

ONGAKA SLATES ENTERPRISES

Quarrying of Slates from Mining Claim Numbers: 66975-66980 and 66212-66213 and Beneficiation, Ruacana Townlands, Omusati Region

An Updated Environmental Management Plan

Prepared for: **Ongaka Slates Enterprises**

Reference No. APP-003476



PROJECT NAME

An Updated Environmental Management Plan (EMP) for Quarrying of Slates from Mining Claim Numbers: 66975-66980 and 66212-66213 and Beneficiation, Ruacana Townland, Omusati Region

Renewal of an Environmental Clearance Certificate

REPORT STATUS

Final Report

REFERENCE NO.

APP-003476

PREPARED FOR

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ABBREVIATIONS AND ACRONYMS

Acronym	Expansion
BAT	Best Available Technology
COVID-19	'CO' - Corona, 'VI'- Virus & 'D' - Disease of 2019
EC	Environmental Commissioner
ECC	Environmental Clearance Certificate
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
GPS	Global Positioning System
GRN	Government of the Republic of Namibia
ha	hectare (1 ha = $10\ 000\ m^2$)
HPP	The Harambee Prosperity Plan
IAPs	Interested and Affected Parties
km/hr	kilometer per hour
m ²	square meters
MC	Mining Commissioner
MEFT	Ministry of Environment, Forestry and Tourism
MHSS	Ministry of Health and Social Services
MME	Ministry of Mines and Energy
NCCI	Namibia Chamber of Commerce and Industries
NHC	National Heritage Council
NSI	Namibia Standards Institute
ORC	Omusati Regional Council
PPE	Personal Protective Equipment
QS	Quarry Supervisor
RFA	Road Fund Administration
SHE	Safety, Health & Environment
SME	Small and Medium Enterprises
TIPEEG	Targeted Intervention Programme for Economic and Employment Growth
	List of Road Numbers
C35	The route number for the road starting from the coastal town of Henties Bay to Ruacana through Uis, Khorixas, Kamanjab and Omakange Settlement.
C46	The route number for the highway which starts from B1 in the town of Ondangwa to Ruacana via Oshakati, Oshikuku and Outapi.
D3616	The route number for the district road from the town of Tsandi to C46 via the settlements of Onesi and Epalela.

DEFINITION OF TERMS

TERM	EXPANSION
Environmental Compliance Inspection	A systematic verification process of objectively obtaining and evaluating evidence to determine whether specified environmental activities, conditions, management systems and or information about these matters conform with the criteria and communicating results of the such process to the client.
Cumulative Impacts	In the context of quarrying, cumulative impacts would mean the impacts of quarrying activities which in themselves may not significant but may become significant when added to the existing and potential impacts resulting from similar or diverse activities or underrating in the area.
Environmental Component/Aspect	An attribute or constituent of the environment (i.e., air quality; marine water; waste management; geology, seismicity, soil, and groundwater; marine ecology; terrestrial ecology, noise, traffic, socio-economic) that may be impacted by the proposed project.
Environmental Impact	A positive or negative condition that occurs to an environmental component as a result of the activity of a project or facility. This impact can be directly or indirectly caused by the activity.
Environmental Impact	A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.
Environmental Management Plan (EMP)	A working document which contains site-, project-, or facility-specific plan developed to ensure that environmental management practices to eliminate and control environmental impacts are followed during the developmental phases of that site, project and or facility and would normally consist of construction phase, operational phase and decommissioning phases.
Environmental Monitoring	The collection, evaluation and summarization of environmental data by continuous or periodic monitoring of certain qualitative and quantitate indicators characterizing the state of environmental components and their modification as a result of the impact of natural and anthropogenic factors.
General Waste	Waste that does not pose an immediate threat or hazard to health or the environment: domestic waste; business waste and inert waste.
Hazardous Materials/Substances	This refers to any substance that contains an element of risk and could have a deleterious effect on the environment
Hazardous Waste	Any waste that contains organic or inorganic elements or compounds that may, owing to the inherent physical, chemical or toxicological characteristics of that waste, have detrimental impact on health and the environment.
Infrastructure	The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage, etc.
Interested and Affected Parties	All persons who may be affected by the project either directly or indirectly, or who have an interest or stake in the area to be affected by the project, including neighbouring landowners & Road Fund Administration.
Mitigation	Measures designed to avoid, reduce or remedy adverse impacts.
Non-compliance	Issues that are in direct non-compliance with the requirements, commitments and/or management measures as approved in the EMP.
Overburden	In the context of this quarrying operation, overburden is the soil layer that lies above the slates which is mined from the Mining Claims. The first 300mm layer of the overburden comprises of topsoil which supports the rooting system for vegetation, plants and trees and should be set aside and preserved for future rehabilitation.
Recycle	A process where waste or waste water is reclaimed for further use, this process involves the separation of waste from a waste stream for further use and the processing of that separated materials as a product or raw material.
Re-use	To utilise articles from the waste or water again for a similar or different purpose without changing the form or properties of the articles.
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
Storage	The accumulation of waste in a manner that does not constitute a treatment or disposal of that waste.
Vegetation Rehabilitation	This refers to the re-establishment of indigenous vegetation with a similar species composition to that which naturally occurs in the specific geographical environment.

1.0 THE PROJECT

1.1 Introduction

This report is prepared in support of the renewal application for an Environmental Clearance Certificate (ECC). The ECC was granted on 28 January 2019, following an authorisation process comprising of a scoping Environmental Impact Assessment (EIA) study, a Public Participation Process (PPP) and the formulation of an Environmental Management Plan (EMP) conducted by Ekwao Consulting ('Ekwao').

On 27 January 2022, a notice for the renewal of the ECC was submitted to the Ministry of Environment, Forestry and Tourism (MEFT) which allocated the renewal application the following reference number: **APP - 003476**.

1.2 The Applicant

Ongaka Slate Enterprises CC (henceforth, 'Ongaka') is the applicant of the ECC. Since Ongaka was granted the now expired ECC on 28 January 2019, there has been no material changes to its scope of operation, its members, its management, its physical address and its contact details.

Mr Theo Ekandjo is the managing member of Ongaka and assisted by a Quarry Supervisor in charge of all mining activities at the Mining Claims and a Factory Supervisor responsible for the day-to-day management of the beneficiation activities at the processing facility which is located in the townlands of Ruacana Town Council.

The SME company has a total of twenty four (24) employees on its payroll and has been in business for over twenty years now.

2.0 HISTORICAL BACKGROUND

2.1 Mining Claims

Ongaka Slates Enterprises (Ongaka) is a beneficiary owner of eight (8) Mining Claims (MCs) granted to the company by the Ministry of Mines and Energy (MME) in terms of the provisions of the Minerals (Prospecting and Mining) Act, Act 33 of 1992. The eight MCs have been allocated these numbers by MME: MC66975-66980 and 66212-66213.

All the MCs are situated in one place, in the rural district of Ruacana in the Omusati Region. Ongaka has pegged the MCs in order to secure and to provide access and mining rights to mineral grade slates.

Initially, the company had started with five (5) MCs pegged in 1998, but later another two (2) MCs were pegged during the course of 2000, bringing the total number of MCs held by Ongaka to eight (8).

2.2 Environmental Contract

From its inception in 1998, Ongaka had conducted its quarrying and beneficiation activities under the protocol of environmental contract that prevailed at that time. However, with the enactment of the Environmental Management Act, Act 7 of 2007, (EMA), and the Environmental Management Regulations which were gazetted on 6 February 2012, the activities conducted by Ongaka were listed as those requiring an ECC.

In July 2018, to ensure that its operations were conducted in full compliance with the provisions of EMA, Ekwao was appointed by Ongaka, to handle its ECC authorisation process with MEFT.

The ECC was eventually granted on 29 January 2019 and has since expired as seen in Figure 1.



