disposal of waste.	Pollution	<ul style="list-style-type: none"> Enforce a waste management programme. All waste will be removed to an appropriate waste dump. No waste should be buried. General Waste: Includes waste paper, plastic, cardboard, harmless organic (e.g. vegetables) and domestic waste. <ul style="list-style-type: none"> Collect contaminated soil, water, and other materials and dispose of it at an appropriate waste dumpsite. Bunding, concrete slabs and/or other protective measures should be installed where hazardous materials are handled. 	<p>A visual check to ensure wastes is managed according to the waste management plan</p> <p>Frequency: Weekly.</p> <p>Person Responsible: Scheme Supervisor.</p>
b. To avoid potential chemical /hazardous substance pollution	Pollution	<ul style="list-style-type: none"> Designated areas for the storage of potentially hazardous material will be lined with concrete and secured. The bunded area will be of adequate capacity to contain 1.5 times the volume of the hazardous material to be stored in the bunded area. 	<p>Visual checks to ensure chemical/hazardous substances are stored appropriately.</p> <p>Frequency: Monthly.</p> <p>Responsible Person: Scheme Supervisor.</p>
c. Waste Management	Littering (Litter such as paper, plastic, etc. can be blown away into the surrounding environment).	<ul style="list-style-type: none"> No littering will be allowed. Operation and maintenance areas will be kept free of waste at all times. Provide sufficient waste bins at worksites. Make sure that all waste is removed from the worksites. 	<p>Checks to ensure that litter is disposed of correctly in bins provided.</p> <p>Frequency: Daily, at the end of the workday.</p>

Objectives	Potential Impact	Management Action	Mitigation Action
		<ul style="list-style-type: none"> • Bins should be placed in pairs to ensure that one is always present while the other is being emptied. • Areas likely to generate higher quantities of waste shall be equipped with additional bins. • Refuse bins must be stable, i.e. cannot be tipped by animals, and have scavenger and baboon proof lids. • Make sure that the bins are covered so that plastic bags, paper, etc. are not blown away. • Make sure that the bins are regularly emptied and the waste taken to an appropriate waste dumpsite. • The central waste storage vessel shall be emptied weekly or as necessary. 	Responsible Person: Scheme Supervisor.

10.3 Workshops, vehicle and equipment management

Objectives	Potential Impact	Management Action	Mitigation Action
a. Appropriate storage of machinery, vehicles, and materials.	Inappropriate storage of machinery, vehicles, and materials may result in possible damage /disturbance of nearby undisturbed environments.	<ul style="list-style-type: none"> • Store machinery, vehicles, and materials only in demarcated areas; • Do not leave machinery and equipment standing around if not in use; • Do not store machinery, vehicles or materials in undisturbed or rehabilitating areas 	<p>Regular inspection to ensure that machinery, vehicles, and equipment are stored in designated areas.</p> <p>Frequency: Daily.</p> <p>Responsible Person: Scheme Supervisor.</p>
b. Minimize the leakage of fuels and lubricants from vehicles and equipment.	The use of vehicles and equipment that may leak fuel and lubricants.	<ul style="list-style-type: none"> • Only service machinery and vehicles in designated areas. • Regularly check your vehicle for fuel and oil leaks. • Maintain vehicles and equipment in good conditions through regular and thorough servicing. • Inform the Foreman of leaking vehicles and machinery so that he can schedule repairs. • Only refuel on the bund created for that purpose. • Immediately clean any accidental fuel and oil spills – do not hose spills into the natural environment. • Dispose of contaminated soil as hazardous waste in the correct location on site. • If a mobile fuel bowser is used, then all refuelling shall occur with appropriate measures in place to prevent spillages (drip trays, funnels, non-dripping dispensing nozzles, etc.) 	<p>Visual inspection to ensure that vehicles and equipment are in excellent condition and also to ensure that there is no leakage of fuels and lubricants.</p> <p>Frequency: Daily.</p> <p>Responsible Person: Scheme Supervisor.</p>

Objectives	Potential Impact	Management Action	Mitigation Action
		<ul style="list-style-type: none"> • All mobile fuel browsers shall carry a spill kit that is adequately sized to contain at least a 200-litre spill. • Train staff in the correct procedure/technique to transfer fuels. • Make sure all vehicles are roadworthy. Repair faulty brakes, exhausts, etc. immediately. • Fire extinguishers shall be present whenever undertaking any form of hot work, i.e. welding, gas cutting, angle grinding, etc. 	

