DORDABIS WATER SUPPLY SCHEME

ENVIRONMENTAL MANAGEMENT PLAN

Date:
June 2020

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LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CoC	Code of Conduct
DEA	Directorate of Environmental Affairs
EMA	Environmental Management Act
EMP	Environmental Management Plan
HIV	Human Immunodeficiency Virus
I&AP	Interested and Affected Parties
MET	Ministry of Environment and Tourism
NEM	NamWater Environmental Manager
MSDS	Material Safety Data Sheet
NWQG	Namibian Water Quality Guidelines
NWQS	Namibian Water Quality Standards
STI's	Sexually Transmitted Infections

1. PURPOSE OF THE EMP

This Environmental Management Plan (EMP) has been compiled and updated for the management of potential environmental impacts during the operation, and decommissioning phases of the existing Dordabis Water Supply Scheme. Best practice is proposed for the generic issues of construction management and supervision as well as the on-going management and operation of the water supply scheme.

In terms of the Environmental Assessment Policy of 1994 and the Environmental Management (Act No 7 of 2007) (EMA), the activities required for the construction of the proposed project requires authorization from the Directorate of Environmental Affairs at the Ministry of Environmental and Tourism (MET: DEA).

An Environmental Clearance Certificate (ECC) was originally issued in 2017 and this EMP serves as an application for the renewal of the ECC. The EMP is for an existing scheme and it is therefore only for the operation and maintenance of the scheme.

2. INTRODUCTION

Dordabis is an unproclaimed settlement about 90 km southeast of Windhoek with an estimated population of 600 people. It is supplied with water from the Dordabis Water Scheme. There are two customers of NamWater at Dordabis: The Department of Police and the Evangelical Lutheran Church.

The EMP is for an existing scheme and it is therefore only for the operation and maintenance of the scheme. The location of Dordabis is depicted in **Figure 1**.