MINISTRY OF ENVIRONMENT AND TOURISM

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23 January 2019

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

The Managing Director
Ongaka Slates Enterprise CC
P.O. Box 1994
Oshakati
Namibia

Dear Sir or Madam,

SUBJECT: ENVIRONMENTAL CLEARANCE CERTIFICATE FOR THE PROPOSED MINING ACTIVITIES ON MINING CLAIMS NO 66975 - 66980 AND 66212 & 66213, AND PROCESSING FACILITY FOR ONGAKA SLATES ENTERPRISES CC, AT RUACANA, OMUSATI REGION

The Environmental Scoping Report and Environmental Management Plan submitted are sufficient as they made provisions of the environmental management concerning the project's activities. From this perspective regular environmental monitoring and evaluations should be conducted. Targets for improvements should be established and monitored from time to time.

This Ministry reserves the right to attach further legislative and regulatory conditions during the operational phase of the project.

On the basis of the above, this letter serves as an Environmental Clearance Certificate for the project to commence. However, this clearance letter does not in any way hold the Ministry of Environment and Tourism accountable for misleading information, nor any adverse effects that may arise from this project activity. Instead, full accountability rests with Ongaka Slates Enterprise CC and their consultants.

This environmental clearance is valid for a period of 3 (three) years, from the date of issue unless withdrawn by this office.

Yours sincerely.

Teofilus Nghitila

ENVIRONMENTAL COMMISSIONER

"Stop the poaching of our rhinos"

All official correspondence must be addressed to the Permanent Secretary

Figure 1: ECC granted to Ongaka

2.3 Objectives of the EMP

The core objective of EMP formulated during the scoping EIA study, was to provide management measures which ensured that the potential negative impacts which the quarrying and processing activities presented to the receiving environment, were effectively mitigated and where positive impacts were derived from the operation, such positive impacts were enhanced.

Ongaka management was encouraged to use the EMP as a tool to take pro-active action by addressing potential problems before they occur.

Amongst the objectives as highlighted in the EMP were:

- To ensure compliance with the conditions of the ECC once granted by the EC.
- To develop and implement effective and practical measures to prevent, limit, minimize, mitigate and or to rehabilitate impacts to the receiving environment.
- To protect human health and ensure safety of workers and the general public who may be visiting the facility.
- To formulate effective management plans which ensure that the business carried out by Ongaka continues to be economically profitable, technologically feasible, socially acceptable and environmentally sustainable.

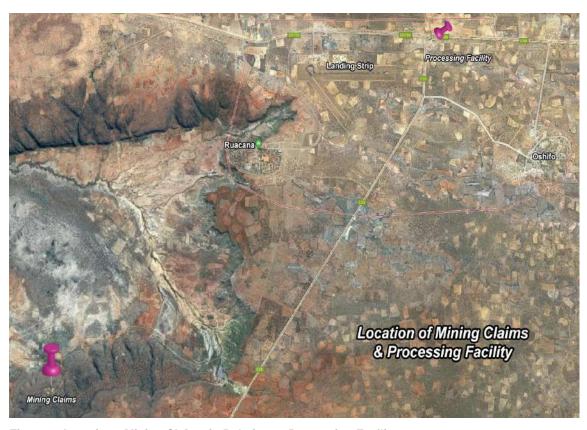


Figure 2: Location - Mining Claims in Relation to Processing Facility

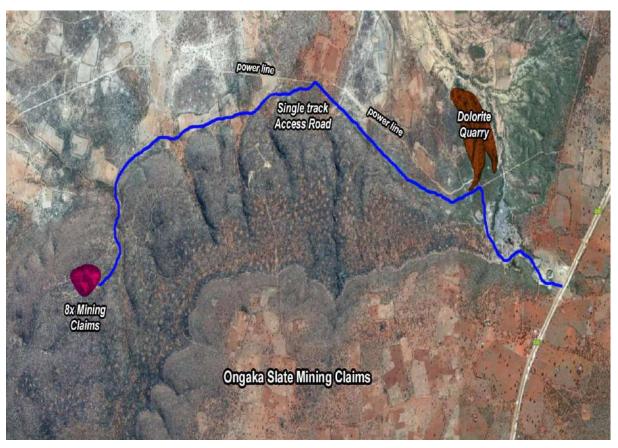


Figure 3: Access Road to Mining Claims



Figure 4: Processing Facility at the intersection of C35 and C46

3.0 DESCRIPTION OF THE ACTIVITY

3.1 Operational Overview

The business operation conducted by Ongaka consists of three main activities as listed below:

- · quarrying of slates from the MCs;
- loading and hauling the quarried slate to the processing facility;
- processing or beneficiation of the slate into commercial building materials (floor tiles, wall tiles, façade stones, cladding stones, natural roofing tiles, etc.)

These steps/process are briefly described.

3.2 Quarrying

Slate is a material that is quarried with uttermost caution and precision, otherwise the integrity of the materials can be compromised. At Ongaka, extraction is achieved without the use of explosives and detonators. The reason for this is to keep the slabs fairly large and to minimise losses resulting from material fracturing and breaking.

A frontend loader is the single machine used in the operation. First, the overburden (topsoil) is removed and stockpiled aside, exposing sheets of slates. Second, a crowbar is used to dislodge sheets of slates – one layer at a time. Third, each slate layer is manually stacked in the bucket of the frontend loader until the bucket is full. Thereafter the sheets are hauled from the quarry face and brought to be stockpiled at a dedicated site. Ten people are employed working fulltime at quarry (**Fig. 5**.

3.3 Loading and Hauling

From the stockpile, slates and slabs are picked up by means of a frontend loader and carefully packed by hands into a 10 m³ tipper trucks – dumping by a frontend loader will result in breakages. After loading, the material is hauled to processing facility located in the town of Ruacana about 16 km from the quarry (**Fig. 5**).

The first 6 km from the quarry is a single track bush road (dirt road) which, for a 10 m³ is a daunting task requiring careful driving over rocky terrains with sharp turns around hills and big trees (**Fig. 3**) The last 10 km of the hauling is on C35 tar road. On average three truck loads (30 m³) can be delivered to the factory per day.

3.4 Processing

A number of steps are involved in the processing or beneficiation of slates. First the slabs are cut into more easily manageable pieces (**Fig. 6**). Cutting is done using diamond tipped blades. In the second step, the slabs are split down to specific thickness – mostly done by hand. Splitting is the most technical step in the manufacturing process as it requires the slabs to be split to the correct thickness while maintaining the integrity of the natural material. Any slab not split in the area where a natural break occurs in the slab can result in the tile being discarded as unusable with an unnatural appearance.

After splitting, the slabs can be introduced into a machine for precision-trimming into specific lengths that are vital for packaging and installation. Once the slabs have been processed into slate tiles, they are divided into different categories based on colour and thickness. A wide variety of slate colours and grades can be quarried from the same quarry. Grades are the indication of the thickness, uniformity in thickness and texture.

3.5 Infrastructure and Services

The following infrastructure and services are available:

3.5.1 Water Supply

The processing facility is located within the urban area of the Ruacana Town Council and potable water is available.

At the MCs, water is only required for drinking, cleaning and for the single machine which is used in the operation. During 2018, when the scoping EIA was done, water to MCs was transported from factory in a 400-liter trailer. During the course of 2019, a borehole was drilled by GRN within a walking distance of the MCs and, currently water is sourced from there. The water requirement for the six employees at the guarry is about 400 liters in three days.

The borehole was not drilled for the quarrying operation but for the communal farmers in the areas.

3.5.2 Electricity Supply

A 3-phase transformer has been installed to supply electricity for the processing of slates at the factory. Electricity is not no need for electricity at the MCs. An aggregate quarry located about 3 km to the east of the MCs has electricity supplied from the grid.

3.5.3 Wastewater and Sewage

A sewerage system has been constructed to serve the factory while a portable chemical toilet is used at the MCs.

Once the sewage collects in the septic tank, heavy solids would settle to the bottom where bacteria breaks them down to form a sludge layer. The liquid portion of the wastewater would then move through the middle or clear zone of the tank and flows out of the outlet pipe into a drainfield. Normally for every litre of wastewater that enters the septic tank, one litre of water is pushed out of the tank through the baffle and enters the drainfield. Solids remain in the septic tank and gradually build up and should be removed at least once in 12 months.