10.4 Health and safety

Objectives	Potential Impact	Management Action	Mitigation Action
a. Minimize the occurrence of injuries.	Injuries.	<ul style="list-style-type: none"> • The contractor is obliged to provide PPE to their employees. • Make sure that all staff are equipped and know how to use safety and protective gear. This includes hard hats, goggles, hearing protectors, dusk masks, steel-toed shoes, etc. • Keep a comprehensive first aid kit at the scheme offices and at construction sites. • Establish an emergency rescue system for evacuation of seriously injured people. • Emergency procedures for accidents should be communicated to all employees. 	<p>Checks to ensure that correct procedures are followed and that protective clothing is worn at all times during construction.</p> <p>Visual checks to ensure that machinery and equipment used during construction are in good working condition.</p> <p>Frequency: Check weekly.</p> <p>Responsible Person: Scheme Supervisor.</p>

Objectives	Potential Impact	Management Action	Mitigation Action
		<ul style="list-style-type: none"> • Dangerous areas must be clearly marked and access to these areas controlled or restricted. • Good driving and adherence to safety rules will result in a minimum number of road and workplace accidents. • Fire extinguishers must be available at all refueling sites. Staff should be trained to handle such equipment. • Nobody is allowed to dispose of a burning or smoldering object in an area where it may cause the ignition of a fire. • Hazardous substances must be kept in adequately protected areas to avoid soil, air or water pollution. 	

11. REHABILITATION AND SITE CLOSURE

11.1 What is Rehabilitation?

Rehabilitation is the process of returning the land in a given area that has been disturbed by construction, operation, and maintenance to an acceptable state or an otherwise predetermined state. Many projects, if not all, will result in the land becoming degraded to some extent. However, with proper rehabilitation, most impacts associated with the construction, operation, and maintenance of the power line could be mitigated and restored to an acceptable level. Poorly rehabilitated areas provide a difficult legacy issue for governments, communities, and companies, and ultimately tarnish the reputation of companies as a whole.

Rehabilitation proposals and concept plans should be developed well before construction of the power line and those plans should be revised from time to time.

The Rehabilitation Phase refers to the period of the project after the completion of the actual construction works, the onset signalled by site clean-up, site rehabilitation, the withdrawal of the contractor from the site, and commencement of the maintenance period. To be fully effective, rehabilitation should begin as early as possible and be reviewed and updated on an ongoing basis. Rehabilitation should be an integrated part of all stages of the project life cycle.

11.2 Objectives of proper site closure and rehabilitation

The aim is to restore the area to an acceptable standard as close to its baseline environmental state as possible.

The objectives of the rehabilitation plan should be based upon the specific characteristics of the construction area and should reflect:

- ❖ Legislative requirements in the area;
- ❖ Health and safety considerations;
- ❖ Environmental and social characteristics of the surrounding area;
- ❖ Biodiversity in the area;
- ❖ Ecosystem services provided within the site's ecological boundaries;
- ❖ Post-closure land-use plan.

11.3 Rehabilitation measures to implement:

- a. Rehabilitation must be carried out as soon as possible after construction is completed and must be implemented progressively as construction is completed in sections of the power line.

- b. Clear and completely remove from the site all foreign materials, construction equipment, storage containers, concrete and compacted platforms, chemical toilets, bunded area(s), dustbins, temporary services, and fixtures.
- c. Remove from the site all temporary fuel stores, hazardous substance stores, hazardous waste stores, and pollution control sumps and pollution containment structures.
- d. Remove from the site all temporary sanitary infrastructure and wastewater disposal systems. Take care to avoid leaks, overflows and spills and dispose of any waste in the approved manner.
- e. Should there be spills of hazardous substances in the soil, polluted soil will be collected and disposed of at a hazardous landfill site that accepts such waste and replaced with unpolluted soil.
- f. Ensure that all access roads utilised during construction (which are not earmarked for closure and rehabilitation) are returned to a usable state and/or a state no worse than prior to construction.
- g. Dismantle and flatten temporary drifts and watercourse crossings, reinstating all drainage lines to approximate their original profile.
- h. Rip and/or scarify all disturbed areas of the construction site, including temporary access routes and roads, compacted during the execution of the works.
- i. Rip and/or scarify along the contour to prevent the creation of down-slope channels.
- j. Make sure that all potential hazards are properly closed and left in a safe and neat position.
- k. Ensure that the area is safe for the intended end land use.
- l. Rehabilitation will be done to the satisfaction of the ENV section and MEFT.

