

ENVIRONMENTAL MANAGEMENT PLAN

Swakopmund Municipal Dumpsite



**Pwayela Trading
Enterprises**

June 2018

PWAYELA TRADING ENTERPRISES. 2018.

Project Name	Environmental Scoping Report and Environmental Management Plan for the Swakopmund Municipal Dumpsite
Client	Pwayela Trading Enterprises
Main Environmental Consultant	lina Ruben
Date of release	June 2018
Author	lina Ruben
Curriculum Vitae attached	

Contents

ABBREVIATIONS	4
1. INTRODUCTION	5
1.1. Background	5
1.2. Objectives	5
1.3. Structure of the document	6
2. TERMS OF REFERENCE	6
3. POLICY FRAMEWORK	7
4. PROJECT AND SITE DESCRIPTION	9
4.1. Project Activities	10
5. EXISTING ENVIRONMENTAL AND SOCIAL IMPACTS	11
6. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS	13
7. MITIGATION MEASURES AND RESPONSIBLE PERSONS	15
7.1. Awareness and Training	17
7.2. Monitoring	17
8. CONCLUSION AND RECOMMANDATION	18

Table of Figures

Figure 1: Surveyor General. 2014	9
Figure 2: On-site sorting of recyclable materials	10
Figure 3: Waste hip	11
Figure 4: Waste Reclaimer	11
Figure 5: Concrete sludge flowing from the dumpsite into the surrounding environment	12

ABBREVIATIONS

EMP	-	Environmental Management Plan
ECC	-	Environmental Clearance Certificate
EIA	-	Environmental Impact Assessment
EMA	-	Environmental Management Act

1. INTRODUCTION

1.1. Background

Pwayela Trading Enterprises have been appointed by the Municipality of Swakopmund as an independent environmental consultancy to undertake the Environmental Impact Assessment and to develop an Environmental Management Plan (EMP) to obtain an Environmental Clearance Certificate for the existing Municipal Dumpsite as required by the Environmental Management Act No 7 of 2007. This Environmental Management Plan (EMP) has been prepared to address the potential environmental and social impacts that could arise from the dumpsite. The dumpsite is located about 1 km outside town and has been operational for the past 10 years.

The purpose of the project is to assess the potential environmental and social impacts from the dumpsite and to minimize the uncontrolled solid waste disposal into the environment. Proper solid waste management systems of the existing dumpsite would mitigate negative environmental and social impacts. The main sections of the EMP include the overview of the legal and institutional frameworks, description of the project and the environment, impacts assessment, identification and mitigation measures and recommendations.

Municipal solid waste generated within the Swakopmund jurisdiction is disposed of in an open dumpsite. This activity can expose the public to negative health impacts and lead to the deterioration of the natural ecosystem in the surrounding area. Swakopmund has always been considered as a tourist destination, and therefore impacts on the natural landscape has significant impacts.

Effective collection, separation and disposal of waste are of extreme importance to avoid or minimize the environmental and social impacts. The existing municipal dumpsite serves a population of about 60 000 people that are permanently residing in Swakopmund as well as various businesses operating within its jurisdiction.

The Swakopmund Council is the proponent of this project and will take full responsibility for the implementation of the Environmental Management Plan (EMP), which include mitigation measures and the monitoring of the plan.

1.2. Objectives

The objectives of this document include the following:

- To describe the general conditions of the dumpsite;
- To assess the potential positive and negative impacts of the dumpsite;
- To develop appropriate mitigation measures that avoid or minimize undesirable effects resulting from the dumpsite;
- To include all components of the project activity; and

- Minimize disturbance to flora, fauna and the neighboring community.

1.3. Structure of the document

- Section 1** Provides the background to the study, terms of reference, purpose of the EMP and its objectives
- Section 2** The terms of reference of this document
- Section 3** Provides the policy framework
- Section 4** Project and site description which includes its activities
- Section 5** Existing environmental and social impacts
- Section 6** Potential environmental and social impacts
- Section 7** Mitigation measures and responsible persons
- Section 8** Conclusion and recommendations

2. TERMS OF REFERENCE

The terms of reference are based on the Environmental Management Act No 7 of 2007 and the Environmental Impact Assessment Regulations of February 2012. This document covers the following steps:

- Policy framework and guidelines in relation to the project activity.
- Detailed description of the activity.
- The public participation process and identifying the Interested and Affected Parties.
- Existing environmental conditions of the project activity.
- Potential environmental and social Impacts.
- Outlining mitigation and monitoring measures for environmental and social impacts.