3.5.4 Waste Management

The town of Ruacana has a waste landfill where solid waste from the MCs and the processing factory is disposed of. The amount of hazardous waste at the production is so small and has been disposed of in a responsible manner. In the event of sizeable hazardous waste that needs to be disposed of, corroboration with Nampower which has a workshop in the area has been initiated to dispose such waste together.

3.5.5 Drainage

Several natural water channels are traversing the MCs and are therefore the natural drainage. Caution is exercised not to dispose any waste or overburden in close proximity to such natural water channels. At the factory, the topography has a gentle slope to the south where a natural water stream runs about 400 m from the facility.





Figure 5: Extraction and Handling at Mining Claims





Figure 6 : Beneficiation an the Processing Facility





Figure 7 : Finished Products

4.0 REGULATORY REQUIREMENTS

4.1 Introduction

The Republic of Namibia has five tiers of law and a number of policies relevant to environmental assessment and protection which includes the following:

- The Namibia Constitution
- Statutory law
- Common law
- · Customary law, and
- International law

4.2 National Policies

The following policies are applicable and relevant to this EMP:

- The EIA Policy (1995)
- Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1994)
- The National Climate Change Policy of Namibia (September 2010)
- The Minerals Policy of Namibia (2004)
- Policy for the Conservation of Biotic Diversity and Habitat Protection (1994)
- The National Development Plans (NDP5)
- The National Resettlement Programme
- The Affirmative Action Loan Scheme Policy
- The National Land Policy
- The National Land-Use Policy
- Land Tax Regulations
- · Resettlement Land Act
- The Harambee Prosperity Plan of 2015

As the main source of legislation, the Constitution of Namibia (1990) makes provision for the creation and enforcement of applicable legislation. In this context and in accordance with its constitution, Namibia has passed numerous laws intended to protect the natural environment and to mitigate against adverse environmental impacts. The environmental regulations are guided and implemented by the Environmental Commissioner who heads the Department of Environmental Affairs (DEA) within the Ministry of Environment, Forestry and Tourism.

TABLE 1: APPLICABLE REGULATIONS & POLICIES											
Laws & Policies	Α	В	С	D	Ш	ш	G	Н	I	J	K
The Constitution of Namibia	х	х	х	х	х	х	х	х	х	х	х
Agricultural (Commercial) Land Reform Act, Act 6 of 1995	х						х			х	
Atmospheric Pollution Prevention Ordinance No. 11 of 1976		х	х					х			х
Communal Land Reform Act, 5 of 2002	х	х	х	х	х		х	х	х	х	х
Electricity Act, Act 4 of 2007				х						х	х
Environmental Management Act , Act 7 of 2007	х	х	х	х	х	х	х	х	х	х	х
Foreign Investment Act, Act 27 of 1990 as amended	х						х			х	
Forestry Act, Act 12 of 2001	х	х		х		х					х
Hazardous Substance Ordinance No. 14 of 1974		х	х	х				х	х	х	х
Labour Act No. 6 of 1992 - Health and Safety Regulations		х	х	х	х	х	х	х		х	х
Minerals (Prospecting & Mining) Act, Act 33 of 1992										х	
Mines, Works and Minerals Ordinance, No 20 of 1968		х	х	х	х		х				х
Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation		х	х	х	х	х	х	х	х	x	x
Nature Conservation Ordinance No. 14 of 1975	х						х	х			
Petroleum Products and Energy Act, Act 13 of 1990		х	х								х
Pollution Control and Waste Management Bill (Draft, 2003)		х	х	х				х			х
Public and Environmental Health Act No. 86 of 2015		х	х	х	х	х	х	х	х	х	х
Public Health Act		х	х	х		х		х		х	х
Regional Council Act, Act 29 of 1992							х	х		х	х
Regulations of the Environmental Management Act		х	х	х	х	х	х	х	х	х	х
Road Traffic and Transport Act, No. 22 of 19992		х	х	х	х		х			х	х
Soil Conservation Act, No. 67 of 1969, RSA, as amended		х	х			х	х	х	х		
Traditional Authority Act, Act 20 of 2000					х		х	х	х	х	
Water Resource Management Act, Act 11 of 2013	х						х	х		х	х

Leg	Legend: Impacts							
Α	Use of natural resources	Н	Biodiversity					
В	Emissions impact (Air & Odour)	I	Archaeological, Cultural and Heritage Impacts					
С	Emissions (to land & Hazard)	J	Social-economic Impacts					
D	Noisy impacts	K	Health and Safety Impacts					
Е	Visual impacts							
F	Vibrations							
G	Land use							

5.0 THE ENVIRONMENTAL MANAGEMENT PLAN

The EMP has been updated and reviewed after an environmental compliance assessment has been done, during which the current state of the operation was compared to the benchmarked information gathered during the scoping EIA conducted in July 2018.

The other reasons for reviewing the EMP were:

- To assess the compliance of Ongaka with respect to provisions of the EMP accepted by the company when the first ECC was granted.
- To ascertain the level and degree of compliance of Ongaka with respect to management measures as recommended in the EMP.
- To identify, if any predicted impacts of the project had occurred as well as any unforeseen deviations that may merit the implementation of corrective measures.
- To incorporate the measures recommended to combat the Covid-19 pandemic.
- To meet the requirements for the renewal of the ECC.

The EMP has these main objectives:

- to identify potential negative impacts associate with the project; and
- to propose measures to minimise or to mitigate such negative impacts.

The implementation actions are intended to minimise negative impacts and enhance positive impacts that originate from the operational activities of the company. It should be kept in mind that the EMP is a living document that is updated as new information, policies, authority guidelines and technologies are developed and become available.

5.1 Management Actions

Ongaka is required to develop guidelines and clear procedures to govern the implementation of its management actions. Guidelines and procedures should be developed by management to cover these aspects:

- · marketing and promotion management plan;
- · human resources guidelines;
- · standard operating procedures, and
- · health and safety annual audits.

5.2 Implementation of the EMP

Management measures to mitigate potential negative impacts are presented in table formats as briefly described here below:

5.2.1 Roles and Responsibilities

In **Table 2**, various parties have been listed and their respective roles with respect to the project mentioned.

MEFT and MME are the only two statutory stakeholders listed, but the promoter is expected to comply with legislations and regulations from various institutions and GRN agencies.

5.2.2 EMP Mitigation Measures

In **Tables 2 to 13**, potential environmental impacts that are associated with the operation are briefly described, both for the quarrying activities taking place at the Mining Claims and for the beneficiation conducted at the processing facility. Environmental objectives for each potential impact as well as mitigation measures have been described. Monitoring and the party responsible for such monitoring are also listed in each table.

5.2.3 Emergency Numbers

Emergency numbers for the police, ambulance, fire brigade, Regional Health Inspector or the Ruacana Town Council, Managing Member/Factory Manager, etc. should be displayed on the office board in the office at the processing facility.

5.2.4 **Decommissioning**

Ongaka has been in operation for over twenty years now. Considering the huge investment made by its management in the form of the processing facility equipped with state of the art cutting and polishing machineries, combined with the massive slate resource exploited by the company, and the valuable skills and experience gained up by its workforce over the years, Ongaka is destined to be operational for many years into the future.

The proposition for continuous operation is also supported by the strong demand for construction materials needed in the built environment, especially in the company's target market with a growing number of end-users located in the regions of Omusati, Oshana, Oshikoto, Ohangwena and Kunene. Nationally, the housing shortages has been estimated at 300 000 housing units (*Derek Klazen, Deputy Minister, Urban and Rural Development, published in The Namibian newspaper of 21 September 2020*). Assuming that a third of that shortage is within Ongaka's target market, the company is set to enjoy a substantial share of the natural stone market. There are no plans by the promoter to discontinue with the operation, hence there is no provision made for decommissioning in this EMP.

Should closure and decommissioning of Ongaka be contemplated, an extensive decommissioning plan will have to be drawn up and meticulously followed according to the highest standards of environmental management best practices. The objective for closure will be to return the quarry as closely as possible to the pre-quarrying condition while the processing facility could be utilised for other services since it is located within an urban land. Measures will be taken to prevent soil erosion and provide protection so that plants and vegetation can recolonise. A site assessment will be carried out after closure to ensure that no structures remain and that site rehabilitation has been fully achieved.

