Tidle Wave Investments 105 (pty) Ltd

ENVIRONMENTAL MANAGEMENT PLAN (EMP) REPORT

PROPOSED SMALL SCALE SURFACE MINING FOR MARBLE MINING LICENCE 231

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PROJECT DETAILS

Environmental Management Plan for the proposed small scale surface mining for marble in Tidle Wave Invstments 105 (pty) Ltd Karibib District, Erongo Region, Namibia

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	physical chemistry. Extensively trained and experienced in analytical instruments that are essential for mineral Mining and mineral processing. Academically and experienced trained Manager, with an **MBA in Banking, Accounting and Strategic Management**. The qualification supplements the economic assessment of commerciality of mineral resources for assessment of the bankability.

DECLARATION

We hereby declare that:

a. We have the knowledge of and experience in conducting assessments, including knowledge of the Acts, Regulations and Guidelines that are relevant to the proposed small scale surface mining for Marble.

b. We have performed the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.

.....
M Siyambango
Environmental Assessment Practitioner (EAP)

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ABBREVIATIONS AND ACRONYMS

EMP	Environmental Management Plan
EIA	Environmental Impact Assessment
EC	Environmental Commissioner
SADC	Southern African Democratic Country
RSA	Republic of South Africa
MME	Ministry of Mines and Energy
MET	Ministry of Environment and Tourism
MAWF	Ministry of Agriculture Water and Forestry
DWA	Department of Water Affairs
OMDEL	Omaruru Delta
ML	Mining License
DEA	Department of Environmental Affairs
SM	Site Manager
ENC	Environmental Coordinator
SF	Site Foreman
PS	Project Staff
PP	Project Proponent
EIA-C	Environmental Impact Assessment Consultant
I&Aps	Interested and Affected Parties
EAs	Environmental Assessments

1. Environmental Management Plan (EMP)

1.1. Background

Tidle Wave Invstments 105 (pty) Ltd holds the rights over MINING LICENCE 231 located in Karibib District, Erongo Region. Tidle Wave Invstments 105 (pty) Ltd is a Namibian owned company intending to start a small scale surface mining for marble.

1.2. Project description

Tidle Wave Invstments 105 (pty) Ltd intends to implement a small scale surface mining for marble operation of the potential economic marble. The proposed small scale surface mining has a strong focus on dimension stone in particular marble. The intended small scale surface mining for marble will use the cutting methods to remove the marble slabs and various technological equipments and instruments will be used in the process.

1.3. Summary of the proposed activities

The environmental issues related to small scale surface mining for marble are mostly local and are common to most surface operations. These issues include oil spillage, dust or air pollution, impact on biodiversity, and land disturbance, impact on groundwater aquifer and also social economic impacts. The quarrying operations processes and associated activities are as follows:

- Ground or land disturbances will take place and this will result in localized loss of flora as well as any other fauna that maybe depended on such specific flora;
- Cutting, Drilling, trenching, and bulk sampling will be used in test mining for loosening the hard rock.
- The creation of an access roads around the Mining area;

1.4. Environmental requirements

Tidle Wave Invstments 105 (pty) Ltd is required by law to undertake an Environmental Impact Assessment (EIA) for the proposed quarrying in line with the following legal requirements:

- Prospecting and Mining Act, 1992, (Act No 33 of 1992);
- Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995;
- The Environmental Management Act, (Act No. 7 of 2007) and its EIA regulations Of 2012

1.5. Fulfilments of the environmental requirements

Tidle Wave Invstments 105 (pty) Ltd has appointed CENTRE FOR GEOSCIENCES RESEARCH as the Environmental Consultant. Therefore CENTRE FOR GEOSCIENCES RESEARCH Cc has prepared this Environmental Assessment Report covering the Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) in order to meet the statutory environmental management requirements of the proposed quarrying activity for MINING LICENCE 231 . This Environmental Assessment report has been undertaken within the framework of the existing environmental assessment process as described in the Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995, published by the Ministry of Environment and Tourism as well as the provisions of the Environmental Management Act, (Act No. 7 of 2007) and its EIA regulation of 2012.