3. POLICY FRAMEWORK

The Swakopmund Municipal Council must comply with the following policies and laws that regulate certain aspects related to the environment:

- **The Constitution of the Republic of Namibia (1990) Article 95 (I).**

In summary, these refer to:

- protecting Namibia's sense of place and character;
- maintaining biological diversity; and
- ensuring ecosystem functionality

The State is committed to actively promote and maintain the environmental welfare of Namibians by formulating and institutionalizing policies that can realize the above-mentioned sustainable development objectives.

- **Local Authorities Act 23 of 1992**

Section 30 (1) (c) assigns the power to a local authority "to provide, maintain and carry on services to such residents for the removal, destruction or disposal of night soil, rubbish, slop water, garden and stable litter, derelict vehicles, carcasses of dead animals and all other kinds of refuse or otherwise offensive of health matters"

- **Environmental Management Act No 7 of 2007**

In giving effect to 95 (I) of the Constitution of Namibia, general principles for sound management of the environment and natural resources in an integrated manner have been formulated. This has resulted in an Environmental Assessment and Management Act being approved by the Namibian Parliament in 2007.

The Environmental Management Act describes the various rights and obligations that pertain to citizens and the Government alike, including an environment that does not pose threats to human health, proper protection of the environment, broadened locus standi on the part of individuals and communities, and reasonable access to information regarding the state of the environment.

- **National Environmental Health Policy (2002)**

Refers to Environmental Health that comprises aspects such as human health, which includes quality of life, that are determined by physical, biological, social and psychosocial factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling and preventing

those factors in the environment that have the potential to adversely affect the health of present and future generations.

- **Environmental Impact Assessment Regulations (GN 30 in GG 4878 of 6 February 2012)**

The environmental Impact Assessment regulations is derived from the Environmental Management Act No 7 of 2007. The regulations provide a list of activities that may not be undertaken without an Environmental Clearance Certificate. Waste management, treatment, handling and disposal activities are included on the list of activities that requires an ECC.

- **Labour Act of 1992: Regulations for the Health and Safety of Employees at Work**

Recognition of the importance of a safe working environment is one of the key focuses of the Act. Occupational Health is aimed to promote and maintain the highest degree of physical, mental and social well-being of workers in all occupation. Work related hazards, such as noise, dust and gas vapor to name a few must be prevented, and managed were they cannot be prevented.

- **Draft Pollution Control and Waste Management Bill (1999)**

It provides guidelines on pollution control and waste management. The bill also provides a guideline on how to establish a system of waste planning and management.

- **Draft Waste Management Strategy of 2017**

The strategy outlines initiatives on how to strengthen institutional, organizational and the legal framework for solid waste management, and to promote or encourage a culture of waste minimization and recycling.

- **National Coastal Policy on Coastal Management for Namibia**

The policy articulates the importance of improving the quality of life of human communities who depends on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems. In addition to protecting our coastal environment, effective waste management serves as a fundamental component in achieving such objective.

4. PROJECT AND SITE DESCRIPTION

The Municipal Dumpsite is located approximately 1 km outside Swakopmund within the Dorob National Park.



APPROVED

No. A

for SURVEYOR-GENERAL

SIDES		ANGLES OF DIRECTION	CO-ORDINATES		Designation	
metres			Y	X		
Constants						
A B	100.00	285.11.40	A	+44 873.88	+68 668.11	rec1
B C	118.46	47.37. 0	B	+44 777.38	+68 694.32	rec2
C D	100.00	105.11.40	C	+44 864.88	+68 774.17	rec3
D A	118.46	227.37. 0	D	+44 961.38	+68 747.96	FENC01

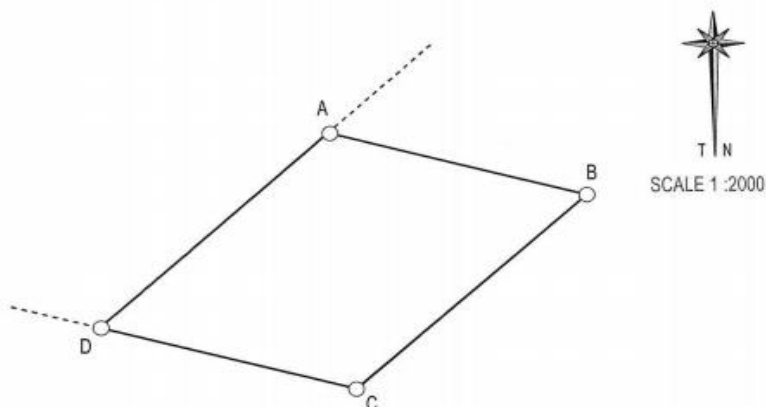


Figure 1: Surveyor General.
2014

4.1. Project Activities

About 75% of municipal waste is disposed of at the dumpsite. About 27% of the municipal waste is reclaimed for recycling. The waste disposed of at the dumpsite includes domestic waste, commercial waste, demolition waste, garden waste and non-toxic industrial waste. Hazardous and toxic wastes are not permitted to be dumped at the Swakopmund Dumpsite, therefore all hazardous waste is required to be transported to the Walvis Bay hazardous waste landfill site. The waste is disposed of daily and compacted at the end of each working day. Covering material includes incoming and existing construction waste available on site, on site excavations of surface materials and industrial waste.