TABLE 2: ROLES & RESPONSIBILITIES OF PARTIES							
Role Player Responsibilities							
The Environmental Commissioner (EC)	The Environmental Management Act (EMA) is implemented by the Office of Environmental Commission which resorts under the Ministry of Environment, Forestry and Tourism (MEFT). The Environmental Commissioner (EC) is a statutory office responsible for ensuring and enforcing compliance with the relevant environmental legislations and regulations. Amongst the roles and responsibilities of the EC are the following: • granting of ECC and renewals thereof; • ensuring overall compliance with the provisions of the EMP; • reviewing this document and any revisions thereof; • undertaking site audits at their discretion;						

TABLE 2: ROLES 8	RESPONSIBILITIES OF PARTIES
Role Player	Responsibilities
	reviewing environmental audit reports;
	reviewing of major environmental related incidents/accidents, and
	enforcing legal mechanisms for contraventions to the EMP.
The Mining Commissioner (MC)	Ongaka is a beneficiary owner of 8 Mining Claims pegged in terms of the Minerals Act. The Mining Commissioner (MC) is a statutory appointment made by the Minister of Mines and Energy in terms of Minerals Act with these roles and responsibilities: • to grant Mining Claims, renewal and refusal thereof; • to ensure overall compliance with the provisions of the Minerals Act pertaining to Mining Claims; • to undertake inspections/visits to the Mining Claims at their discretion; • to review monthly/annual mining reports submitted by the Mining Claim holder, • to issue export permits for mineral products mined from such Mining Claims; • to levy and collect royalty from mineral rights holders where, applicable; and • to enforce legal requirements for any contraventions of the Minerals Act pertaining to Mining Claims.
	Amongst the key areas of responsibility of Ongaka Management are:
	 to ensure that the necessary environment authorizations and permits are obtained, complied and copies kept in the office; to ensure that the provisions pertaining to Mining Claims are complied with at all times;
	 To ensure compliance with all applicable legislations, regulations and policies pertaining to its sphere of operation; To maintain good, open communications with all stakeholders and authorities including reporting of any significant environmental incidents and or accidents;
	To ensure that all employees (new and old) are inducted and trained on the importance of complying with the EMP.
	To appoint two experienced and skilled persons, one with the designation of Quarry Supervisor and another one with the designation of Factory Super or Factory Manager.
Ongaka Management or Managing Member (MM)	 7. Minimum Roles and Responsibilities of the Quarry Supervisor (QS): To supervise all the resources (both manpower and machinery) allocated to the quarrying operation; To oversee the quarrying activities in the Mining Claims – overburden stripping and extraction of slabs; To ensure that the quarrying activities are conducted in a safe and hazardous free environment To ensure that the mitigation measures as detailed in the EMP are implemented correctly and effectively for all the activities as outlined. To ensure that pre-start checks are completed for the two pieces of machinery used in the operation (tipper truck and frontend loader). To ensure that all employees have suitable PPE. To report all environmental incidents to the Managing Member Hold daily meetings (tool box talk) with the crew to discuss the current operational activities and the health, safety and environmental issues associated with such activities. Receive visitors to the quarry site and ensure that PPE are worn
	 8. Minimum Roles and Responsibilities of the Factory Supervisor /Factory Manager: To oversee the processing facility with all the resources allocated to it. To ensure that the provisions of the EMP are complied with. To conduct daily inspections of activities and mitigation measures with corrective actions taken and recorded where applicable.

TABLE 2: ROLES & RESPONSIBILITIES OF PARTIES							
Role Player	Responsibilities						
	 To manage all personnel at the Processing Facility. To ensure that PPE are worn by employees working in dusty/noisy areas. Report all environmental incidents to the Managing Member. Hold daily meetings with the processing crew to discuss the current operational activities and the health, safety and environmental issues associated with such activities. Receiver visitors and clients to the processing plant and ensure where appropriate PPE are worn. 						

TABLE 3 EMP WITH RESPECT TO LAND AND SOIL DISTURBANCES							
Environmental Objective	Ensure that limited land disturbance is made and that an overburden management plan is developed which covers the rehabilitation of worked out areas on an ongoing basis.						
	Mining Claims:						
	Removal of overburden to expose the mineral grade slates had inevitably involved some form of land disturbances which could lead to increased risk of erosion unless mitigation measures are complied with.						
Potential Environmental Impact	The impact of land and soil disturbance is localized and limited to the footprint of extraction area not exceeding 300 m per year.						
	Processing Facility:						
	None – the facility has been developed and infrastructure and services installed with a suitable drainage system. Water used in the cutting and polishing is recycled.						
	Mining Claims						
	1. Overburden : Topsoil down to a depth of 200 mm must be stockpiled for future rehabilitation. Where topsoil is not used within one year, it should be leveled, contoured and natural grass allowed to grow over the heap. Practical measures should be taken to minimise short and long term soil erosion.						
	2. Vegetation: Where mature trees (with trunk diameters larger than 250mm) are encountered, such trees should not be uprooted but should be preserved within the MCs. If material is only available around significant mature trees, a radius of soil of at least 3 m should be kept around the base of the trunk. The roots may not be exposed.						
Recommended Mitigation	3. Internal Quarry Routes : Any new quarry routes should be well planned and sited away from sensitive areas including natural water streams.						
Measures	4. Aesthetic & Erosion : Areas temporarily disturbed during quarrying or where the slates have been extracted should be identified, graded and rehabilitated to improve aesthetics and reduce incident of erosions during the wet season.						
	 Rehabilitation: Quarried areas should be rehabilitated promptly and not left un-rehabilitated for longer periods. 						
	6. Monitoring: Since no quarrying operations are conducted during the wet period, an erosion monitoring procedure should be developed whereby all active quarrying areas and all internal routes are visually monitored prior to and immediately after the rainy season. Erosion gullies and areas requiring repairs and restoration should be fixed. Areas where erosion was remediated previously should also be monitored.						
	Processing Facility:						
	Facility already established, no impacts expected.						
Monitoring Frequency	All active areas must be inspected once annually before and immediately after the rainy period.						
Responsible Persons	Quarry Supervisor & Ongaka Management						

TABLE 4:EMP ON DUST GENERATION AND AIR POLLUTION							
Environmental Objectives	Protect health and amenity values by ensuring that dust and gaseous emissions from the quarrying and value addition activities are minimised.						
	Mining Claims:						
	Quarrying of slates is conducted using hand tools and two machines (loader and tipper truck) with minimal dust emissions. Minimal dust is also generated from the bush road but on average only one truck load is hauled per day.						
Potential Environmental	Processing Facility:						
Impact	Cutting and polishing of slates is done with machinery which require constant supply of water to the cutting blades, hence no dust is generated.						
	The facility is also located at the corner of C35 and C46 tar roads which are used by many motorists in the area.						
	Mining Claims:						
	Dust: Extraction of slates does not generate dust but minimal dust is generated during the handling, stockpiling and loading into the tipper truck. On average quarrying is conducted over six months of the year.						
	Cutting and polishing: No dust is generated during the cutting and polishing of slates.						
Recommended	3. Speed limits: Keep speed limit to 20 km per hour when travelling on the single track road. (In fact, the nature of the bush road is in a state which does not make driving over 30 km per hour possible.						
Mitigation Measures	PPE: Employees working in areas where dust may be generated should be provided with suitable PPE including dust masks.						
	 Equipment Maintenance: Vehicles, both trucks and LDVs should be properly maintained and regularly serviced to reduce gaseous emissions. Unnecessary idling and revving should be avoided. 						
	Processing Facility:						
	Cutting of slabs is done with water applied to the cutting disk and therefore no dust is generated. Most of the yard is also spread with slate pieces hence reducing dust generation.						
Monitoring Frequency	On-going throughout the quarrying period.						
Responsible Persons	Quarry Supervisor & Ongaka Management						