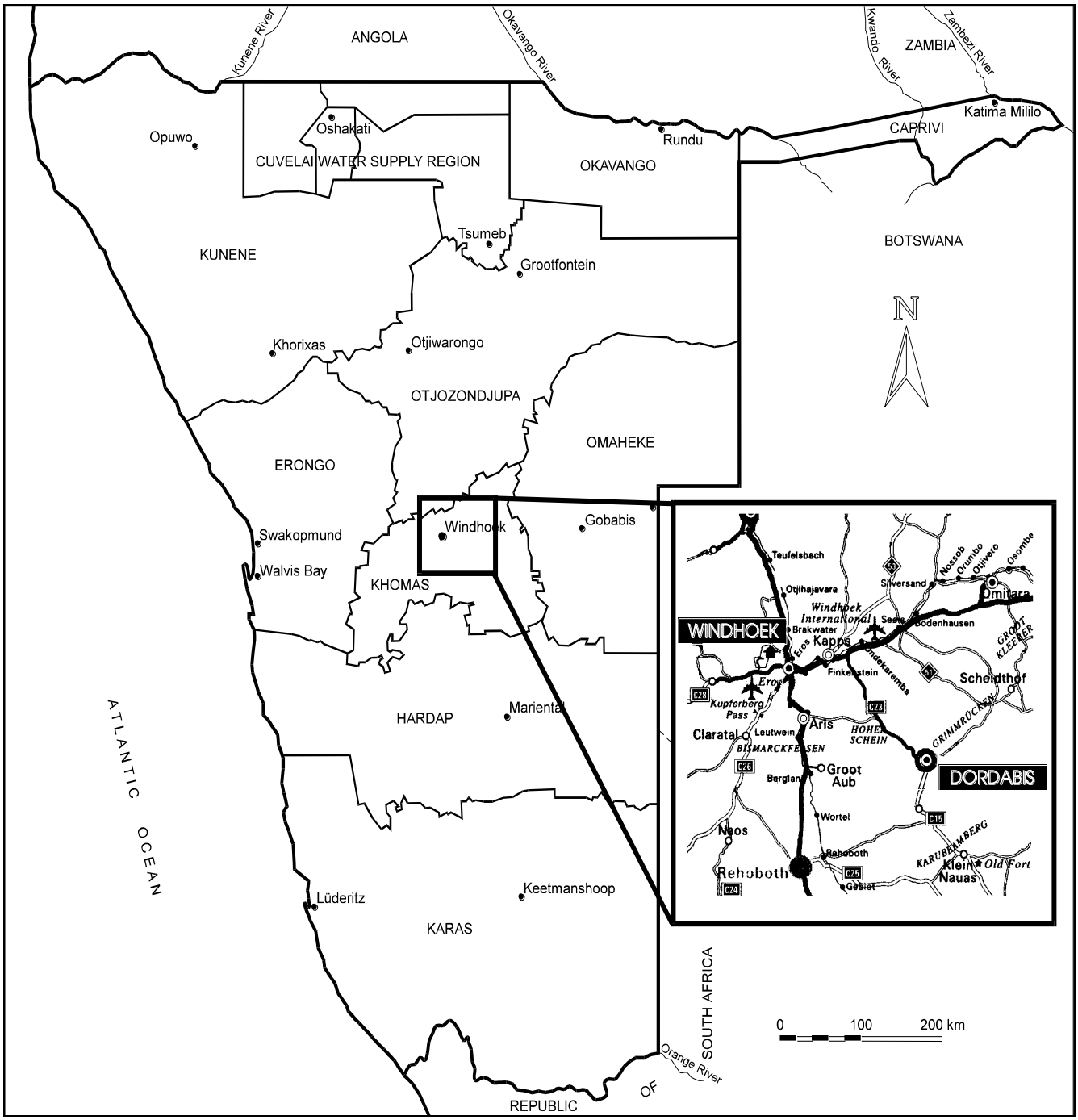

Figure 1: Dordabis Location Map

3. DORDABIS INFRASTRUCTURE

3.1 Water Source

There are four NamWater boreholes at Dordabis of which three, WW 4586, WW 35067 and WW 16821 are operational. The fourth borehole, WW 35068, is a standby borehole and is currently not installed. Borehole WW 35067, originally drilled as a standby borehole.

A schematic layout of the existing infrastructure is indicated in **Figure 2** below.

