# ENVIRONMENTAL MANAGEMENT PLAN FOR CONSTRUCTION AND OPERTION OF MARBLE SLAB WAREHOUSE.

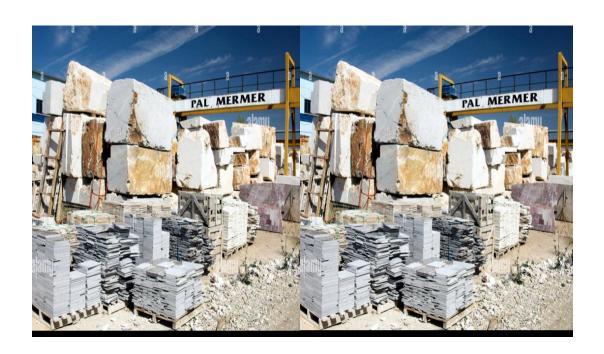
PROPONENT: SANLI CONSTRUCTION CC

LOCATION.: WALVIS BAY ERONGO REGION, FARM NO 38

EAP : ADVANCED ENVIRONMENTAL AGENCY

CONSULTANTS CC.

RELEASED: 11 APRIL 2022



# **Table of Contents**

1.INTRO	DUCTION	3
2.SITE LO	DCATION	3
1. OVER	VIEW OF THE EMP	3
1.1. 1.2. 1.3. 1.4.	PROJECT INFRASTRUCTURE WATER SUPPLIER ROADS ABLUSION FACILITIES	4 4
LEGAL	AND POLICY FRAME OF WORK	6
4.ENVII	RONMENTAL MANAGEMENT PRINCIPLES	9
2. ROLI	ES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT	12
2.1. 2.2. 2.3. 2.4.	COMMUNICATION BETWEEN PARTIES THE OPERATING COMPANY SITE MANAGERS ENVIRONMENTAL CONTROL OFFICER (ECO)	1212
3. ENVI	RONMENTAL SPECIFICATIONS	
3.1. 3.2. 3.3. 3.4. 3.5. 3.6. 3.7. 3.8. 3.9. 3.10. 3.11. 3.12. 3.13.	COMPLIANCE WITH THE ENVIRONMENTAL SPECIFICATIONS  TRAINING OF SITE PERSONNEL AND CONTRACTORS  PERMITS  WASTE MANAGEMENT  FUEL, OILS AND OTHER HAZARDOUS SUBSTANCES  ROAD SAFETY  ACCESS TRACKS  CONSERVATION OF BIODIVERSITY  FIRE PREVENTION  WILDLIFE POACHING  HEALTH AND SAFETY  WORK STOPPAGE  COMPLIANCE MONITORING	
	MARY ENVIRONMENTAL MANAGEMENT PLAN ASPECTS (QUICK CHECKLIST)	
	NCESS	

#### 1.INTRODUCTION

Advanced environmental agency cc has been appointed by sanli construction cc to conduct an environmental impact assessment and prepare and environmental management plan for construction and operation of a marble slabs warehouse. the project happens to fall Under the listed activities in the (EMA of 7 2007).

#### 2.SITE LOCATION

Sanli construction cc (referred herein as 'The proponent') proposes to construct a and commence marble slabs operations of a warehouse in walvs bay at high industrial zoned area on a portion of land estimated 4ha size.

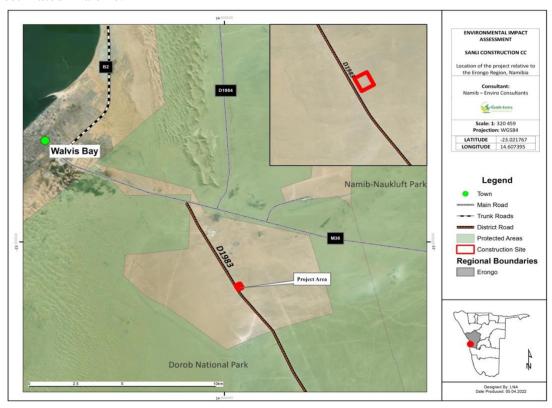


FIGURE 1: LOCALITY MAP

#### 1. OVERVIEW OF THE EMP

Advanced environment agency cc has prepared this document as part of the EIA report which was conducted in terms of the Environmental Assessment for construction and operations of a warehouse for marble slabs, the proponent intent to be keeping the products at a proposed site before exporting them by shipping. The content thereof has been designed as stipulated by the Regulations of the Environmental Management Act, 2007 (Act No 7 of 2007). The aim is to provide management measures to address the environment effects that have been identified in the EIA report and to give possible mitigation measures/recommendations to address these effects. It is essential for personnel involved on the ground to be fully aware of the possible environmental issues and the means to avoid or minimize the potential impacts of activities on site.

# 1.1. Project infrastructure

The project entails

- Load and offloading of marble slabs
- Storage of marble slabs using slab stands
- Water use and electricity
- trollies

The warehouse will have slab stands inside, and two offices trucks picking up and offloading.





# 1.2. Water supplier

The site falls under a services land where, therefore proposer connection daily consumption.

#### 1.3. Roads

Site falls just alongside D1983.

### 1.4. Allusion facilities

Toilet for men and woman will be provided.

LEGISLATION/POLI
CY/GUIDING
DOCUMENT

**Environmental Assessment** 

Policy of Namibia 1994

## **PROVISION**

PROJECT IMPLICATION

cultural,

The Environmental Assessment Policy of Namibia requires that all projects, policies, Programmed, and plans that detrimental effect on the environment must be accompanied by an EIA. The policy provides a definition to the term "Environment" broadly interpreted to include biophysical, social, economic, historical and political components and provides reference to the inclusion of alternatives in all projects, policies, programmed and plans.