TABLE 5: EMP ON NOISE IMPACTS							
Environmental Objective	Enhance and protect amenity values by ensuring that noise levels are minimized.						
	Mining Claims:						
	Sources of noise at the quarry are as a result of the working actions of the machines (loader & tipper truck)						
	Slate is extracted using hand tools crowbars & picks and there is thus no vibration.						
Potential	3. No drilling and blasting are conducted in the mining.						
Environmental Impact	Processing Facility:						
	Source of noise at the value addition facility is the grinding action of saw machine cutting the slate and polishing machine.						
	Limited noise is also generated by trucks delivering and loadings finished products.						
	3. The factory is at the intersection of C35 and C46 tar roads – two public roads which are relatively used by many vehicles per day.						
	Mining Claims & Processing Facility						
	 Working Hours: Noise generation must be kept to a minimum and operation activities must be confined to normal day light hours: 07h00-17h00 (Monday to Friday) 						
	No work on Sundays and public holidays						
	 Noise Abatement: Apart from confining noise to normal work hours, the following noise abatement measures (reduction of intensity and amount) should be implemented: 						
Recommended	 Ensure machineries are properly maintained (replace defective silencers, etc.). 						
Mitigation Measures	Operate equipment at the minimal power required to undertake required						
	 task. Machineries at the processing facility must be switched off when not in use. 						
	 Ensure all machine operators are well trained and well acquainted with the provisions of this EMP. 						
	Ensure that noise levels meet the statutory requirements and acceptable standards.						
	Employees working in areas where noise levels are high must be provided with suitable PPE.						
	Keep equipment in good repair and attend to loose or rattling covers, worn bearings and broken equipment.						
Monitoring Frequency	On-going throughout the quarrying and processing activities.						
Responsible Persons	Quarry Supervisor & Ongaka Management						

TABLE 6: EMP ON	WASTE HANDLING AND DISPOSAL				
Environmental Objective	Enhance and protect amenity values by promoting a hygienic and waste-free work environment.				
Potential Environmental Impact	Vaste at the quarry is limited to general household waste (plastics, food items, etc.) and Hazardous waste (spilled oil, used filters, etc.). Processing Facility: Vaste at the factory is limited to general household, office waste and hazardous waste (used oil, filters, etc.).				
Recommended Mitigation Measures	 Mining Claims General Waste: Waste from the Mining Claims is stored in waste bins which are brought to the factory on a weekly basis and disposed of together with the general waste from the factory, at the landfill site of the Ruacana Town Council. Hazardous Waste: At the Mining Claims waste of hazardous nature (used oil, filters, etc.) should be placed a in leak-proof container and brought to the factory on the same date with the tipper truck and kept at the factory and disposed of together with hazardous waste generated at the factory at an approved offsite landfill site. Spilled oil: Any spilled oil/fuel at the Mining Claims and the factory should be handled by scooping out the contaminated soil patch immediately when a spill occurs. The oil soaked soil should be stored in a leak-proof container and disposed of at an approved landfill site. Waste Burying: No waste must be buried or burned at the Mining Claims or at the factory. All waste must be disposed of in a responsible and safe manner. Sewerage: Sewage from the onsite ablution facility should be collected by the Ruacana Town Council and not discharged directly into the environment. Waste Bins: An adequate number of separate waste bins for hazardous and domestic/general waste must be provided and clearly marked as such. Processing Facility Apply the same management measures as for Mining Claims above, except 1. 				
Monitoring Frequency	Handle waste daily. Dispose weekly to Ruacana Town Council landfill site.				
Responsible Persons	Mining Supervisor (Quarry) & Management				

TABLE 7: EMP ON SURFACE AND UNDERGROUND WATER					
Environmental Objective	Ensure water is used sparingly since it is a scare resource and very expensive				
Potential Environmental Impact	 Mining Claims: The quarrying operation does not require the use of water. The water required is for drinking and cleaning purposes. The water is sourced from borehole located within a walking distance of the MCs. Site inspection did not reveal any natural surface water sources within the immediate surrounds of the MCs. There are several dry river streams around the MCs. Processing Facility: Piped water is connected to the site. Limited water is required for the cutting and polishing activities. Ablution facilities are available on site for the employees 				
Recommended Mitigation Measures	 Mining Claims Blocking: Overburden (topsoil) may not be stockpiled in such a way that they block natural water channels. Pollution: Prevent pollution of surface water by correct handling, storage and disposal of proper hazardous products (fuel, lubricants, etc.) Sedimentation: Water used in the processing is recycled and sedimentation should be disposed of in a responsible manner without contaminating natural water channels. Ablution Facilities: Prevent or minimize potential pollution of surface water as a result of insufficient and poorly maintained ablution facilities Storm Water: Before the start of any wet season, all storm water systems must be carefully inspected to ensure that all structures are functional and will not cause soil erosion during the rain period. Processing Facility Apply same management measures as for Mining Claims in 2-5 above. 				
Monitoring Frequency	Inspect annually, once before and after the rainy season.				
Responsible Persons	Quarry Supervisor & Ongaka Management				

TABLE 8: EMP ON FUEL HANDLING AND MANAGEMENT				
Environmental Objective	Protect amenity values and business efficiency by ensuring that any adverse impacts from re-fueling and handling of fuel is minimized			
	Mining Claims:			
Potential	The scope and scale of the operation (quarrying) does not require the storage and handling of large quantities of fuel and related products (oil, lubricants, etc.). In fact, there is only one piece of equipment (frontend loader) kept permanently at the MCs.			
Environmental	Processing Facility:			
Impact	There are three trucks and two LDVs used in the operation that are kept at the processing facility. There is no fuel storage installed and therefore no bulk fuel is kept at the factory.			
	Grease and lubricants are procured when the need arises.			
	Mining Claims			
	 Designated Area: Fuel may only be stored within a designated area in the manner as provided for in the Petroleum Act. Any temporary fuel storage must take place within a designated area. No storage of fuel may take place on any other portion of the site. 			
	Fuel Transport: Fuels and oil for frontend loader at the quarry should be transported in approved containers such as diesel bowser. No more than 300 liters may be transported and stored at the quarry.			
Recommended Mitigation	 Fueling: Any re-fueling at the Mining Claims or Processing factory must be done on a hard impermeable surface or over drip pans to ensure spilled fuel is captured and cleaned up. Defective hoses, valves and containment structures should be promptly repaired 			
Measures	4. Storage: Any fuel not immediately used should be kept in a suitable container and stored away at a designated place. Fuel may not be stored within 30 meters of a watercourse or near wetland areas where there is a potential for any spilled fuel to enter a watercourse or groundwater. Fuel storage facilities should be located on flat ground.			
	 Airtight Containers: Fuel stored in onsite airtight containers should be used within three days and containers drained and cleaned. Under no circumstances may unused or waste fuel be discarded onsite. All unused or waste fuel should be brought to the processing facility for disposal. 			
	Processing Facility			
	Same management measures as for Mining Claims should apply.			
Monitoring Frequency	Handle any spill immediately when it occurs. Inspect and check any storage monthly.			
Responsible Persons	Quarry Supervisor & Ongaka Management			

TABLE 9: EMP	ON FLORAL DIVERSITY		
Environmental Objective.	Minimise destruction of the natural vegetation and ensure that the integrity of the ecosystem is maintained and upheld throughout the production lifespan of the operation.		
Potential Environmental Impact	 From time to time extraction or quarrying is moved to virgin areas within a Mining Claim. In the process of establishing new extraction areas, vegetation is often cleared. Within a Mining Claim, internal routes are also extended to such virgin areas which inevitably involves clearing of some vegetation Access to the Mining Claims is provided by a single track road of about 6 km long. The bush road is shared with cattle herders/farmers in the area. Processing Facility: The processing facility is built on a 10 000 m² (1 ha) and has been fenced in and all infrastructure (water, electricity, etc.) installed. Within the yard, big trees have been preserved. 		
Recommended Mitigation Measures	 New Quarrying Area: New extraction/quarrying sites must be well planned and clearly demarcated. All quarrying activities must be confined to the limits of each Mining Claim. Internal Routes: Any new route to a new quarry area within a Mining Claim must be well planned and demarcated and prepared with minimal destruction to natural vegetation and plants. Movements within Mining Claims must be restricted to such routes. Big Trees: Where slates occur around big trees, a safe zone of 3 m from the tree trunk should be maintained Fire: No open fire is allowed within the quarrying area. Fire may be made at the site camp but under direct supervision. Firewood: Cutting down trees for purposes of harvesting firewood or any other purpose is strictly forbidden. Bird nestling: Any bird nestling in trees located within any Mining Claims may not be disturbed. Processing Facility: No impact is expected because the facility and all associated infrastructure and services have been installed. 		
Monitoring Frequency Responsible	Any time before moving to a new mining area. Management must act immediately whenever a complaint has been reported.		
Responsible Persons	Quarry Supervisor or as delegated by Management.		