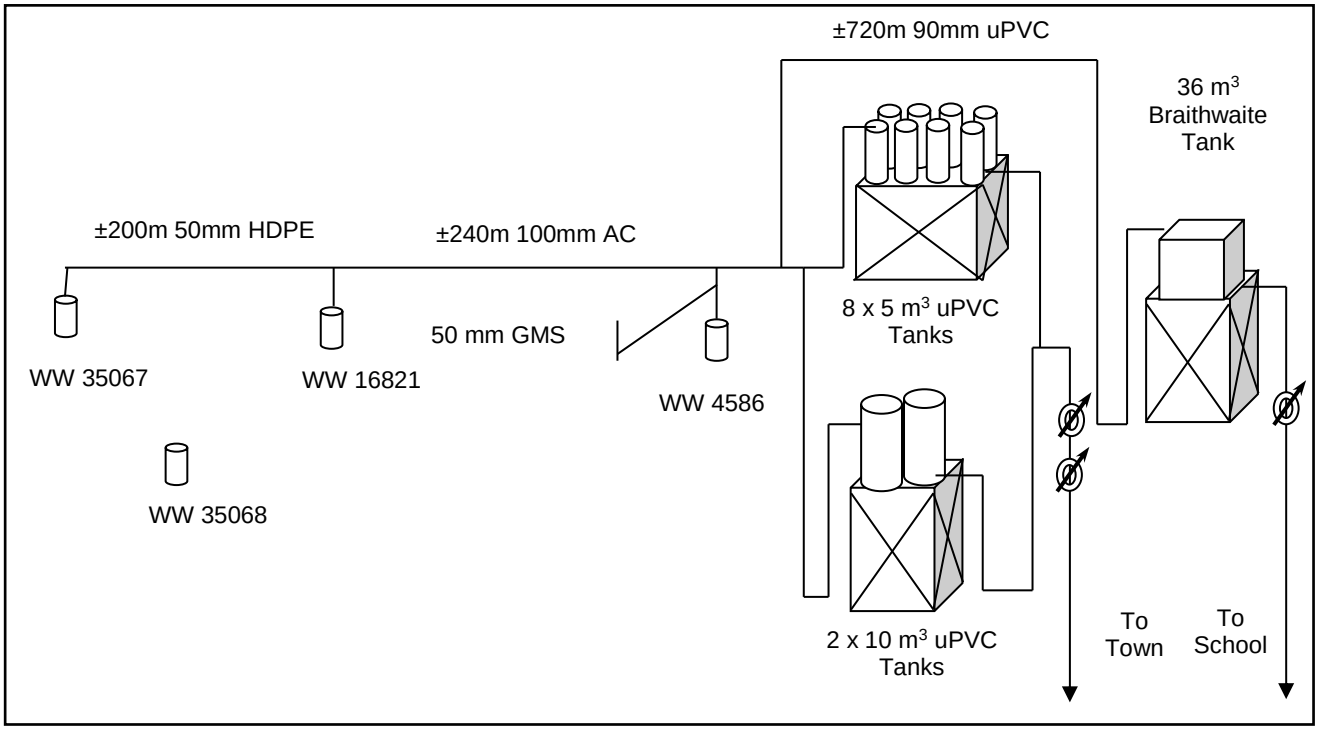

Figure 2: Dordabis Schematic Layout

3.2 Water Quality and Disinfection

The quality of the water from the three boreholes along the river is classified as Group A water, while the water of borehole WW 4586 can be classified as Group B. Borehole WW 4586 produces water with nitrates (11mg/l) and total hardness (377 mg/l) which exceeds the limits of Group A quality water.

Chlorination is done by means of a 'Duration' floating chlorine dispenser put into the inlet tank of the 5-m3 tanks. The seven other tanks are filled from this tank to ensure that all the water gets chlorinated before distribution. The water of the two 10 m^3 tanks does not get chlorinated in the tanks, but the water is mixed with the water from the 5 m^3 tanks before the water is distributed. The chlorine tablets of the dispensers have to be replaced every ±11 days.

3.3 Pipe Work

There is a 200 m long, 50mm diameter HDPE pipeline laid from borehole WW 35067 to borehole WW 16821 where it is then connected to a 240 m long, 100 mm diameter AC class C pipeline from WW 16821 to the NamWater premises. A 50 mm diameter GMS pipe connects WW 4586 to the pipeline which is then taken into the elevated reservoirs. Alternatively, the water can be directed into a 720 m long, 90 mm diameter uPVC class 9 pipeline to the elevated reservoir situated on the school grounds.

At a velocity of 1,0 m/s, the capacity of the pipeline from WW 35067 to WW 16821, and from WW 16821 to the NamWater terrain would be 28 m^3/hour. For a 10 hour, pumping day a total delivery of 280 m^3 could be obtained. At a flow with a velocity of 1,0 m/s, the capacity of the pipeline from the NamWater terrain to the school would be 22,9 m^3/hour. For a 10 hour, pumping day a total delivery of 230 m^3/day could be obtained.

3.4 Reservoirs

There are two elevated reservoirs situated on the NamWater premises with another elevated reservoir located on the school grounds. The older reservoir on the NamWater terrain consists of eight 5-m3 polyethylene tanks on a 10 m high stand while the newer reservoir has two 10 m^3 polyethylene tanks on a stand of similar height. The tops of the two sets of tanks are not on the same level and the total effective storage capacity is thus less than their combined theoretical capacity of 60 m^3.

The two reservoirs on the NamWater terrain supply the settlement with water, while the third reservoir is of the Braithwaite type (capacity 36 m^3) and supplies the school and hostel.

3.5 Power Supply and Control System

Power for the electrical boreholes used to be supplied by two diesel-driven generators, but the replacement of the generators by NamPower-supplied electricity has been done.

With the recent electrification of the scheme, the control of the boreholes has also been upgraded so that all the boreholes are currently remote-controlled by Programmable Logic Controller (PLC).

3.6 Scheme Processes/Operation

There is a fulltime NamWater scheme operator, who does checks on a daily basis whether all the systems are functional. The scheme has been electrified and automated with timer switches.

3.7 Maintenance

Maintenance is done by a permanent NamWater team.

3.8 Pumps

All motors bearings should be lubricated with a high-temperature lithium-based grease after 3000 hours.