1.6. What is an Environmental Management Plan?

Environmental Management Plans (EMP's) are important tools that focus on the management actions that are required to ensure not only environmental compliance of projects, but also on implementing mitigation measures aimed at maximizing positive impacts while minimizing negative ones. The statutory validity and compliance significance of the EMP is inherited from the provisions of Regulations (2012) of the Environmental Management Act (2007) state that "the environmental management plan shall set out steps that are intended to be taken to manage any significant environmental impact that may result from the operation of the undertaking".

Against the above given context, EMP are thus by their nature recurring processes that transform mitigation measures into actions and through cyclical monitoring, auditing, review and corrective action, ensures conformance with stated EMP aims and objectives. Inherently, an EMP must respond to unforeseen events and changes in project implementation that were not considered before, and this is achieved through monitoring and auditing, including feedback for continual improvement in environmental performance.

1.7. What are the legal implications and obligations under this plan?

The Environmental Management Plan will be sent to the Directorate of Environmental Affairs (DEA) of the Ministry of Environment and Tourism (MET) for approval. Once

the DEA is satisfied with the contents of the EMP, they will issue a pro-forma Environmental Clearance Certificate to Tidle Wave Invstments 105 (pty) Ltd. The Environmental Clearance Certificate is linked with the recommendations of the Environmental Management Plan.

The EMP, once accepted with the receival of the Environmental Clearance, therefore becomes a legally binding document and each role-player including contractors and sub-contractors who are made responsible to implement the relevant sections of this EMP, are required to abide to the conditions stipulated in this EMP document .

1.8. Positive Impacts

1.8.1. Employment/job creation

The marble quarry both direct and indirect jobs. The sampling activities will employ of about 12 to 15 people, whereas, the transporting, offloading and shipping of samples will create about 3 jobs. Indirect jobs will come from the multiplier effects of the pressure on disposal sites and upstream service providers to the proposed project.

1.8.2. Enhancement measures for employment/job creation

- Where unskilled labour can be used, a 'locals first' policy should be considered by Tidle Wave Invstments 105 (pty) Ltd.
- It is proposed that local people, meaning the community members from Karibib Town, should be employed as far as possible, especially where no specific skills are required.
- The Karibib Town Councilor could be requested to assist with the recruitment of construction workers.
- Both men and women should be granted the opportunity to be employed by this project.

1.8.3. Support to local retailers shop

Mining is the highest foreign currency earner and GDP contributor to the Namibian economy, therefore the presence of mining activities near local authorities stand to benefit the local economies from project related purchases, for example, the retail, accommodation and recreation sectors.

1.8.4. Enhancement measures for support to local retailers shop

- Tidle Wave Invstments 105 (pty) Ltd and its employees are encouraged to purchase or support local retailers in Karibib and Usakos Towns unless the intended material/product to purchase is not available.

1.8.5. Export taxes and VAT payment

Export taxes and VAT payments contribute significantly to the national economy contribution. Thus, without these payments our government will not be able to roll out project on infrastructure, being it water, road or electricity and also sanitation facilities nationwide.

1.8.6. Enhancement measures for export taxes and VAT payment

- Tidle Wave Invstments 105 (pty) Ltd and its employees are encouraged to make these payments when applicable to support the economic growth of the country.

1.9. Negative Impacts

1.9.1. Solid waste: wires, drill bits, and human waste

Human activities at the mining site will to some extend produce litter, particularly small items that people throw away on the ground. This impact will be minimized or/and eliminated by providing adequate waste collection bins. In addition; awareness posters are proposed as constant reminders in reinforcing this commitment.

1.9.1.1. Mitigation

- Provision of adequate waste bins, particularly in liter prone areas of the site, and
- Awareness enhancement measures by use of visual posters, chiefly for those who cannot read.
- For human waste, mobile toilet should be made available on site for workers and once these facilities are full, the collected human waste should be disposed at the Karibib Town human waste disposal site. Prior to the disposal of the above mentioned wastes Tidle Wave Invstments 105 (pty) Ltd must entered into agreement with the Karibib Town for permission to use their facility.