TABLE 10: EM	P ON FAUNAL DIVERSITY				
Environmental Objective	Minimise the destruction of habitat by ensuring that the integrity of the ecosystem is maintained and upheld throughout the production phase of the operation.				
Potential Environmental Impact	 From time to time, quarrying of slates in moved to virgin area within a Mining Claim and internal routes are also extended to suc areas which inevitably cause destruction of habitats, but th footprint is fairly small and does not exceed 500 m² per year. Quarried slates is also stockpiled before loading and transporting the processing facility. New stockpile areas will also result in habitate destruction but the footprint is very small and does not exceed 3 m². Processing Facility: No impacts expected since the facility is already established an 				
Recommended Mitigation Measures	 Mining Claims Mining Activities: Mining of slates should take place within the confines of each Mining Claim and the activity should be preceded by careful planning, surveying and demarcation of such mining areas. Sensitive habitats should be avoided. Fencing: No fencing of quarrying areas is recommended because the extraction excavation are quite shallow and do not pose any danger to the livestock in the area. Hunting: Hunting and or killing of wild animals or livestock grazing in the area is strictly forbidden. Ostriches are quite common in the area. Reptiles: Killing of snakes and or similar reptiles within and outside the Mining Claims is strictly forbidden expect in instance where such creatures pose a danger to the lives of the workers. Rehabilitation: Worked out areas should be promptly rehabilitated and made safe for free movements of livestock and wildlife. Waste: No plastics should could left lying around because they could be fatal to livestock. Processing Facility: No impact is expected. 				
Monitoring Frequency Responsible Person	Any time before starting a new mining site, otherwise management must act immediately whenever a complaint has been laid. Quarry Supervisor or as delegated by Management.				

TABLE 11: EMI	TABLE 11: EMP ON ARCHAEOLOGICAL ASPECTS			
Environmental Objective	Safeguard and protect any findings of Archaeological and or Cultural Heritage nature that may be encountered during the quarrying activities.			
Potential Environmental Impact	 Should any archaeological remains including (but not limited to) fossil bones fossil shells, coins, indigenous ceramics, stone artifacts, bone remains, rock art, rock engravings and any antiquity be discovered, they must be immediately reported to the NHC and not disturbed further until the necessary permission is granted. In the unlikely event that any human remains are uncovered or any buriasites are discovered, quarrying activities in that area must be ceased immediately and the incident reported to the NHC and the Namibian Police Processing Plant: Not applicable – facility already developed. 			
Recommended Mitigation Measures	Archaeological Sites: Follow these procedures: If operating machinery or equipment, stop work immediately Demarcate the site with plastic warning tape Determine GPS position if possible; Report findings, site location and actions taken to CEO/Managing Member Cease any works in the immediate vicinity Contact NHC and request written permission to remove findings from work area; and Recover, pack and label findings for transfer to the National Museum or as otherwise advised by NHC Human Remains: Follow these steps should human remains be found: Apply the chance find procedure as described above; Schedule a field inspection with an archaeologist to confirm that remains are human; Advise and liaise with the NHC and the Namibian Police Once confirmed as human remains, the Namibian Police to recover/remove the remains and send either to the National Museum or to the National Forensic Laboratory in Windhoek. Processing Facility: Not applicable – facility already developed.			
Monitoring Frequency	On-going throughout the mining period			
Responsible Persons	Quarry Supervisor & Management			

TABLE 12: EMP WITH RESPECT TO TRAFFIC IMPACTS					
Environmental Objective	Ensure that the provisions of the traffic regulations with respect to loading, speed limits, vehicle roadworthiness, etc. are complied with at all times.				
	Both C35 and C46 Highways are public roads owned collectively by all the Namibian people and should therefore be used within the provisions of the traffic rules and regulations.				
-	Mining Claims &Processing Facility:				
Potential Environmental Impact	 Increased traffic flow is not expected on the single track road between the MCs and C35. A maximum of four truck loads are hauled per day. 				
	The operation has not resulted in any noticeable increase in road traffic on both C35 and C46 tar roads.				
	Mining Claims & Processing Facility				
	Good Signage: Consult Road Fund Administration for permission to install signage at the processing facility to warn road users approaching the processing facility of possible trucks leaving or entering the processing facility at the intersection of C35 & C46 tar roads.				
	Roadworthy: Ensure that all vehicles and trucks entering or leaving the processing facility are licensed and roadworthy.				
Recommended Mitigation	3. Overloading: Ensure that no overloading takes place. This applies to the haulage truck delivering slates and to all trucks delivering finished products to end users. At this point, the scope of the operation does not justify the procurement and installation of a weighbridge.				
Measures	 Spillage: Ensure that raw slates hauled from the quarry to the factory is properly secured on the tipper truck so that no spillage occurs on C35. Spillage of slates on tar road has the potential to endanger the lives of other road users. 				
	 Traffic Regulations: All vehicles should adhere to speed limits on both C35 and C46 roads as well as to all applicable traffic regulations. Repairs and maintenance of vehicles should be attended to promptly. Vehicles should also be cleaned at designated places. 				
	 Good Maintenance: All trucks and LDV should be regularly serviced and maintained to prevent fuel leaks, unnecessary breakdowns on the roads, to avoid excessive smoking, etc. 				
Monitoring Frequency	Daily, whenever hauling raw slates and delivering finished products.				
Responsible Persons	Factory Manager & Ongaka Management				

TABLE 13: EMI	P ON THE HUMAN ENVIRONMENTAL IMPACTS				
Environmental Objectives	 Optimise benefits to the local people. Strike a good positive balance between economic, social and environmental responsibilities. Provide opportunities for local business, promote industrial relations, and otherwise contribute to socio-economic stability 				
Potential Environmental Impact	Mining Claims & Processing Facility The operation conducted by Ongaka at Ruacana has made a positive impact on the economy both at the local and regional level by creating direct employment opportunities and also by the manufacturing and supply of the much needed construction materials. The operation has made positive impacts on the built environment in the northern regions of Namibia. The capital investment made by Ongaka and the ongoing procurement of consumables used in its operation from local suppliers have had a positive impact on the local economy with a multiplier effect which extends on to the salaries and wages paid to its employees which in turn are spent on goods in the local economy.				
Recommended Mitigation Measures	 Mining Claims and Processing Facility Health & Safety Plan: The health and safety of all employees should be protected and safeguarded at all times. Emergency Response: Develop an Emergency Response and Procedures Framework for the operation to deal with any safety incidents occurring. Employee Hygiene: Provide adequate ablution facilities with toilets having properly closing doors and supplied with toilet papers. Ensure that ablution facilities are cleaned regularly. A portable toilet should be permanently kept at the MCs and emptied on a regular basis. Dust-free Environment: Maintain levels of contaminant dusts, vapors and gases in the work environment at acceptable levels. Training: Ensure that all employees including any contractors hired to do any work at the factory, are properly trained and acquainted with the EMP. Toolbox talks: Encourage and promote short safety meetings at the beginning each week, where employees under the leadership of a quarry and factory supervisors discuss aspects related to safety, environment, pre-start checks, refueling, safe working practice, wearing of PPE, the danger of coming to work under the influence of alcohol, drug abuse, etc. Housekeeping: Establish housekeeping rules which promote and address aspects related to waste removal, keeping the workplace clean and tidy, warning against the use of drugs and alcohol abuse, awareness on HIV/AIDS, Covid-19 protocols, 				
Monitoring Frequency	Ongoing throughout the operational lifespan.				
Responsible Persons	Ongaka Management				

6.0 THE UPDATED EMP

The EMP has been updated to reflect the following environmental parameters:

- · Monitoring Performances,
- Inspection Parameters and Schedules,
- Inspection Checklist, and
- Environmental Code of Conduct.