The dumpsite is managed on behalf of Swakopmund Municipality by an independent environmental company. The company is responsible for the following:

- Day to Day operations of the dumpsite
- Access/ Entrance Control
- Health and Safety of personnel
- Environmental Monitoring of the dumpsite

The Swakopmund dumpsite is located next to Rent-a-Drum waste recovering facility. The facility has been operational for the past 4 years, sorting waste that end up in the dumpsite and recovering recyclable materials. There are also registered waste reclaimers on-site that sort and recover recyclable materials.



Figure 2: On-site sorting of recyclable materials

Access/Entrance control is taking place on-site to prevent any unauthorized person or vehicles from entering the dumpsite.

Municipal waste trucks that collect and deposit general waste access the dumpsite from the Henties Bay bypass road, coming from either the B2 road or the C34 road.

The vehicles operate during normal working hours, which is from 7:30 to 16:30. During the festive season where there is an influx of visitors to Swakopmund the vehicles operational hours are extended accordingly.

5. EXISTING ENVIRONMENTAL AND SOCIAL IMPACTS

Existing environmental and social impacts associated with the Swakopmund Municipal Dumpsite.



The fence surrounding the dumpsite is lower than the waste pile, this result in wind blowing litter from the dumpsite into the surrounding environment.



Figure 4: Waste Reclaimer

The registered waste reclaimers operating on the dumpsite do not have appropriate personal protective clothing and equipment to operate on the dumpsite. There are no training records available indicating that the reclaimers have been trained on health and safety measures to ensure their protection from possible hazards associated with the dumpsite.



Figure 5: Concrete sludge flowing from the dumpsite into the surrounding environment

On-site environmental assessment was conducted, and the following findings were made:

- Some personnel have been working on the dumpsite for the past 4 to 5 years and have never received any training on waste management or health and safety training.
- The dumpsite does not have a weighbridge to determine the amount of waste getting dumped on the dumpsite.
- There are no records available on past environmental assessments conducted to determine the viable location of the dumpsite.
- The dump site has an area market off, where expired food products and dead animals especially dogs are dumped and buried.
- External general waste coming from uranium mines are also disposed in the Swakopmund Municipal dump site. There is no effective access control and management on external waste coming from the mines therefore the possibility of hazardous waste entering the dumpsite is very high.
- Traffic congestions can increase during peak hours of the day, especially on the B2 road.

6. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

The potential impacts included in the table below indicate the current environmental and social impacts associated with the Swakopmund Municipal dumpsite and the significance of the impacts.

Impact/Aspect/Risk	Description of the impact	Significance
Air Quality	<p>The generation of gases and dust during digging of trenches and compacting of waste.</p> <p>There is no appropriate equipment available to monitor gas emissions at the dumpsite.</p> <p>Methane gas generation contributes to the greenhouse effect.</p> <p>Exhaust gas emissions coming from vehicles operating on the dumpsite</p>	Medium
Odor Offensive odors may be generated during composting of waste.	<p>Odor produced during breakdown of waste material.</p> <p>Odor coming from the dumpsite is controlled by covering the waste with sand or building rubble.</p>	Medium
Noise pollution	<p>Resulting from vehicular activities. Noise pollution is at a minimum.</p>	Low
Loss of biodiversity	<p>Potential damage to the natural environment resulting in loss of flora and fauna. A few vegetation is found within the surrounding environment of the dumpsite.</p>	Low
Visual impacts	<p>Visual impact of discarded litter blown from the dumpsite to the surrounding environment.</p>	High
Impact on Human Health	<p>Risk to health and safety of employees and the surrounding community that may appear in the long run due to continuous exposure.</p>	High

<p>Traffic impacts</p> <p>Movement and presence of vehicles (front-end loaders, trucks) on and around the Henties Bypass road, B2 road and C34 road</p>	<p>Increased traffic congestion along the roads</p> <p>Risks of possible collisions with other road users. This poses a risk to personnel and road users.</p>	<p>Low</p>
<p>Hazardous waste</p>	<p>The dumpsite is currently not equipped to receive hazardous waste.</p>	<p>High</p>
<p>Ground water and soil contamination</p>	<p>The dump site has no underlining to capture leachate. Leachate (dirty water) from waste can seep through and contaminate underground water and soil.</p>	<p>Medium</p>

7. MITIGATION MEASURES AND RESPONSIBLE PERSONS

The table below indicate the proposed mitigation measures to minimize and manage the impacts. Responsibility falls on the Swakopmund Municipal Council to monitor and implement the mitigation measures.