1.9.2. Impact of oil spills on groundwater aquifer and surface water streams

The use of industrial vehicles and air compressor generators on the mining site will pose a risk of oils spillage. Besides the health risk of its bio-availability, oil and oil

spillage contaminates top soil, groundwater aquifer (e.g. Omdel aquifer), and is a fire risk and impairs biological productivity of top soil.

1.9.2.1. Mitigation

- Train and supervise staff to ensure minimal spillage of oil.
- Routine inspections before the start of every work schedule involving potential spillage.
- Collect used oil in drums and to be collected by a recycling company

1.9.3. Land or soil disturbance: on site and the proposed 23km stretch road

The sampling process will involve cutting out bulk samples from in situ marble outcrops and therefore disturbing the landform and the soil cover in the immediate surroundings of the mining site. This undertaking will have visual impact and has the potential of disturbing the structural integrity and biological productivity of top soil.

1.9.3.1. Mitigation

- The top soil from 0 to 30cm to be removed and stockpile and to be used during the rehabilitation process.
- The top soil in the immediate vicinity of the sampling site should be removed and stored for re-cultivation during decommissioning.
- It is recommended that top soil to be removed down to the subsoil, where it is significantly thicker than 0.5m, as topsoil is always a scarce resource, and even if this lower material does not contain seed and is poorer in soil organisms, it has been found to be useful in reclamation.
- Where top soil is less than 150mm thick the unconsolidated material beneath should also be removedand treated as topsoil.
- Land markings and pits induced during sampling shall be restored to original landform and visual state as much as possible. Furthermore, this mitigation measure shall extend and applies to any disturbance induced by any access road. Raking or/and dragging with tyres could help in restoration of vehicle tracks.

1.9.4. Dust generation on site

During the quarrying process dust will be generated onsite by earth moving equipment and also on the gravel road by trucks and vehicles. On site, marble blocks will be cut

into smaller blocks in order to give them the desired smooth shape. During the cutting process about 25% the original marble mass is lost in the form of dust. In addition, processing of marble results in the formation of marble dust, which is suspended in the air and which could be inhaled by the workers. Epidemiological studies indicates that workers exposed to marble dust stand an increased risk of suffering from asthma symptoms, chronic bronchitis, nasal inflammation and impairment of lung function (Camici et al., 1978;Angotzi et al., 2005; Leikin et al., 2009)

1.9.4.1. Mitigation

- Measures such as the use of wet processes enclosure of dust-producing processes under negative air pressure (slight vacuum compared to the air pressure outside the enclosure),
- Exhausting air containing dust through a collection system before emission to the atmosphere, and exhaust ventilation should be used in the workplace.
- Use of personal protective equipment for proper dust control for respiratory protection and should be used only where dust control methods are not yet effective or are inadequate.
- Direct skin contact should be prevented by gloves, wearing respiratory protection during cleanup,
- Educational awareness programs for workers should be instituted about hazard of exposure to marble dust and on the use and maintenance of exhaust ventilation systems, and the use and maintenance of personal protective equipment to avoid risk of dust and noise.
- All gravel roads in quarry areas should have a speed limit of 60km/h for light vehicles and 30km/h for heavy vehicles in order to minimise the amount of dust generated by vehicles.
- In addition, where available water allows, roads should be sprayed with water on a regular basis in order to prevent dust creation.

1.9.5. Biodiversity (fauna and flora)

Some of the activities of the proposed project i.e. vehicles, human movements, excavating pose a risk to the integrity of baseline biodiversity as well as the biological productivity of the site and the immediate proximity.

1.9.5.1. Mitigation

- Disturbed areas must be kept to a minimum

- Barriers/barricades confining driving trucks must be erected to avoid stray driving and trampling on habitat
- Rules pertaining to safe guarding against poaching and collection of plant and plant products must be established and enforced.
- Avoid damage to protected or high use value trees during mining and usage of heavy machines.
- Disturbance of marginal vegetation at the mountains should be limited.
- Avoid disturbance on invertebrate on site and along the gravel road stretch.
- During operation avoid the creation of multiples roads strips, which could result in the disturbance of breading sites for various mammals.