11.4 Rehabilitation and Closure Plan

All contractors will have to submit a Rehabilitation and Closure Plan for approval by the NamWater Environmental Section. The Environmental Section will also audit the implementation of the plan.

12. NAMWATER ENVIRONMENTAL CODE OF CONDUCT

What is an Environmental Code of Conduct?

It is a set of rules that everybody has to follow in order to minimise damage to the environment.

What is the ENVIRONMENT?

The ENVIRONMENT means the surroundings within which people live. The ENVIRONMENT is made up of the **soil, water, plants, and animals** and those characteristics of the soil, water, air, and plant and animal life that influence **human health and well-being**. **People and all human activities** are also part of the environment and have to be considered during the operation of the Scheme.

Do these ENVIRONMENTAL RULES apply to me?

YES, The Environmental Rules apply to EVERYBODY. This includes all permanent, contract, or temporary workers as well as any other person who visits the Scheme. Every person will be required to adhere to the Environmental Code of Conduct.

ALL PERSONNEL must study and keep to the Environmental Code of Conduct

The SCHEME SUPERVISOR will issue warnings and will discipline ANY PERSON who breaks any of the Environmental Rules. Repeated and continued breaking of the Rules will result in a disciplinary inquiry and which may result in that person being asked to leave the Scheme permanently.

What if I do not understand the ENVIRONMENTAL RULES?

ASK FOR ADVICE, if any member of the WORKFORCE does not understand, or does not know how to keep any of the Environmental Rules, that person must seek advice from the SCHEME SUPERVISOR. The PERSON that does not understand must keep asking until he/she is able to keep to all the Environmental Rules.

Safety and Security

1. Only enter and exit roadways and construction areas at demarcated entrances.

2. Wear protective clothing and equipment as per signboards at the Scheme and according to instructions from your SCHEME SUPERVISOR.
3. Report to your SCHEME SUPERVISOR if you see a stranger or unauthorised person in the construction area.
4. Never enter any area that is out of bounds or that is demarcated as dangerous without permission of your SCHEME SUPERVISOR.
5. Never climb over any fence or enter private property without permission of the landowner or your SCHEME SUPERVISOR.
6. Do not remove any vehicle, machinery, equipment, or any other object from the construction site without the permission of your SCHEME SUPERVISOR.
7. Keep clear of blasting sites. Follow the instructions of your SCHEME SUPERVISOR.
8. Never enter or work in the Scheme while under the influence of alcohol or other intoxicating substances.
9. All staff should know the emergency procedures in case of accidents.

Waste Disposal

10. Learn the difference between different types of waste, namely:
 - general waste, and
 - hazardous waste.

Containers will be provided for different types of wastes.

General Waste includes waste paper, plastic, cardboard, harmless organic (e.g. Vegetables) and domestic waste

Hazardous Waste includes objects, liquids or gases that are potentially dangerous or harmful to any person or the environment. Sewage, fuel, tyres, diesel, oils, hydraulic and brake fluid, paints, solvents, acids, soaps and detergents, resins, old batteries, etc. are all potentially hazardous.

11. Learn how to identify the containers for the different types of wastes. Only throw general waste into containers, bins or drums provided for general waste.
12. Recycle drums, pallets and other containers.

13. Never bury or burn any waste on-site, all waste is to be disposed of in allocated refuse disposal containers, bins or bags.
14. Never overfill any waste container. Inform your SCHEME SUPERVISOR if you notice a container that is nearly full.
15. Do not litter.
16. Do not bury litter or rubbish in the backfilled trench.

Plants and Animals

17. **Do not ever pick any plants, or catch any animal.** People caught with plants or animals in their possession will be handed to the authorities for prosecution.
18. Never feed, tease, play with, or set devices to trap any animal or livestock. Wild animals are not to be domesticated.
19. Keep off the rock outcrops unless given specific permission by the SCHEME SUPERVISOR to be there.
20. Never cut down any tree or branches for firewood.
21. Never leave rubbish or food scraps or bones where it will attract animals, birds, or insects.
22. Rubbish must be thrown into allocated waste disposal bins/bags.
23. Always close the gates behind you.