6.1 **Monitoring Performances**

A simplified environmental monitoring performance indicators has been added to the EMP and is intended to assist Ongaka management in early detection of environmental impacts, and to take corrective actions timely and where deemed necessary, as well as to report such impacts to the authorities.

Table 14: Monitoring Performances

Environmental Aspects & Mitigation Measures	Compliance	By Whom	Date Completed
1. Land and Soil Disturbances			
Has any new virgin land been cleared of vegetation for quarrying?			
How big is the area to be cleared?			
Has the area to be cleared properly planned, surveyed and			
clearly demarcated? Have the access routes to the new area been planned and clearly demarcated?			
Are there any big trees that need to be conserved within the identified area?			
Are there any sensitive habitats, i.e. bee colonies, birds nestling in trees in the area earmarked for clearing?			
2. Solid Waste Disposal (household waste, office, etc.)			
Are there any deviations from the provisions contained in the EMP on solid waste handling and disposal?			
Is the waste bin emptied and cleaned on a regular basis?			
Are there any litters around the quarry premises, windblown papers, plastics, empty bottles, etc. in and around the Mining Claims & Processing Facility?			
Has any follow up training been given to the employees on waste handling and management?			
Are the measures as recommended in the EMP adequate to deal with the solid waste generated by the quarrying operation?			
3. Oil Spillage and Used Oil			
Are there any deviations from the provisions in the EMP on oil spills and on how to handle used oil? Are steel drums provided in good conditions to prevent any leaks of oil from such drums?			
Are there any oil spills in the quarrying area & factory premises?			
Have the employees been trained on the procedure to contain any spills that may occur?			
Has the quantity of used oil been recorded and disposed of, in a responsible manner?			
Are clear records being kept on servicing of machinery, vehicles/trucks and equipment?			
4. Dust Impacts on Air Quality			
Are there any deviations from the provisions in the EMP on dust mitigation measures?			
Has any complaint been received from any stakeholders with respect to dust generated by the operation? Are internal routes within the Mining Claims properly maintained?			
Are topsoil stockpiles sited away from natural water channels?			
Are employees working in areas where dust is generated provided with PPEs or dust masks?			
5. Noise Impacts			

Are there any deviations from the provisions of the EMP on noise impacts? Are working hours being complied with? Is the tipper truck and frontend loader used in the operation regularly serviced and redundant exhausts replaced to ensure minimal noise generation? Has any complaint on noise been received from any stakeholders? 6. Landscapes and Visual Intrusions Are there any deviations from the provisions of the EMP with respect to landscape and visual impact mitigation measures? Is a high standard of housekeeping being maintained such that plastics and papers are regularly picked up and not blown around becoming visual annoyances? 7. Surface Water, Drainage and Underground Water Are there any deviations from the provisions of the EMP with respect to surface water, drainage and underground water? 7. Rurface Water, Drainage and Underground Water Are there any deviations from the provisions of the EMP with respect to surface water, drainage and underground water? 7. Rurface Water, Drainage and Underground water? 8. Traffic Impact on National Roads Are there any deviations from the provisions of the EMP on traffic impacts on national roads? 8. Traffic Impact on National Roads Are there any deviations from the provisions of the EMP on traffic impacts on national roads? 8. Traffic Impact on National Roads Are there any deviations from the provisions of the EMP on traffic impacts on national roads? 8. Traffic Industry of the processing facility from Ca3 and C46 directions of possible heavy duty trucks turning in or accessing the processing facility? 8. Traffic Industry of the provisions of the EMP on traffic impacts on rational roads? 9. Biodiversity (Fauna and Flora) 1. Are there any deviations from the provisions of the EMP on biodiversity? 9. Biodiversity (Fauna and Flora) 1. Are there any deviations from the provisions of the EMP on biodiversity? 1. Biodiversity (Fauna and Flora) 1. Biod	Environmental Aspects & Mitigation Measures	Compliance	By Whom	Date Completed
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6.2 Inspection Parameters and Schedules

The inspection parameters and schedule listed in **Table 15** below, are provided to be used as a guideline in the implementation of the EMP and for the maintenance of housekeeping rules.

Table 15: Inspection Parameters and Schedules

Inspection Parameters	Frequency	Responsibility
Compliance with the provisions of the EMP	At all times during the quarrying activities	Management
Loader, Trucks & LDVs: Pre-start checks General conditions & cleanliness No overloading No spills from loaded trucks	Daily, at the beginning of each shift Daily, at the beginning of each shift Daily, during loading operations Daily, during the loading of trucks	Each Machine Operator
Littering at MCs and Processing Facility: Quarry Site Camp Quarry access routes Finished product stockpile section Parking section Along perimeter fence and berms	Daily Daily Daily Once weekly Biweekly	QS & FM
General Conditions	Biweekly Weekly Weekly Weekly Daily	QS & FM
Dust Control Measures Topsoil excavation Stockpiles of topsoil Loading & Hauling Quarry internal routes	When quarrying When drill Daily, when loading	QS & FM
Erosion Control (Rainwater) Quarry slopes Topsoil stockpiles Product stockpiles Internal access routes	Before, during & after rainy period	QS & FM
Hazardous waste and or spills oil, fuel & lubricants, etc.	When reported	QS & FM
Waste Disposal Household & office waste Hazardous waste (old batteries, oil filters, etc.) Scrap metals, old tyres, etc. Sewage	Weekly Twice yearly Once yearly or as the need arise Once yearly or as the need arise	QS & FM
Noise nuisance (idling, revving, hooting, etc.)	Daily, during work hours	QS & FM
Good housekeeping practices	Daily	QS & FM
Effective vegetation cover on mined out areas	Post rehabilitation	QS & FM
Overall Operational Environmental Audit	Annually	Ongaka Management

Note: The overall responsibility for ensuring that cleaning and the proposed inspections are carried out is vested with the Ongaka Manager who may delegate such functions to junior staff members as deemed appropriate.

6.3 Environmental Inspection Checklist

The environmental inspection checklist in **Table 15** is provided as a guideline to help improve and cultivate a culture of safeguarding the environment and should be improved upon by Ongaka Management.

Table 16: Environmental Inspection Checklist

ltem	Yes	No	N/A
Date of Inspection:			
Checked by:			
Copy of the EMP available and readily accessible			
Name of the Quarry Supervisor is clearly displayed			
Name of the Factory Manager/ Foreman			
The Following Information must be displayed on a Notice Board at the site office:			
Contact number of Regional Health Safety Officer.			
Contact number of the Local Police Charge Office.			
Contact number of nearest Ambulance.			
Contact number of the Local Primary Health Clinic is displayed.			
Contact number of nearest regional Fire Brigade.			
Training of Employees			
 Is suitable training provided to each newly person assigned to a job? 			
Are all employees offered training on the provisions of the EMP?			
 Is adequate instructions on the use of PPEs provided? 			
Has training on the use of emergency equipment provided?			
 Has training offered provided a thorough review on hazardous associated with the job? 			
Ha the training stressed the importance to comply with the EMP?			
Has a follow up training been provided?			
Response Plan to Incidents and Accidents			
Has a plan been drawn up to deal with any incident or accident which may arise?			
Has the plan been communicated to the employees?			
Are all employees aware and know of what to do in case of a serious incident or			
accident occurring? • Is there an Emergency Assemble Point which is clearly marked and known by all			
employees? Fire Emergency Procedures			
Is there a clear fire response plan for the processing facility? Do the workers know the plan and what to do in the quest of a fire outbrook?			
Do the workers know the plan and what to do in the event of a fire outbreak? Levy regularly are fire drille hold?			
How regularly are fire drills held? Are the leasting of the outline with an eleastic module and accessible?			
Are the locations of the extinguishers clearly marked and accessible? Are all outlinguishers fully charged and in working orders?			
Are all extinguishers fully charged and in working orders? Housekeeping			
Housekeeping			
Are the working areas clean and orderly? Are there are used to be a provided to all working ageticans?			
Are there enough waste bins provided to all working sections? As the group of the form of the section of			
Are the permanent walkways clearly marked and kept clean? As the obligious facilities well used the obligious and assistance.			
Are the ablution facilities well ventilated, kept clean and sanitary?			
Are waste bins regularly emptied?			
Are all facilities at the quarry site camp in good repair?			<u> </u>
Medical and First Aid			
Is the first aid kit kept well stocked?			
Do all employees know where to get first aid?			$oxed{oxed}$
Are there employees well trained to provide first aid?			
Personal Protective Equipment (PPE)			