Impact	Mitigation Measure	Responsibility
Air Quality	<p>Ministry of Mines and Energy installed an air quality monitoring station at the Tamariskia sewage treatment plant to monitor air quality.</p> <p>The station is located at the following coordinates 22°39'53.23''S 14°32'15.09''E</p> <p>The Swakopmund Municipal Council is provided with monthly ambient air quality monitoring reports.</p> <p>Representatives from Council attend regular meetings organized by the Uranium Institute, and Airshed Planning Professionals.</p>	Municipality
Noise pollution	<p>Regular maintenance of machinery operating on the dump site will keep the generated noise level below the minimum</p> <p>Phasing out of old and worn out trucks.</p> <p>Awareness will be communicated to all the operators and concerned individual prior operation, so that they are aware of harmful effects of noise pollution.</p> <p>Monitoring and measurement of noise in the surrounding areas according to the law or best available standards.</p>	Site Manager and Municipality Health and Safety Officer
Impact on Human Health	<p>All personnel operating on the dump site should be provided with the proper protective clothing and equipment; regular health and safety training must be conducted.</p>	Site Manager and Municipal Health and Safety Officer

	<p>Records must be kept for all health and safety training/talks that are conducted on-site or off site for personnel.</p> <p>Regular checks should be carried out in accordance with the Occupational Health and Safety requirements</p>	
Traffic impacts	Vehicles should be scheduled to operate during day periods and not at night.	Municipal Traffic
Visual impacts (litter pollution)	Regular inspections should be carried out to identified litter.	Site Manager and Municipal Waste management foreman
Dust	<p>Equip all the workers exposed to dust with dust masks</p> <p>Minimize activities that can generate dust during windy days</p> <p>Regular inspection</p>	Site Manager and Municipal Waste management foreman
Fire Prevention and Control	<p>An emergency plan must be developed and implemented. The plan must be approved by Municipal Council.</p> <p>Ensure that there is basic fire-fighting equipment available on site as per requirement of the local Emergency Services. Ensure that all fire extinguishers are replaced on or before their expiry dates.</p> <p>Ensure that all site personnel are aware of the fire risks and how to deal with any fires that occur.</p> <p>Telephone numbers of emergency services shall be posted conspicuously in the office for use in emergency situations.</p>	Site Manager and Municipality Environmental Practitioner
Hazardous waste	<p>Keeping record of the type of waste that enters the dumpsite is essential.</p> <p>The dumpsite personnel should be trained on the type of hazardous waste</p>	Site Manager

	<p>and how to spot such waste.</p> <p>All hazardous waste should be directed to the Walvis Bay Hazardous landfill site.</p>	
--	---	--

7.1. Awareness and Training

All awareness and training activities must be carried by the site manager and the Municipal Environmental Practitioner.

- Ensure that all personnel have the appropriate level of environmental awareness and competence to ensure continued environmental due diligence and ongoing minimization of environmental harm.
- Employees will be familiar with the requirements of the EMP.
- Records must be kept of those that have completed the relevant training

7.2. Monitoring

A monitoring plan will be in place to ensure conformance with the EMP and to monitor any environmental issues and impacts which have not been accounted for in the EMP that are or could result in significant environmental impacts for which corrective action is required. The site Manager will ensure that the monitoring is carried out.

Environmental Practitioner from the Swakopmund Municipal Council will ensure compliance with the EMP and to ensure that corrective measures are implemented by the site manager if necessary.

- Daily site inspections must be conducted to ensure the environmental specifications are adhered to by the Environmental Practitioner and the site Manager.
- Written monthly report, detailing both compliance and environmental performance must be provided to the General Manager of Health Services.
- Maintain a record of major incidents as well as corrective and preventive actions taken.
- The Municipal Environmental Practitioner must conduct regular internal environmental audits to ensure environmental compliance
- The EMP will be available on-site at all times.
- All employees on-site will abide by the requirements of the EMP.

8. CONCLUSION AND RECOMMANDATION

On condition that mitigated measures are implement, as per the EMP, the project will result in impacts that should not negatively affect the environment and the Swakopmund community.

It is the responsibility of the Municipal Council to ensure that this EMP is made binding on the contractor that are appointed to manage the municipal dumpsite on its behalf, by including the EMP in the contract documentation. The contractor should be familiarized with the requirements of the EMP and ensure the site manager have the necessary skills to oversee the implementation of the EMP on a day-to-day basis.

As Swakopmund keeps expanding the Municipal Council is advised to establish another Municipal dumpsite by taking in consideration the Local town planning scheme and the Environmental Management Act No 7 of 2007.