Preventing Pollution

24. Only work with hazardous materials in bunded areas.
25. Never discard any hazardous substances such as fuel, oil, paint, solvent, etc. into stream channels or onto the ground. Never allow any hazardous substances to soak into the soil.
26. Clean up spills immediately.
27. Immediately report to your SCHEME SUPERVISOR when you spill, or notice any hazardous substance overflow, leak or drip or spill on-site, into the streambeds or along the road.
28. Immediately report to your SCHEME SUPERVISOR when you notice any container, which holds hazardous substances overflow, leak or drip. Spillage must be prevented.
29. Only wash vehicles, equipment and machinery, containers and other surfaces at work site areas designated by your SCHEME SUPERVISOR.
30. Do not change the oil on uncovered surfaces.

31. If you are not sure how to transport, store, use, or get rid of any hazardous substances ask your SCHEME SUPERVISOR for advice.

Health

32. Drink lots of clean water every day.
33. Use toilets that have been provided.
34. Take the necessary precautions to avoid contracting HIV / AIDS. Condoms are available at most Clinics.
35. Inform your SCHEME SUPERVISOR when you are sick.
36. Do not work with any machinery when you are sick.
37. If you are working in malaria areas, you must take the necessary precautions.

Dust Control

38. Do not make any new roads or clear any vegetation unless instructed to do so by your SCHEME SUPERVISOR.
39. Keep to established tracks and pathways.
40. Keep within demarcated work areas.

Saving Water

41. Always use as little water as possible. Reduce, re-use and recycle water.
42. Never leave taps or hose pipes running. Close all taps after use.
43. Report any dripping or leaking taps and pipes to your SCHEME SUPERVISOR.

Working Hours

44. You may only work on weekends and after hours with the consent of the SCHEME SUPERVISOR.

Archaeological and Cultural Objects

45. If you find any archaeological, cultural, historical or pre-historical object on the construction site you must immediately notify your contractor.
46. Never remove, destroy, or disturb any cultural, historical, or prehistorical object on site.

Cultural and Historical Objects include old buildings, graves or burial sites, milestones, old coins, beads, pottery, and military objects.

Pre-Historical objects include fossils and old bones, old human skeletal remains, pieces of pottery and old tools and implements.

Sensible Driving

47. Tracks and roads should be kept to a minimum. Where possible follow existing roads.
48. No off-road driving is allowed.
49. Never drive any vehicle without a valid licence for that vehicle class and do not drive any vehicle that is not road-worthy.
50. Never drive any vehicle when under the influence of alcohol.
51. **Always** keep your headlights on when driving on dusty roads.
52. Keep to the roads as specified by your SCHEME SUPERVISOR. Vehicles may only be driven on demarcated roads. Drivers should always use three-point turns, "U-turns" are not allowed. Do not cut corners.
53. Do not drive on rocky outcrops.

Noise

54. Keep noise levels as low as possible.
55. Do not operate noisy equipment outside normal working hours.

Fire Control

56. Do not make open fires, use a drum or tin and do not collect any vegetation to burn.

57. Do not smoke or make fires near refuelling depots or any other area where fuel, oil, solvents, or paints are used or stored. Fireplaces should be at a safe distance from fuel and explosive storage sites as well as vehicle parking sites.
58. Cigarette butts should always be thrown in allocated refuse bins. Make sure that the cigarette butt is out before throwing it into the bin.
59. Immediately notify your SCHEME SUPERVISOR if you see an unsupervised fire at the campsite or construction site.

Dealing with Environmental Complaints

60. If you have any complaints about dangerous working conditions or potential pollution to the environment, talk to your SCHEME SUPERVISOR.
61. If any person complains to you about noise, lights, littering, pollution, or any harmful or dangerous condition, immediately report this to your SCHEME SUPERVISOR.

