

Sourcing and Hauling of Cobblestones for the Upgrading and Rehabilitation of the Railway Line between Kranzberg and Arandis

**Decommissioning Management Plan
(DMP)**



For :
**Twapewa Omaano Trading
Enterprises CC**

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Project Name	DECOMMISSIONING MANAGEMENT PLAN (DMP) Sourcing and Transport of Cobblestones for the Upgrading and Rehabilitation of the Railway Line Between Kranzberg and Arandis Kettlebank Area, Usakos District Erongo Region
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ABBREVIATIONS AND ACRONYMS

amsl	above mean sea level
BAT	Best Available Technology
BID	Background Information Document
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COVID-19	'CO' - Corona, 'VI'- Virus & 'D' - Disease of 2019
DMP	Decommissioning Management Plan
EC	Environmental Commissioner
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
ERC	Erongo Regional Council
GPS	Global Positioning System
GRN	Government of the Republic of Namibia
ha	Hectare
HPP	The Harambee Prosperity Plan
IAPs	Interested and Affected Parties
km/hr	Kilometer per hour
m ²	Square meters
m ³	Cubic meters
MEFT	Ministry of Environment, Forestry and Tourism
MHSS	Ministry of Health and Social Services
NAAQS	National Ambient Air Quality Standards
NHC	National Heritage Council
NO ₂	Nitrogen Dioxide
NSI	Namibia Standards Institute
PM	Particulate Matter
PPE	Personal Protective Equipment
SABS	South African Bureau of Standards
SHE	Safety, Health & Environment
SME	Small and Medium Enterprises

List of Road Numbers

B2	B2 is the route number for the national highway which starts from B1 in Okahandja to Walvis Bay via the towns of Karibib, Usakos and Swakopmund.
D1918	Is the district road number for the gravel road which starts from Henties Bay up to B2 about 24 km outside Usakos.
D1930	Is the district road number for the gravel road which branches off from D1918 to the town of Uis.

Glossary of Terms and Definitions

Aggregate:

Aggregate is defined as granular raw materials consisting of gravels, crushed stones, recycled concrete stones, building and plaster sand. Primarily, aggregates are used in the manufacturing of construction products which in turn are used widely in the built environments and road transport infrastructures.

When using a square sieve with an aperture of 4.75 mm, 90% of sand will pass through a square sieve whilst at least 90% of coarse stone will be retained by such a sieve. The coarse stones retained on the sieve will constitute aggregates.

Anthropogenic Impact:

Human impacts on the environment which include changes to the biophysical environments, ecosystems, biodiversity and natural resources caused directly or indirectly by human activities including global warming, environmental degradation, etc.

Biodiversity:

The variability among living organisms from all sources including terrestrial marine and other aquatic ecosystem and ecological complexes which they are part of

Cobblestones: Cobblestones derive their name from the word cob, meaning a rounded lump. Cobblestones are a clast of rock defined as having a particle size of 64-256 mm, larger than a pebble and smaller than a boulder. Cobblestones are building materials. In this Report, the terms aggregates, aggregate materials and or surface stones are used interchangeably and simply refer to cobblestones.

Cumulative Impact

In the context of mining, means the impacts of mining activities which in themselves may not be significant but may become significant when added to the existing and potential impacts resulting from similar or diverse activities or undertaking in the area.

Decommissioning:

The process which begins after termination or cessation of mining activities or mineral processing and ends with closure. It involves, amongst others, the removal of unwanted infrastructures, making safe of the dangerous excavations and surface restoration so as to minimise the adverse environmental impacts of mining activities remaining after cessation of operation.

Environment:

All physical, chemical and biological factors and conditions which influence an object and or organism. It is also defined as the surroundings within which human beings exist and is made up of the land, water, atmosphere, plants and animal life (micro and macro) including interrelationships between the factors and the physical or chemical conditions that influence human health and well-being

Environmental Impact:

Environmental impact is any change to the environment whether adverse or beneficial, wholly or partially, resulting from an organization activities, products or services

Environmental Management Plan (EMP):

A working document on environmental and socioeconomic mitigation measures which must be implemented by several responsible parties during all phases of a proposed development.

Reserve:

A reserve is that amount of the resource which has been quantitatively proven through drilling and other sampling methods for which the level of confidence is high.

Resource:

The extent of extractable volume is estimated with a low level of confidence, i.e. the resource is only inferred (estimated) from geological evidence and assumptions but has not been verified via drilling and other applicable sampling methods.

Mining:

In the context of aggregate is the process of extracting gravel from the in-situ resource by using mechanical means, i.e. excavators, bulldozers, wheeled loaders, etc.