1.9.6. Potential spread of HIV/AIDS

In the proposed project area, it is estimated that one out of every four people are HIV positive. Previous experience has shown that construction workers or mining workers residing in a construction camps may engage in risky sexual behaviour with members of the community. This can contribute to the spread of HIV both in the project area and beyond to other region.

1.9.6.1. Mitigation

- Tidle Wave Invstments 105 (pty) Ltd, ECO should sensitize the risks of sexual behaviour, and also the effects of HIV/AIDS to its employees. Workers should be prohibited to engage in such activities with especially minors. Mitigation measures as outlined in the EMP should be adhered to.

1.10. Implementing the environmental management plan (EMP)

1.10.1. Overview

In the preceding sections, the environmental aspects which may be affected by the proposed project have been categorized into negative and positive impacts. As an extension of the preceding sections, this section summarizes the objectives, indicators to be observed, schedules to be adhered to roles and responsibilities of various stakeholders to the EMP.

The following abbreviations are used to indicate who is responsible for what impact mitigation objective:

- Site Manager and Environmental Coordinator — SM/ENCO
- Site Foreman — SF
- Project Staff — PS
- Project Proponent — PP
- Environmental Impact Assessment Consultant — EIA_C
- Environmental Commissioner — EC
- Interested and Affected parties — I & AP

Table 1:Project Planning and Implementation

Objectives	Indicators	Schedule	Responsibility
Establish a strong environmental protocol from project implementation to final closure to ensure least possible impacts to the environment	Resources (Financial, human, equipment and safety gear) are provided for the awareness, meetings, monitoring and reporting.	At the beginning of the quarry phase.	PP, SM
			PP, I & AP

Objectives	Indicators	Schedule	Responsibility
To maximize the economic spin off into the local economy.	Expedite the appointment of a senior person to assume the responsibility of an environmental coordinator (ENC)	At the planning stage or at the beginning of the implementation phase of the quarry phase	

Table 2: Implementing the EMP

Objectives	Indicators	Schedule	Responsibility
To define roles and responsibilities according to the EMP	Staff and site visitors are aware of requirements and contents of the EMP	From the start to the closure of the quarry phase	ENC
To implement environmental management that is preventative and proactive	Inappropriate behavior will be corrected. Explanation as to why inappropriate behavior is unacceptable, and if appropriate the perpetrator is disciplined.	From the start to the closure of the quarry phase	ENC

Table 3: Implementing of the Positive Impacts

Objectives	Indicators	Schedule	Responsibility
The objective pertaining to creation of employment/job relates to an internal company policy of maximizing	At least 60 % of the semi-skilled to unskilled site workers should be locals	From the beginning of the quarry phase right through to the end.	SM, PP

Objectives	Indicators	Schedule	Responsibility
employing local people, particular in semi to unskilled job categories			
To maximize the economic spin off into the local economy and nation at large through export taxes and VAT payment	The towns of Karibib and Usakos should first be considered in the procurement of services and equipment, particularly those which can be sourced locally	From the planning of the quarry phase right through to the end	PP, SM

Since tourism is the major economic sector of the economy of Karibib, Usakos and Swakopmund, it will be appropriate in this regard for the proponent to identify and make use of suitable services provides for both accommodation and recreational needs of senior personnel whenever that needs arises.

Table 4: Implementing of the Negative Impacts

Objectives	Indicators	Schedule	Responsibility
To avoid any form of liter by paper, wires, human waste and drill bites on and around the mining site	No litter or/and remnants of liter shall be visible around the project site	From the beginning of the quarrying phase right through to the end	SF, PS, SM
To avoid any form of oil spills on and	No oil spillage or/and remnants of oil spillage shall be	From the beginning of the quarry phase	SF, PS