Item		Yes	No	N/A
Is required PPE provided, correctly used and properly maintained?				
Is the PPE provided of g	ood quality and meeting industry standards			
Are warning signs clearly displayed where the wearing of PPE is mandatory?				
Land Clearing for new Quarrying Activities				
 Is land to be cleared of v observations? 	regetation preceded by detailed planning and physical			
Has the size of the land ascertained?	surveyed and the extent of slates mineralization accurately			
Is the number of big tree	s on that land ascertained?			
Are there any /birds nest	tling on such trees?			
Are internal routes to such	ch land pre-planned and clearly demarcated?			
 Are the areas where to s demarcated? 	site stockpiles for topsoil and products planned and clearly			
Quarry Internal Routes				
Are internal routes proper	erly demarcated, spill free and well maintained?			
Are truck movements in	and out of the quarry restricted to one internal route?			
Rehabilitation of Worked Out Areas				
Are worked out areas pro	ogressively rehabilitated in tandem with quarrying?			
 Is vegetation growth esta quarry? 	ablishing on topsoil stockpiles and on the slopes of the			
limit such impacts?	rm water erosion identified and measures put in place to			
Waste Management				
 Is the quarry site kept free 	ee of litters, clean and neat?			
Are waste bins emptied of	on a regular basis and kept clean and tidy?			
 Is hazardous waste kept bunded areas? 	in steel drums that are secured, leak-proof and stored in			
Have employees been tr thereof?	rained on the different types of waste and handling			
Traffic Management				
Are trucks operated on p licensed drivers?	public roads licensed and roadworthy and operated by			
Are speed limit on public	roads respected by the operators?			
How often are plants and leaks and or oil spills?	d trucks serviced to avoid breakdowns and associated oil			
 Is refueling of frontend to of dip trays? 	pader done on a hard impermeable surface or is use made			

6.4 Environmental Code of Conduct

To improve its overall environmental compliance measures as stipulated in the EMP, it is proposed to recommend a set of Environmental Code of Conduct which Ongaka Management should strive to implement bot at the MCs and processing facility.

The code of conduct should apply to all current and future employees of Ongaka, clients visiting the quarrying premises, contractors hired to perform certain functions at the quarry such as the electrical or mechanical works and any visitors entering the processing facility.

In terms of this Environmental Code of Conduct, Ongaka Manager is authorized to issue warning and to discipline any person who transgresses environmental rules and regulations.

Table 17: Environmental Code of Conduct

ENVIRONMENTAL CODE OF CONDUCT

HEALTH AND SAFETY GUIDELINES

Covid-19 Protocols:

- Respect the regulations provided for the Covid-19 pandemic,
- · Wear a suitable face mask,
- · Sanitize your hands regularly,
- Avoid large social gathering such as weddings, bars, funerals, etc.
- · Seek treatment when feeling unwell, and
- · Get vaccinated.

Water:

- Do not drink water collected in the quarry pit.
- Only drink water supplied by the company or purified water.

HIV/AIDS Virus:

- Take the necessary precautions to avoid contracting the HIV/AIDS virus.
- Take the necessary precautions to avoid contracting diseases.

Restricted Areas:

- Do not enter an areas marked as restricted or demarcated as dangerous, i.e. bad hanging rocks.
- Do not enter any area that is out of bound or fenced in by climbing over the fence without the permission of the Manager.
- Do not enter an area marked 'PPE required' unless wearing suitable PPE.

Housekeeping Rules:

- The use of drugs on duty or at the site camp is strictly forbidden.
- Coming to work while intoxicated is strictly forbidden.
- Limited use of alcohol at the site camp site may be allowed.
- Possession of a firearm at work or at the site camp is strictly forbidden.

FAUNAL AND FLORAL MANAGEMENT GUIDELINES

Faunal Guidelines:

- No feeding, teasing or playing with, hunting, killing or setting devices to trap wild animals (including birds, reptiles and mammals) and livestock is allowed.
- No food items should be left around to attract animals, birds and or insects. Leftover food items must be placed
 in waste bin with lids such that animals do not gain access.
- Feeding wildlife (e.g. baboons) should be discouraged as it leads to conflict situations between wildlife and humans.
- When clearing land for quarrying purposes, any sensitive habitats where animals are breeding should be avoided.

Floral Guidelines:

- No cutting or harvesting of any plants and or trees for whatever purposes is allowed. Dead trees within the quarry premises maybe collected for firewood.
- Trees in which birds are nestling must be avoided and not uprooted. Any bird nestling must not be disturbed.
- Internal routes should not be sited over sensitive habitats for plants.

GUIDANCE WITH RESPECT TO DISPOSAL OF SOLID AND LIQUID WASTE

- Train employees on the various types of waste: general waste and hazardous waste
- Train employees on how to identify waste bins, drums or bags for the different types of waste.
- Train employees not dispose hazardous waste in the bins or skips intended for general waste.
- Educate employees to appreciate the importance of not littering or throwing away waste anywhere on the quarry/factory, not to throw waste in the field or along the road.
- Under no circumstances should waste be buried on site.
- Waste in bins should be disposed of at regular intervals and the bins cleaned and the surrounds kept clean and tidy.

GUIDELINES WITH RESPECT HAZARDOUS WASTE

- Hazardous substances such as oil, fuel, solvents, chemicals, etc. should not be discharged into natural water streams or buried in the soil.
- Any accidental spills of hazardous substances must be immediately contained and corrective action taken. All hazardous spills must be reported to the Quarry Manager.
- Under no circumstances may hazardous substance waste be allowed to soak into the soil.
- Any leaks or spillage of hazardous substances, unhygienic conditions at the ablution facilities must be immediately reported and corrective measures taken.

GUIDELINES WITH RESPECT TO ENVIRONMENTAL RELATED COMPLAINANTS

ENVIRONMENTAL CODE OF CONDUCT

- Any complaint reported by any stakeholder with respect to working conditions, noise, dust, violations of road regulations by truck operators, pollution or any other harmful or dangerous condition must be recorded, investigated and corrective action taken.
- Where warranted, feedback should be provided to the complainant.

7.0 CONCLUSION AND RECOMMENDATION

7.1 Conclusion

Ongaka is a small company which has been successfully managed in that it has been in business for over twenty years now. The company is manufacturing construction materials that are vital for the local built environment. An ECC was issued to Ongaka for the first time in January 2019 but has since expired. Over the last three years, the local construction sector has been hit hard by an economic recession which resulted in massive job losses estimated at 60 000. Ongaka has not been spared.

In preparation for this renewal application, the operation was visited by Ekwao Consulting and it was evident that very little activities have been conducted since the ECC was granted.

With about 50% of the Namibian population resident in the northern regions, the operation has a vital and beneficial role to play in the economic setups of such regions and should be supported. Minimal disturbance to the environment should be expected, but with the recommendations as suggested in this updated EMP, and the fact that Ongaka Management is committed to implementing such measures, the mining of slates and processing thereof can be carried out, in a manner which is technically feasible and environmentally sustainable.

7.2 Recommendation

Based on the environmental compliance inspection conducted, the quarrying operation is very well organized and management is committed to implement and to comply with the provisions of the EMP.

It is recommended that the ECC be renewed.