Sensitive Area

A sensitive area or environment is described as an area or environment where a unique ecosystem, habitat for plant and animal life, wetlands or conservation activity exists or where there is high potential for ecotourism

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1. DECOMMISSIONING MANAGEMENT PLAN

1.1 Introduction

The purpose of this Decommissioning Management Plan (DMP) is to provide a conceptual decommissioning plan or closure plan for the cobblestone sourcing and transport project undertaken by Twapewa. According to contract terms between Unik Engineering Construction (the main contractor) and the Ministry of Works and Transport, the rehabilitation and upgrading of the railway line between Kranzberg and Arandis, has a duration of 36 months.

Since Twapewa is a subcontractor, hired to supply construction materials to the main contractor, Twapewa is expected to have delivered all the required cobblestones to the construction sites at least six months ahead of the practical completion month for the upgrading and rehabilitation.

The DMP is prepared to include site rehabilitation objectives and financial provisioning. While the sourcing and transport of cobblestones is not a mining project, the structure for the decommissioning plan has been adapted from the Namibian Mine Closure Framework (The Chamber of Mines of Namibia, 2010).

1.2 Objectives

The objectives for decommissioning and the rehabilitation plan of disturbed areas are:

- ✚ To ensure that the site is safe for both humans, livestock and wild animals.
- ✚ That any residual impacts are managed to acceptable levels and will not deteriorate over time
- ✚ That closure is achieved with minimal socio-economic upheaval.
- ✚ That the biodiversity and environment on the site are safeguarded and protected.
- ✚ To provide sufficient funds at the end of the life of the operation, to properly implement the closure plan
- ✚ to establish a self-sustaining vegetation community using appropriate indigenous native tree, shrub and grass species, and
- ✚ To ensure that any excavations made during the rehabilitation process are backfilled and made safe and stable.

2. DECOMMISSIONING PLANNING

The planning for closure and rehabilitation should be an on-going process, which is adapted and updated by Twapewa during the operational phase of the cobblestone extraction. Twapewa should continuously refine the decommissioning criteria and associated costs including developing a preliminary closure and rehabilitation plan. This plan should reflect:

- ✚ Future developments of its camp site and associated infrastructures
- ✚ Any changes in the extraction of cobblestones
- ✚ Any changes in the haulage of cobblestones to the construction sites
- ✚ Environmental aspects related to internal routes and stockpiling of cobblestones prior to loading,
- ✚ Social conditions of its employees

Twapewa will be required to undertake a detailed decommissioning and rehabilitation process, ideally during the first twelve months of the project.

2.1 **Explicit Details**

Since the cobblestone sourcing and transport contract have a lifespan which is relatively a shorter period, it is quite possible to provide explicit details on how rehabilitation will take place now, because technology and legislation requirements are not likely to change within that timeframe.

Twapewa should therefore formulate a thorough decommissioning strategy and develop a realistic and workable rehabilitation plan which it should review and improve throughout the remaining lifecycle of the project. Ideally, the final closure strategy should include and provide for a continuous rehabilitation and final closure.

It is also important to plan for closure on account of unforeseen circumstances, i.e. gravel roads to B2 washed away as a result of heavy rainfall in the area. Although planning for unforeseen circumstances cannot be done in much detail, being prepared for such unforeseen circumstances relies on having an updated detailed closure plan, which gives the promoter the ability to rapidly evaluate the remaining unknowns and risks associated with closure and to develop an appropriate decommissioning plan. In broader terms, the decommissioning plan should include the following aspects:

2.2 **Socio-economic considerations**

Whilst the closure of the cobblestones sourcing and transport will not have substantial changes in the community and the environment in which the project is located, Twapewa is, nevertheless expected to engage and to keep affected stakeholders abreast of plans related to its ceasing operations. Amongst the stakeholders who should be engaged are the following:

- ✚ its employees both fulltime and part-time,
- ✚ service providers, i.e. third parties contracted for hauling,
- ✚ workers' representatives, i.e. trade unions,
- ✚ the !Oe -!Gân Traditional Authority,
- ✚ Office of the Labour Commission, and
- ✚ the Office of the Environmental Commissioner

2.3 Mechanism to Manage Socio-economic Effects

Various mechanisms are available to manage post closure social issues. Twapewa may wish to consider such mechanism a few of these: here are several mechanisms that can be considered, perhaps for Twapewa for find new markets for cobblestones with the objective to: are highlighted herewith for interest only.