For any enquiries, please call

Jolanda Kamburona

Tell: 061-71 2105

Cell: 081 144 1528

or

Fillemon Aupokolo

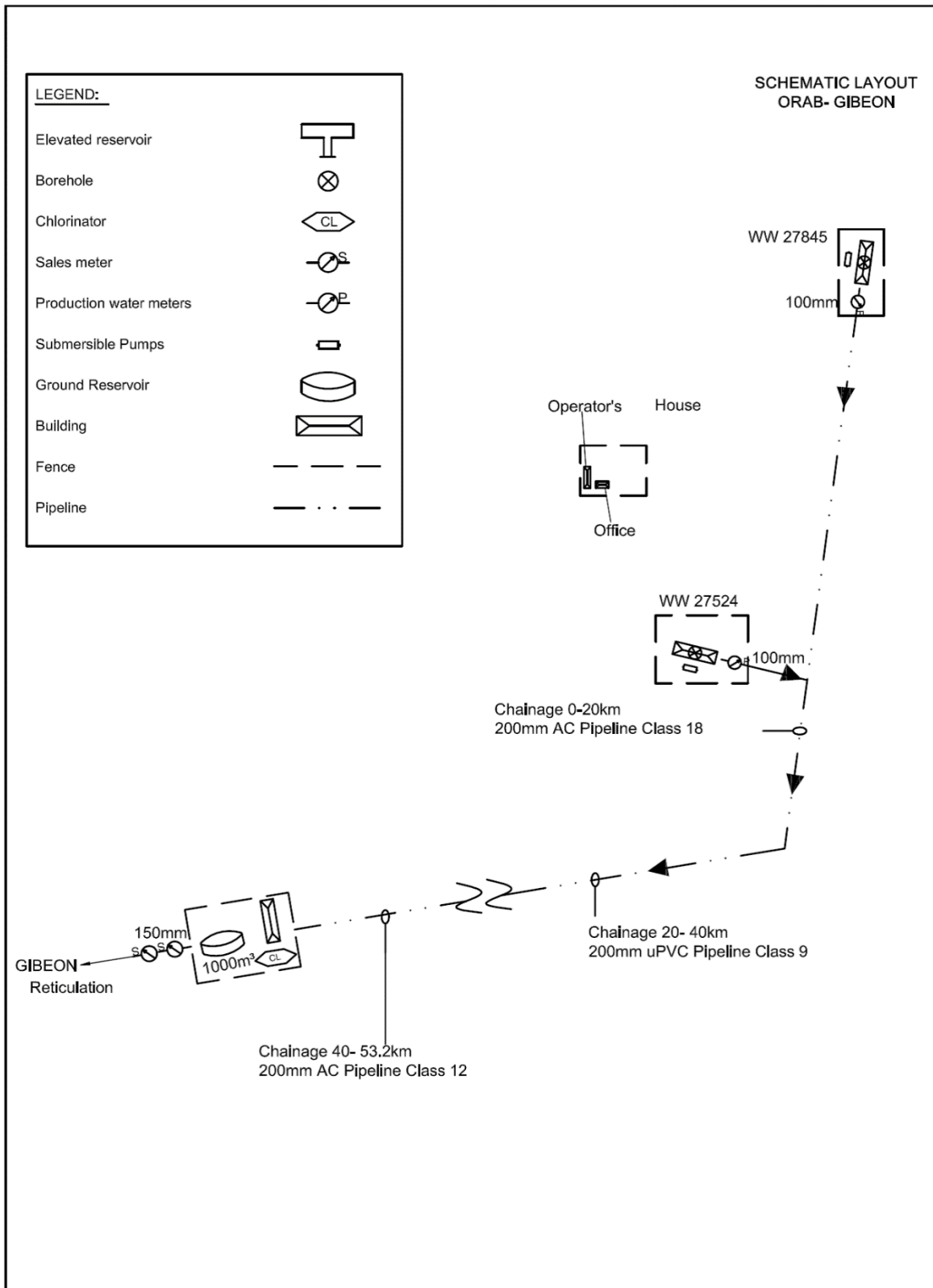
Tell: 061-71 2095

Cell: 081 325 3301

13. REFERENCES

1. Christelis, G., and Struckmeier, W. (Eds.). 2011. Groundwater in Namibia an explanation to the Hydrogeological Map. Windhoek
2. Department of Water Affairs and Forestry. 2005. Environmental Best Practice Specifications: Construction. Pretoria.
3. Department of Water Affairs and Forestry. 2005. Environmental Best Practice Specifications: Site Management and Rehabilitation. Pretoria.
4. Mendelsohn, J., Jarvis, A., Roberts, C. & Robertson, T. 2002. Atlas of Namibia: a portrait of the land and its people. Ministry of Environment & Tourism / David Philip: Cape Town.
5. Mendelsohn, J., Jarvis, A., Roberts, C., & Robertson, T. 2009. Atlas of Namibia: A portrait of the land and its people. Cape Town, South Africa: Sunbird Publishers (PTY).

ANNEXURE 1: GIBEON SCHEMATIC LAYOUT



GRIEVANCE PROCEDURE

All grievances should be submitted through the completion of the grievance registration form as presented below and submitted to the Scheme Supervisor during the construction phase and to the Scheme Superintendent during the operation and maintenance phase.