Objectives	Indicators	Schedule	Responsibility
around the mining site	visible around the project site	right through to the end	
To minimize land and soil disturbance	Driving tracks and excavation shall be restricted and only be visible within the project site.	From the beginning of the quarry phase right through to the end	SM, SF
To minimize dust generation on site and atmospheric pollution	Emissions/generation particulate content of the dust around the site and gravel roads shall not exceed maximum allowable concentration that may affect human being and animals. Mitigation measures prescribed under sub-section 1.9.4.1 should be adhered to.	From the beginning of the quarry phase right through to the end	SM,SF
To protect and conserve fauna and flora within the project area	Minimum levels of habitat disturbance as prescribed in sub-section 1.9.5.1should be adhered to.	From the beginning of the quarry phase right through to the end	SM,SF
To prevent the potential spread of HIV/AIDS	No potential spread of HIV/AIDS by the employees and mitigation measures prescribed in sub-section 1.9.6.1 should be adhered to	From the beginning of the quarry phase right through to the end	SM,SF
To ensure compliance with statutory requirements	Assurance measures shall be put in place and Periodic inspections aimed at corrective action undertaken, recorded and documented	From the beginning of the quarry phase right through to the end	EC, PP

1.11. Monitoring, reporting and corrective action

1.11.1. Overview

Monitoring of the EMP performance for the proposed small scale surface mining project by Tidle Wave Invstments 105 (pty) Ltd emphasizes early dictation, reporting and corrective action. It is divided into three parts, namely:

- Monitoring of activities and effects to be undertaken by the environmental coordinator (ENC)
- Reporting of all incidents and situations which have the potential of jeopardizing compliance of statutory provisions as well as provisions of this EMP.
- Taking corrective measures which are prompt, adequate and long lasting in addressing non-compliance activities or behaviour.

Table 5: Solid waste disposal: wire, paper, drill bites, and human waste

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are disposal drums/bins available or full?					
Is there any litter around the site and its surroundings?					

Table 6: Oil spillage or used oil

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are disposal drums					

available or full?					
Is there any oil spills around the site and its surroundings?					

Table 7: Land and Soil Disturbance

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on land and soil disturbance?					
Are car track barricades in place?					

Table 8: Dust generation on site and gravel roads stretch

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on dust pollution?					
Are the fume and particulate levels acceptable?					

Table 9: Biodiversity (fauna and flora)

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are there any deviations from the provisions of the EMP on biodiversity?					
It is traipses harvesting plant taking place feeding of animal or introduction of animals?					

Table 10: Compliance

Mitigation	Compliance	Follow up Action Required	By Whom	When	Date Completed
Are staff members and site visitors aware of the provisions of the EMP?					
Is there a copy of the EMP on site?					
Ask at least two people on various provisions of the EMP?					

1.12. Environmental awareness

Environmental regulations, rules and procedures apply to everybody, including subcontractors, visitors, permanent and temporal workers. Therefore anybody who finds him or herself within the boundaries of the mining area must adhere to the Environmental Code of Conduct as outlined in this section of the EMP.

- The term environment refers to the whole surrounding around us, or conditions in which a person, animal, or plant lives or operates. In context of this project, the term environment denotes the natural surroundings in a particular geographical area, especially as affected by human activity.
- The environmental coordinator will implement on site environmental guidelines and has the authority to issue warnings as well as discipline any person who transgresses environmental rules and procedures. Persistent transgression of environmental rules will result in a disciplinary hearing and thereafter continued noncompliance behaviour will result in permanent removal from the mining site.
- Continuous assistance from the environmental coordinator must be maintained in case some members of the project team do not understand or do not know how to keep up with established environmental guidelines.

1.12.1. Natural environment management guidelines

a. Never feed, tease or play with, hunt, kill, destroy or set devices to trap any wild animal (including birds, reptiles and mammals), livestock or pets. Do not bring any wild animal or pet to the mining site;
b. Do not pick any plant or take any animal out of the mining area EVER. You will be prosecuted and asked to leave the project area;
c. Never leave rubbish and food scraps or bones where it will attract animals, birds or insects. Rubbish must be thrown into the correct rubbish bins or bags provided;
d. Protect the surface material by not driving over it unnecessarily;
e. Do not drive over, build upon, or camp on any sensitive habitats for plants and animals;
f. Do not cut down any part of living trees / bushes for firewood;
g. Do not destroy bird nest, dens, burrow pits, termite hills etc. or any other natural objects in the area.