If a pump/s were out of operation for six months, lubrication is required before service commence on all motor bearings.

3.9 Air Valves

The valves must be opened monthly to be descaled and cleaned to ensure effective operation. The service intervals will depend on the severity of the conditions.

3.10 Pressure Gauges and Transducers

The gauge cocks must be turned monthly to bleed-off air and ensure accurate readings. Turning prevents scale accumulation which prevents the gauge cock from functioning. The operational or service intervals will depend on the severity of the conditions.

3.11 Reservoirs

The reservoirs should be checked for leaks and other damages on a monthly basis. If leaks are detected, it should be fixed immediately.

3.12 Pipe Breaks/leaks

Monthly monitor of pipes should be done to avoid wastage of water in an event a major pipe break. The pipeline corridor for maintenance work is 10 m by 5 m.

4. BRIEF DESCRIPTION OF THE RECEIVING ENVIRONMENT

The baseline description provided below focuses on the receiving environment:

4.1 Climate

Most of the rain in the area falls as thundershowers in the summer months, from October to March. Dordabis has an extreme climate most times of the year with high temperatures especially during the rainy season and low temperature during the dry winter season.

3.1.1 Precipitation

Rainfall is highly seasonal, occurring in the wetter summer months, with no rainfall of any significance falling in the cooler, winter months, typically between May and September. The mean annual precipitation between 300 mm and 500 mm and is extremely variable both spatially and in time (Mendelsohn, 2009).

3.1.2 Temperature

The area receives between 150 and 250 mm of rain per annum. Potential evaporation is as high as 3 800 mm in the south-eastern part of the basin, and in normal years little or no local runoff is generated (Weismiller, *et al*., 2012).

4.2 Geo-Hydrology

The settlement on the farm Dordabis No.98 is located east of the Skaap River on an extensive flood plain covered by alluvium. According to the borehole completion reports, the alluvium is about 5 m thick, at depth consisting of calcareous sand, calcrete and gravel.

Locally the flood plain is underlain by fractured and weathered quartzite of the Kamtsas Formation (Nossib Group) belonging to the Damara Sequence. Prominent ridges and isolated hills to the north and the east of the settlement consist of various rocks of the Nossib Group, while older rocks of the Marienhof Formation of the Rehoboth Sequence are found to the south of the settlement. Significant north-east striking faults have been identified on the farm Dordabis.

Existing geohydrological data indicate that boreholes with sustainable yields of 5 m^3/h have been drilled on the farm Dordabis No.98. In general, the waterstrikes have been recorded at depths between 14 m and 24 m and the fractured Kamtsas quartzite has been identified as the main water-bearing formation. Locally the rest water levels vary between 11 m and 16 m below surface. The boreholes of the Dordabis WSS depend on the annual floods in the Skaap River to secure the sustainable water supply to the settlement.

The aquifer at Dordabis is a secondary aquifer and the capacity of the existing production boreholes is regarded as the maximum capacity of the aquifer.

4.3 Natural Flora

Dordabis is found within the Highland Savannah and the Camel Thorn Savannah. The Highland Savannah area, which covers most of the Khomas region, consists mainly of acacia thorn trees, such as the *Acacia karoo*, *A. mellifera*, *A. erubescens* and *A. hereroensis*. The other species which can be found in this area include *Combretum apiculatum* and *Ziziphus mucronata*. The

vegetation comprises bushes, shrubs and good grass cover in parts. Towards the west, the vegetation becomes sparser and the trees do not grow to a great height. The Camel Thorn Savannah consists mainly of *Acacia erioloba* (Camel Thorn tree), which dominates the vegetation in the eastern and south-eastern parts of the region (Aurecon, 2014).

4.4 Fauna

Dordabis area hosts a variety of large to small fauna, ranging from Kudu (*Tragelaphus strepsiceros*), springbok (*Antidorcas marsupialis*), gemsbok (*Oryx gazella*), Damara dik-diks (*Madoqua kirkii*), and black-faced impala (*Aepyceros melampus petersi*), leopard (*Panthera pardus*), cheetah (*Acinonyx jubatus*), bat-eared fox (*Otocyon megalotis*) and Cape fox (*Vulpes chama*). Mammals include springbok, kudu, eland, gemsbok, blue wildebeest, Hartmann's mountain zebra (Equus zebra hartmannae), leopard (Panthera pardus) and klipspringer (Oreotragus oreotragus).The bird species found in the area include Rüppell's parrot (*Poicephalus rueppellii*), white-tailed shrike (*Lanioturdus torquatus*) and Monteiro's hornbill ((Tockus monteiri) (Simmons et al., 1998).