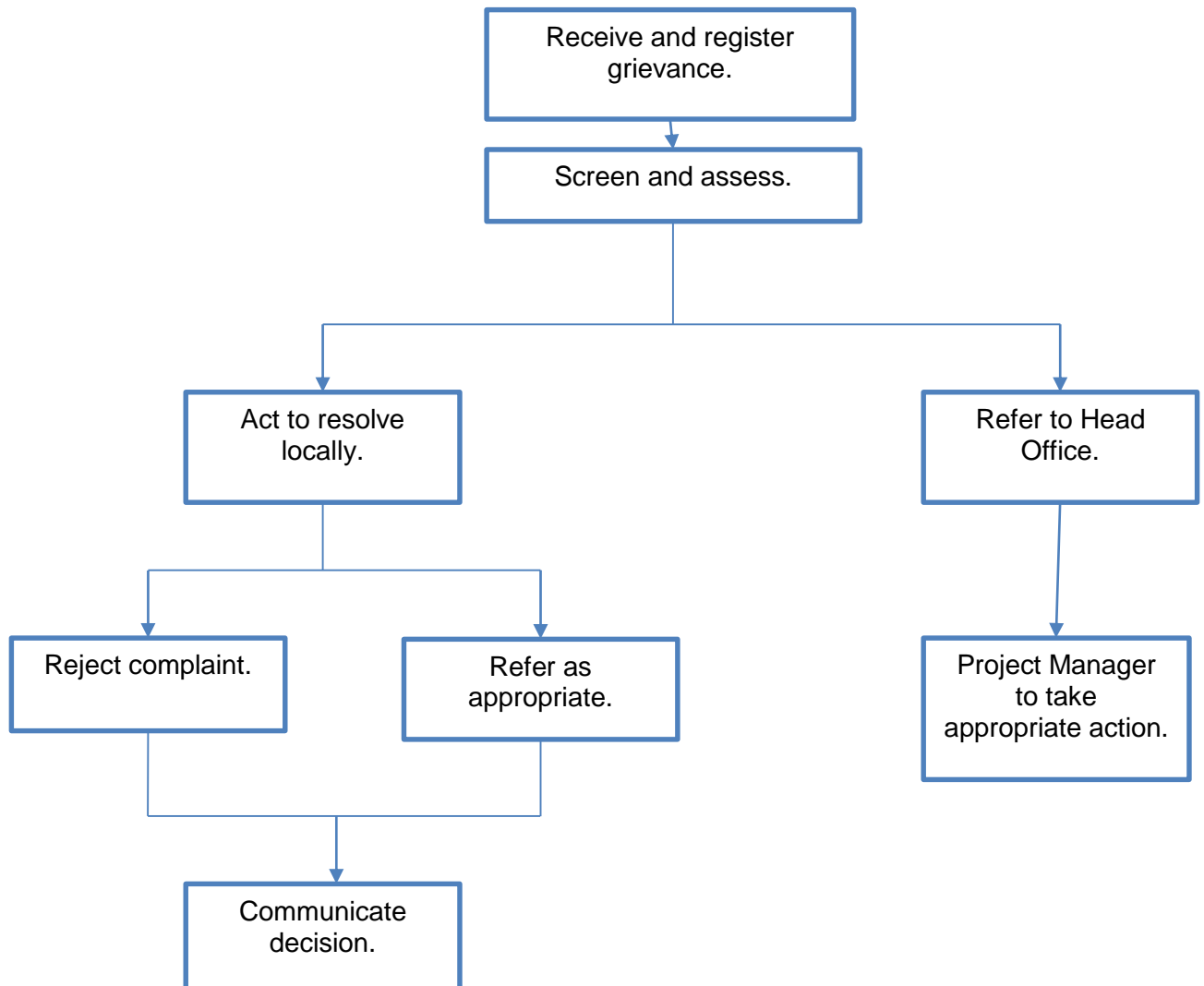


Figure 3: Grievance response procedure

Upon receipt of the registered grievance forms, the Scheme Supervisor shall screen and assess to either act to solve the grievance locally or refer it to head office. If the grievance is referred to the head office, the line manager should decide. If the grievance is to be solved locally, it should either be rejected or handled appropriately of which the decision should be communicated to the aggrieved person.

GRIEVANCE REGISTRATION

Grievance Registration	
Case No:	Date:
Name of complainant:	Cell no:
	Email address:
Details of grievance: (Date, location, persons involved, frequency of occurrence, effects of ensuing situation, etc)	
Name of person recording grievance:	Cell number:
Proposed date of response:	
Signature of recording person:	Signature of complainant:
Date of redress:	