1.12.2. Vehicle use and access guidance

i. Never drive any vehicle without a valid licence for that particular vehicle and do not drive any vehicle that appears not to be road-worthy;
ii. Never drive any vehicle when under the influence of alcohol or drugs;
iii. DO NOT make any new roads without permission. Stay within demarcated areas;
iv. Avoid U-Turns and large turning circles. 3-point turns are encouraged. Do not ever drive on rocky slopes;
v. Stay on the road, do not make a second set of tracks and do not cut corners;
vi. DO NOT SPEED - 60 km per hour for normal vehicles and 30km per hour for heavy trucks on gravel roads and around the site;
vii. No off-road driving is allowed;
viii. Vehicles may only drive on demarcated roads;
ix. Adhere to speed limits (i.e. 60 km per hour for normal vehicles and 30km per hour for heavy trucks on gravel roads and around the site) and drive with headlights switched on along any gravel road.

1.12.3. Control of dust guidance

a. Do not make new roads or clear any vegetation unless instructed to do so by your Contractor or the Environmental Coordinator or site manager;
b. Do not try to disturb the surface of the natural landscape as little as possible.
c. Do not speed on gravel roads and around the mining site, and adhere to the speed limits.
d. Apply water to supress the dust were the generation of the dust on either gravel roads or mining site is beyond control.

1.12.4. Health and safety guidance

a. Drink lots of water every day, but only from the fresh water supplies;
b. Take the necessary precautions to avoid contracting the HIV/AIDS virus;
c. Never enter any area that is out of bounds, or demarcated as dangerous or wander off without informing or permission of team leader;
d. Never climb over any fence or trespass on private property without permission of the landowner or consultation with the Environmental Coordinator, Site Manager;
e. Report to your Contractor if you see a stranger or unauthorised person in the Mining area;

f. Do not remove any vehicle, machinery, equipment or any other object from the Mining camp site or along the profile or at a seismic testing station without permission of your Contractor or Site Manager;
g. Wear protective clothing and equipment required and according to instructions from your Contractor or Site Manager;
h. Don not engages in sexual relationship with minor and also adhere to zero tolerance to spread HIV/AIDS.

1.12.5. Preventing pollution and dangerous working conditions guidance

I. Never throw any hazardous substance such as fuel, oil, solvents, etc. into streams or onto the ground;
II. Never allow any hazardous substance to soak into the soil;
III. Immediately tell your Contractor or Environmental Coordinator when you spill, or notice any hazardous substance being spilled anywhere in the field or camp;
IV. Report to your Contractor or Environmental Coordinator when you notice any container, which may hold a hazardous substance, overflow, leak or drip;
V. Immediately report to your Contractor or Environmental Coordinator when you notice overflowing problems or unhygienic conditions at the ablution facilities, vehicles, equipment and machinery, containers and other surfaces.

1.12.6. Disposal of solid and liquid waste guidance

a. Learn to know the difference between the two main types of waste, namely: General Waste; and Hazardous Waste.
b. Learn how to identify the containers, bins, drums or bags for the different types of wastes. Never dispose of hazardous waste in the bins or skips intended for general waste or Mining rubble;
c. Never burn or bury any waste on the camp or in the field;
d. Never overfill any waste container, drum, bin or bag. Inform your Contractor or the Environmental Coordinator/ the Project Geologist / Site Manager if the containers, drums, bins or skips are nearly full;
e. Never litter or throwaway any waste on the site, in the field or along any road.
f. No illegal dumping;
g. Littering is prohibited.

1.12.7. Dealing with environmental complaints guidance

a. If you have any complaint about dangerous working conditions or potential pollution to the environment, immediately report this to the Environmental Coordinator
b. If any person complains to you about noise, lights, littering, pollution, or any other harmful or dangerous condition, immediately report this to your Contractor.

1.12.8. Environmental Personnel Register

Table 11 shows the Environmental Personnel Register to be signed by every person who receives or attends the Environmental Awareness Training or who has the training material explained to him or her or in possession of the training material.