- ✚ to save jobs and avoid job losses and a decline in employment
- ✚ to provide alternative solutions and procedures for creating job security where job losses cannot be avoided; and
- ✚ to improve the social and economic impact on individuals when retrenchment becomes imminent.

3. FINANCIAL PROVISIONS FOR DECOMMISSIONING

The financial provision for socio-economic effects should be structured to include:

3.1 Employee Costs:

Twapewa should plan well in advance and put funds aside to cover expenses that will become due at the closure of its project.

- ✚ provision for retrenchment (i.e. severance, leave days, or retention packages),
- ✚ new employment opportunities
- ✚ retraining costs

3.2 Physical Rehabilitation

The infrastructure components that will be decommissioned and rehabilitation are:

- ✚ the camp site and all accessories,
- ✚ all internal routes to the extraction locations,
- ✚ any fixed structures, i.e. workshop, auxiliary support facilities, etc.
- ✚ any water supply lines.
- ✚ electrical connections (generator, solar panels, etc.), and
- ✚ any fencing around the camp site.

4. DECOMMISSIONING STRATEGY

The following methods and management strategies are proposed for the decommissioning and rehabilitation during final closure.

TABLE 1: DECOMMISSIONING AND REHABILITATION PLAN

<p>GENERAL:</p> <ul style="list-style-type: none"> • All rubbish (papers, plastics, scrap metals, etc.) should be removed from site and disposed of at designated waste dump sites • Any disturbed footprint areas within the Camp Site premises should be graded and re-countered to match the surrounding landscape. • Any trenches or excavations made within the Camp Site premises must be backfilled and rehabilitated to prevent any erosion. • The surfaces should be ripped and covered with topsoil to ensure water is able to infiltrate. 	
<p>INFRASTRUCTURES</p> <ul style="list-style-type: none"> • Dismantle and remove any installed electrical cabling for sale to scrap dealers. • Remove all scrap metals from the Camp Site for recycling or sale. • Dismantle any fixed structures from the Camp Site. • Dismantle the workshop and all associated equipment & steel materials for recycling, sale to third parties or disposed of as scrap materials • All disturbed footprint areas covered by structures within the Camp Site should be graded and re-countered to match the surrounding landscape. 	
<p>ACCESS ROAD</p> <ul style="list-style-type: none"> • In the short term the access road should be kept open to allow access for closure monitoring. • If there are plans to extract cobblestones for future projects in the future, the access road to the extraction site should be left intact. • Contour any road corridors to restore natural drainage. • Deep rip surface to alleviate compaction and encourage re-growth of local vegetation. 	
<p>WATER CONNECTIONS</p> <ul style="list-style-type: none"> • Water and drainage systems to be shut off and any surface water pipes removed from the site. • All scrap water pipes should be recovered for recycling. • Contour the area to restore natural drainage. • Rip the surface to alleviate compaction and encourage re-growth of local vegetation. 	
<p>SEWERAGE</p> <ul style="list-style-type: none"> • Dismantle and remove any sewage treatment facilities from the site. • Recycle any scrap metal. • Contour the area to restore natural drainage. • Rip the surface to alleviate compaction and encourage re-growth of local vegetation. 	
<p>REMAINING MATERIALS</p> <ul style="list-style-type: none"> • All other remaining materials, which are anticipated to be small quantities of non-recyclable items and rubbish, should be collected and disposed of at designated waste dump (Usakos landfill site). 	

Responsible Party : Proponent or Appointed Representative	Monitoring Frequency: Yearly – end of the project
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5. **THE 'POLLUTER PAYS' PRINCIPLE**

Cobblestones are not classified as minerals, however, the Minerals Policy of Namibia (1999) endorses the 'polluter pays' principle which places the responsibility for pollution mitigation on the party that caused such pollution. This principle is strengthened by the Mine Closure Framework (The Chamber of Mines of Namibia, 2010) and IFC (IFC, 2007). It aims to ensure that environmental liabilities do not remain with the government, but that mechanisms are put in place by promoters to make sure that adequate financial resources have been set aside to cover expenses related to decommissioning and rehabilitation.

Twapewa should review the closure provision on a quarterly basis to ensure that provisions are correct and up to date. The costs associated with the decommissioning strategies and any monitoring that may be required post closure must set aside.

6. **CONCLUSION ON THE DECOMMISSIONING PLAN**

This decommissioning plan cannot anticipate all of the issues that will arise during the projected life of the operation and therefore, it is not intended to be a definitive closure prescription. This document does, however, provide an outline of the closure process that may be undertaken by Twapewa. A detailed closure plan will be prepared closer to the actual closure date, when the date of closure has been confirmed.