5. RESPONSIBLE PARTIES

NamWater's Environmental Manager is primarily responsible for the implementation of the EMP during the operational and maintenance phases.

5.1 NamWater

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 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.

NamWater shall ensure that all employees attend an Environmental, Awareness Training Course. This course shall be structured to ensure that attendees:

- Become familiar with the environmental controls contained in the EMP;
- Are made aware of the need to conserve water and minimise waste;
- Are made aware of NamWater's Code of Conduct;
- Are aware that a copy of the EMP is readily available at the plant and that all staff are aware of the location and have access to the document;
- Are informed that employee information posters, outlining the environmental "do's" and "don'ts" (as per the environmental awareness training course) will be placed at prominent locations throughout the site.

6. ENVIRONMENTAL MANAGEMENT PLAN

An Environmental Management Plans (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.

MET 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.

7. MANAGEMENT ACTIONS

7.1 Operation and Maintenance phase of the Dordabis Water Pipeline Scheme

8.1.1 Introduction

The Operational Phase Section relates to the management and mitigation measures required to ensure that the continuation of the bulk water supply network and the maintenance of the infrastructure is operated in a manner that demonstrates responsible, precautionary environmental management.

The EMP will address specific areas of concern in terms of the long-term environmental management of the affected environment and is intended to serve as a guide to the on-going management of the water supply scheme site as well as the affected environment. The EMP will therefore aim to provide NamWater with the necessary tools to ensure that the potential impacts on the natural environment of the site during the operation of the water supply scheme are minimised. Moreover, it will aim to ensure that the infrastructure is operated and maintained according to Best Practice, in an environmentally sensitive and sustainable manner, and that the operation of the infrastructure does not result in reasonably avoidable environmental impacts.

Table 2: Operation and Maintenance Phase Management Table

Issue	Objective	Strategy	Actions	Time frame
Maintenance and emergency procedures	To ensure correct procedures are in place to avoid environmental impacts associated with maintenance activities as well as proactive intervention to avoid, and if required, to respond to emergencies	• Establish environmentally sensitive and technically sound maintenance procedures as well as reporting structures. • Compile a staff competency assessment and training programme. • Establish emergency procedures to ensure appropriate response and minimise potential risk to the biophysical and social environment.	1. Establish regular reporting procedures on maintenance 2. Undertake regular inspection and maintenance of all infrastructure to ensure in working order and to assess damaged / deficient equipment, as per the O&M Manual. 3. Review, and if necessary, revise maintenance manual. 4. Establish emergency procedures guidelines for the blockage/failure, flooding, contaminant removal and disinfection, power failure and fire of the scheme. 5. Implement the response procedures when emergency incident occurs. 6. Complete the incident report checklist in the case of emergency and keep with monitoring records for submission. 7. Undertake annual education course for all operational staff. 8. Review, and if necessary revise emergency manual.	Bi-monthly for the lifespan of infrastructure as per the maintenance manual. Bi-annually for lifespan of works. When emergency incident occurs. Emergency incident Annually for lifespan of operation. Annually for lifespan of operation Annually for lifespan of operation

7.2 Maintenance Procedures

The optimal operation and effective maintenance of all the scheme components is important in protecting the environment and ensuring that resources are not wasted and environmental incidents arising out of equipment or infrastructure failures, are avoided. Operation and Maintenance Manuals are available for the Omatako Dam - Von Bach water pipeline. The manuals provide a detailed guidance on the operation of all machinery and associated systems as well as related maintenance procedures, including maintenance schedules. Implementation of this manuals by NamWater will facilitate the proactive management of potential risks and thus result in impacts on the receiving environment being averted.