Table 11: Environmental Personnel Register

Date	Name	Company	Signature

1.13. Site closure and rehabilitation

In the context the proposed project, rehabilitation refers to the process of returning disturbed land and soil to some degree of its pristine state. The scope of the Tidle Wave Invstments 105 (pty) Ltd site rehabilitation emphasizes the backfilling of sampling/drilling holes and cover with top soil in areas that will be disturbed by mining/ quarrying activities. These will be but not limited to the access road, vehicle tracks around the site, removal and restoration of areas covered by stockpile and rock piles. Furthermore, this section outlines rehabilitation objectives and proposes rehabilitation commitments which the proponent shall adhere to.

1.13.1. Objectives of the site closure and rehabilitation

- Reduction or elimination of the need for a long term management program to control and minimize the long term impacts.

- Clean up, treatment or restoration of disturbed or/and contaminated areas.

In addition, the following rehabilitation measures are important and should be implemented wherever necessary:

- A site inspection will be held after completion of the mining process to determine the nature and scope of the rehabilitation work to be undertaken. The rehabilitation will be done to the satisfaction of both Tidle Wave Invstments 105 (pty) Ltd and MET.
- The rehabilitation work should commence soon after the end the active mining period.
- The access road and all vehicle tracks should be rehabilitated by raking or dragging with tyres or tree branches (other suitable methods) behind a vehicle.
- With regard to both biological productivity and erosion, topsoil is arguably the most important resource in the project area, for that reason, the recovered to topsoil and subsoil should be utilized to reconstruct the original soil profile.
- All waste shall be removed, and potential hazards, particularly pits closed and left in a safe disposition.
- All rehabilitated areas shall be considered no go areas and the environmental coordinator shall ensure that none of the staff members enters the area after rehabilitation.

2. Conclusion and recommendations

2.1. Conclusion

The fundamental principle behind environmental assessments (EAs) is to ensure a balance in social, economic and environmental needs, particularly when proposed projects are of such a nature that they negatively affect some needs at the expense of the other. Ultimately, EAs should enhance proposed projects' propensity towards being more beneficial and important by suggesting measures, designing and implementing programs and plans to that effect.

Against this background, it is anticipated that this project will be beneficial and important to the proponent, national economy, the local social conditions and the local economy if the guidelines and mitigation measures suggested in this EMP are implemented. However, it should be acknowledged that disturbance to the environment will be incurred, but that will be minimal and within legally acceptable levels.

This EMP should be viewed as a framework for integrating mitigation measures and applicable legal tools to ensure both compliance and sustainability. It is therefore very important that the proponent provides adequate resources (human, financial, tangible and intangible assets) for the implementation of the plan.

2.2. Recommendations

The proposed quarry project may go ahead provided that all the provisions of the EMP as well as all issued permit are followed. Recommended actions to be implemented by Tidle Wave Invstments 105 (pty) Ltd as part of the management of the likely impacts through implementations of the EMP are:

- Contract an Environmental Coordinator / Consultant / suitable in-house resources person to lead and further develop, implement and promote environmental culture through awareness raising of the workforce, contractors and sub-contractors in the field during the whole duration of the proposed mining programme period;
- Provide with other support, human and financial resources, for the implementation of the proposed mitigations and effective environmental management during the planned mining activities ;

- Develop a simplified environmental induction and awareness programme for all the workforce, contractors and sub-contractors;
- Where contracted service providers are likely to cause environmental Impacts, these will need to identified and contract agreements need to be developed with costing provisions for environmental liabilities;
- Implement internal and external monitoring of the actions and management strategies developed during the mineral Mining and possible mining duration and a final Environmental Monitoring report be prepared by the Environmental Coordinator / Consultant / Suitable in-house resource person and to be submitted to the regulators and to end the proposed quarry project;
- Develop and implement a monitoring programme that will fit into the overall company‘s Environmental Management Systems (EMS) as well as for any future EIA for possible quarrying projects.

It is hereby recommended that Tidle Wave Invstments 105 (pty) Ltd take all the necessary steps to implement all the recommendations of the EMP for the successful implementation and completion of the proposed quarry project for MINING LICENCE 231 situated in the Karibib District, Erongo Region, Namibia.

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