The maintenance procedures set out in the manuals, provides specific guidance in terms of the monitoring and maintenance of the scheme components. These procedures will specify the equipment item and specific component of each piece of equipment requiring checking, the scope and nature of the check that is to be carried out including detailed instructions related to the specific check, and the programme for conducting each check.

7.3 Facility Management and Operations

NamWater shall ensure that sufficient budget allocations and provisions are made available to ensure that the infrastructure can be adequately operated and maintained. NamWater must also attend to damage to the scheme components resulting in water loss as a matter of high priority.

7.4 Routine Maintenance and Repairs

The condition of the infrastructure shall be inspected routinely and a maintenance list compiled. Identified, preventative maintenance issues shall be undertaken as soon as possible. Any wastes arising from the repair and maintenance work must be removed and disposed-off at a designated waste deposal site as part of the operation.

7.5 Environmental Awareness

Instilling a sense of environmental awareness and consideration in all employees, but especially those involved with the scheme operations is vital to the overall success of any environmental management plan. It is therefore recommended that a general environmental awareness course for the Scheme Staff Members, who may be required to carry out duties on the scheme, be undertaken.

7.6 Waste and Pollution Management

7.6.1 Waste and Pollution Prevention

To prevent the improper disposal of waste and to prevent pollution, the following management actions shall be enforced:

- 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.
- No littering will be allowed. The plant area 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.

- Hazardous Substances include: sewerage, fuels, lubrication oils, hydraulic and brake fluid, solvents, paints, anticorrosives, insecticides and pesticides, chemicals, acids etc. It should be disposed of at designated hazardous disposal sites.
- Contaminated soil should be stored in drums and taken to the nearest appropriate waste dumpsite.
- Do not change oil on uncovered ground. Drip trays will be used to catch oil when vehicles are repaired in the field.
- Used oil and hydraulic fluids will not be discarded on the soil or buried. It will be removed from site and taken back to an appropriate dump.
- In the event of a hazardous spill:
  - ✓ Immediately implement actions to stop or reduce the spill.
  - ✓ Contain the spill.
  - ✓ Arrange implementation of the necessary clean-up procedures.
  - ✓ Collect contaminated soil, water and other materials and dispose it at an appropriate waste dumpsite.
- Used solvents and grease should be stored in drums or other suitable containers. It should be sealed and recycled or disposed at an appropriate disposal site.
- Hazardous waste should not be burnt.
- Bunding, concrete slabs and/or other protective measures should be installed where hazardous materials are handled.
- Ensure that the staff are informed and have information pertaining to the management of spills or ingestion.

7.6.2 Hazardous Materials

Where hazardous materials are required for repair and maintenance work (including fuels and oils), care will be taken to ensure that a competent individual is appointed to enforce the responsible use of such materials. The operational staff or maintenance teams shall carry a copy of the relevant Material Safety Data Sheet (MSDS) whenever using such materials. The Scheme Supervisor shall ensure that persons working with hazardous materials have been trained in the handling of such substances, as well as in emergency procedures to be followed in the event of an accidental spillage or medical emergency. Maintenance teams shall also carry a spill kit containing the appropriate neutralizing chemicals, absorbent materials and other relevant equipment required to undertake a clean-up of any spill that may occur.

7.6.3 Noise Management

During maintenance operations, all silencing mechanisms on all equipment must be in a good state of repair. Except for in emergency situations, no amplified sound may be broadcast. All routine maintenance shall be restricted to daylight hours.

7.7 Health and Safety

To minimise the risk of HIV infection and the increase of STI's and the occurrence injuries the following management actions shall be enforced:

- Provide an AIDS awareness programme to all the staff.

- 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 Scheme.
- Establish an emergency rescue system for evacuation of serious injured people.
- Emergency procedures for accidents should be communicated to all employees.
- 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 refuelling sites. Staff should be trained to handle such equipment.
- Nobody is allowed to dispose a burning or smouldering 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.
- Work areas, such as these for the maintenance of equipment, must be on concrete slabs.
- Explosives should be stored according to the prescribed regulations.

8. SITE CLOSURE AND REHABILITATION

Rehabilitation is the process of returning the land in a given area that has been disturbed by construction and earthworks to some degree of its former state, or an otherwise determined 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 reservoir construction project, could be mitigated and restored to an acceptable level. Poorly rehabilitated construction areas provide a difficult legacy issue for governments, communities and companies, and ultimately tarnish the reputation of operators as a whole.

Objectives of proper site closure and rehabilitation include the following:

- Reduction or elimination of the need for a long-term management program to control and minimise the long-term environmental impacts;
- Clean-up, treatment or restoration of contaminated areas (e.g. soils contaminated by oil or fuel spills, concrete spills, etc.). Excavation of contaminated material and disposal thereof in an acceptable manner.

Rehabilitation measures to implement:

a. A site inspection will be held quarterly by the scheme supervisor after every maintenance work during operation of the scheme. Rehabilitation will be done to the satisfaction of the ENV section and MET.

b. Frequent inspections of the scheme and effective follow-up procedures, to prevent minor defects from becoming major repair jobs.

c. Make sure all soil polluted during maintenance work is properly stored in drums and removed to an appropriate waste dump.

d. Make sure all windblown litter is removed once maintenance has seized.

e. Make sure that all potential hazards (i.e. the sewerage pit) are properly closed and left in a safe and neat position.

Rehabilitation will be completed when the above have be achieved.

9. 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 enquiry 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.

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

<u>Hazardous Waste</u> 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 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 backfill trench.

Plants and Animals

21. **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.
22. Never feed, tease, play with, or set devices to trap any animal or livestock. Wild animals are not to be domesticated.
23. Keep off the rock outcrops unless given specific permission by the SCHEME SUPERVISOR to be there.
24. Never cut down any tree or branches for firewood.
25. Never leave rubbish or food scraps or bones where it will attract animals, birds, or insects.
26. Rubbish must be thrown into allocated waste disposal bins/bags.
27. Always close the gates behind you.

Preventing Pollution

28. Only work with hazardous materials in bunded areas.
29. 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.
30. Clean up spills immediately.
31. 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.
32. Immediately report to your SCHEME SUPERVISOR when you notice any container, which holds hazardous substances overflow, leak or drip. Spillage must be prevented.
33. Only wash vehicles, equipment and machinery, containers and other surfaces at work site areas designated by your SCHEME SUPERVISOR.
34. Do not change oil on uncovered surfaces.
35. If you are not sure how to transport, store, use, or get rid of any hazardous substances ask your SCHEME SUPERVISOR for advice.

Health

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

Dust Control

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

Saving Water

47. Always use as little water as possible. Reduce, re-use and recycle water.
48. Never leave taps or hose pipes running. Close all taps after use.

49. Report any dripping or leaking taps and pipes to your SCHEME SUPERVISOR.

Working Hours

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

Archaeological and Cultural Objects

52. If you find any archaeological, cultural, historical or pre-historical object on the construction site you must immediately notify your SCHEME SUPERVISOR.
53. Never remove, destroy, or disturb any cultural, historical, or pre- historical object on site.

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

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

Sensible Driving

54. Tracks and roads should be kept to a minimum. Where possible follow existing roads.
55. No off-road driving is allowed.
56. Never drive any vehicle without a valid licence for that vehicle class and do not drive any vehicle that is not road-worthy.
57. Never drive any vehicle when under the influence of alcohol.
58. **Always** keep your headlights on when driving on dusty roads.
59. Keep to the roads as specified by your SCHEME SUPERVISOR. Vehicles may only be driven on demarcated construction roads. Drivers should always use three point turns, “u-turns” are not allowed. Do not cut corners.
60. Do not drive on rocky outcrops.

Noise

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

Fire Control

63. Do not make open fires, use a drum or tin and do not collect any vegetation to burn.
64. 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.
65. Cigarette butts should always be thrown in allocated refuse bins. Make sure that the cigarette butt is out before throwing it into the bin.
66. Immediately notify your SCHEME SUPERVISOR if you see an unsupervised fire at the campsite or construction site.

Dealing with Environmental Complaints

67. If you have any complaint about dangerous working conditions or potential pollution to the environment, talk to your SCHEME SUPERVISOR.

68. If any person complains to you about noise, lights, littering, pollution, or any harmful or dangerous condition, immediately report this to your SCHEME SUPERVISOR.

NP du Plessis
Tell: 061-71 2093
Cell: 081 127 9040

OR

Jolanda Murangi
Tell: 061-71 2105
Cell: 081 144 1528

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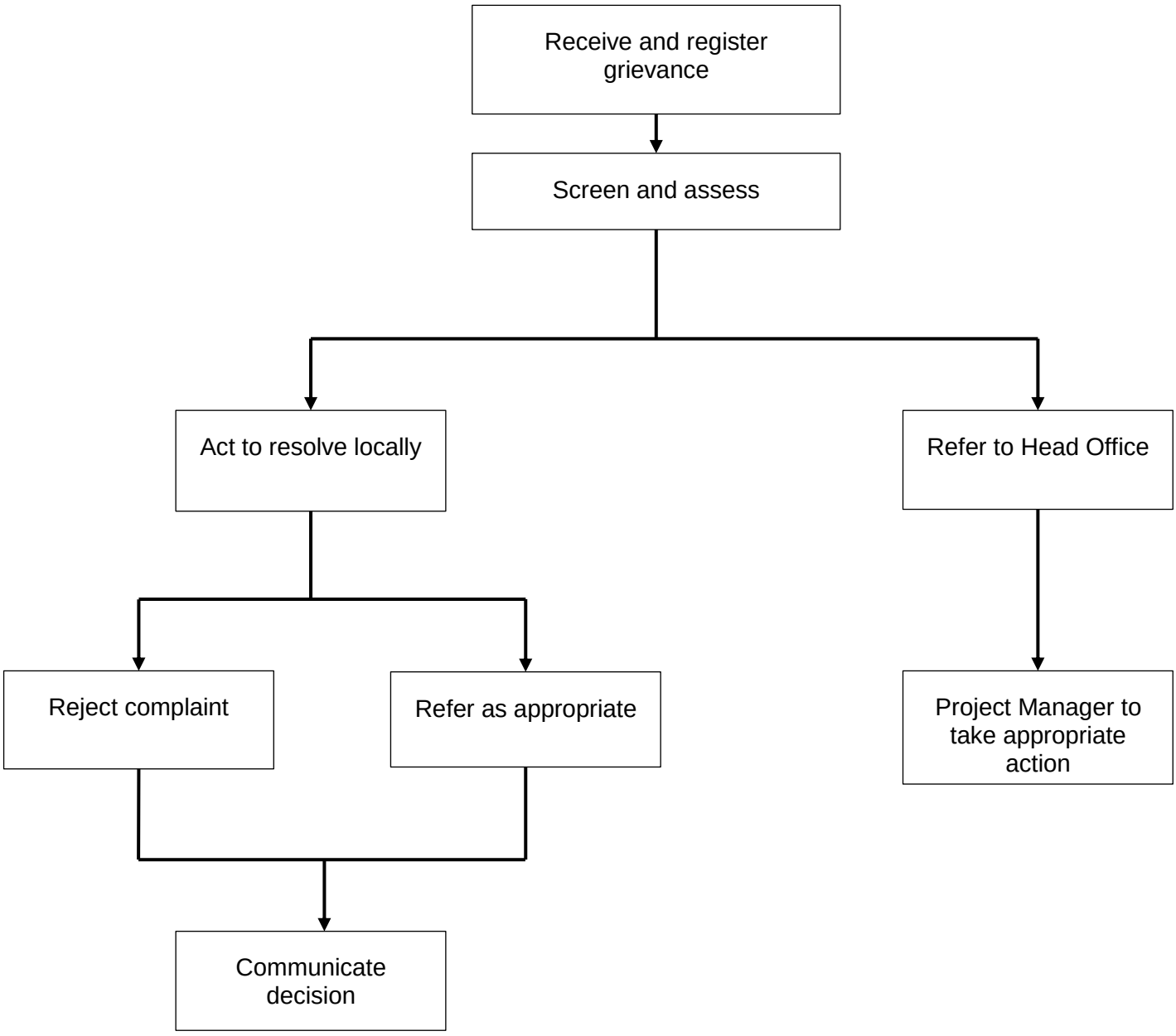
ANNEXURE 1: GRIEVANCE PROCEDURE AND REGISTRATION FORM



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:	
Decision and action:	