- -Processing of wood products and manufacturing processes require environmental approval before they are undertaken.
- -Through abiding to the requirements of the Environmental Assessment Policy of Namibia. The EIA and EMP will cater for the sustainable management of biophysical environment.

# **Environmental Management** Act No.07 of 2007

The Act aims at

- ✓ Promoting the sustainable management of the environment and the use of natural resources by establishing principles decision-making on matters affecting the environment;
- ✓ To provide for a process of assessment and control of projects which may have significant effects on the environment;

The Act gives legislative effect to the Environmental Impact Assessment Policy. Moreover, the act also provides procedure for

This document is compiled in a nature that project implementation is in line with the objectives of the EMA. EIA guiding procedures developed by MET were also used in the course of this project.

# LEGAL AND POLICY FRAME OF WORK

LEGISL ATION/ POLICY /GUIDIN G DOCUM ENT	PROVISION	PROJECT IMPLICATION
The Constitution of the Republic of Namibia (1990)	The articles 91(c) and 95(I) commits the state to actively promote and sustain environmental welfare of the nation by formulating and institutionalizing policies to accomplish the sustainable objectives which include:  - Guarding against overutilization of biological natural resources,  - Limiting over-exploitation of non-renewable resources,  - Ensuring ecosystem functionality,  - Maintain biological diversity.	-Through implementation of the environmental management plan the proposed development will be in conformant to the constitution in terms of environmental management and sustainability, through bringing development in an environmentally sensitive way.
Vision 2030 and National Development Plans	Namibia's overall Development ambitions are articulated in the Nations Vision 2030. At the operational level, five-yearly national development plans (NDP's) are prepared in extensive consultations led by the National Planning Commission in the Office of the President. Currently the Government has so far launched a 4th NDP which pursues three overarching goals for the Namibian nation: high and sustained economic growth; increased income equality; and employment creation.	The proposed project, is an important element in employment creation, manufacturing industrygrowth as well as a contribution to achieving the Vision 2030 of the country.

LEGISLATION/PO LICY/GUIDING DOCUMENT	PROVISION	PROJECT IMPLICATION
	adequate public participation during theenvironmental assessment process.	
Public Health Act (No. 36 of 1919)	Under this act, in section 119:  "No person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or othercondition liable to be injurious or dangerous to health."	-The project proponent will ensure that all legal requirements of the project in relation to protection of the health of their employees and surrounding residents is protected as will be alluded in the EMPPersonal protective equipment shall be provided for employees in constructionThe development shall follow requirements and specification in relation to water supply and sewerage handling and solid waste management so as not to threaten public health of future residents on this piece of land.

LEGISLATION/		
POLICY/GUIDI	PROVISION	PROJECT IMPLICATION
NG		
DOCUMENT		
		accordance with Water
		Resources ManagementAct
		No. 11 of 2013.
National Heritage Act 27 of 2004	Heritage resources to be conserved in development.(National Heritage	During the project implementation as soon as objects of cultural and heritage interests are observed such as graves, artefacts and any other object believed to be older than 50 years, all measures will be taken protect these objects until the National Heritage Council of Namibia have been informed,
		and approval to proceed with the operations granted accordingly by the Council.
National Monuments Act of Namibia (No. 28 of 1969) as amended until 1979	"No person shall destroy, damage, excavate, alter,remove from its original site or export from Namibia:  (a) any meteorite or fossil; or (b) any drawing or painting on stone or a petroglyphknown or commonly believed to have been executed by any people who inhabited or visitedNamibia before the year 1900 AD; or (c) any implement, ornament or structure known orcommonly believed to have been used as a mace, used or erected by people referred to inparagraph (b); or	The proposed site of development is not within any known monument site both movable or immovable as specified in the Act, however in such an instance that any material or sites or archeologic importance are identified, it will be the responsibility of the developer to take the required route and notify the relevant commission.

LEGISLATION/POLI CY/GUIDING	PROVISION	PROJEC
DOCUMENT		

PROJECT IMPLICATION

	(d) the anthropological or archaeological contents of graves, caves, rock shelters, middens, shell	
	mounds or other sites used by such people; or  (e) any other archaeological or	
	paleontological finds, material or object; except under the authority of and in accordance with a permit issued under this	
Pollution Control and WasteManagement Bill	This bill has not come into force. Amongst others, the bill aims to "prevent and regulate the discharge of pollutants to the air, water and land" Of particularreference to the Project is: Section 21 "(1) Subject to sub-section (4) and section 22, no person shall cause or permit the discharge of pollutants or waste into any water or watercourse."  Section 55 "(1) No person may produce, collect,transport, sort, recover, treat, store, dispose of or otherwise manage waste in a manner that results in or creates a significant risk of harm to human healthor	-To control air, water and land pollution as agitated by the Bill, the project proponent will ensure that proposed project activities will abide by the EMP's specification in terms of pollution prevention to land, water and air during the construction and operation phases.
Atmospheric Pollution	the environment."  To provide for the prevention of the	-Dust emission from marble slabs processing is a great risk to the ambient
Prevention Ordinance 11 of 1976	pollution of theatmosphere, and for matters incidental thereto.	air quality, hence there will be strict abidance to this Act. Employee health and safety will also be prioritized.

# **4.ENVIRONMENTAL MANAGEMENT PRINCIPLES**

Sanli construction cc will ensure that all parties involved in the project follow company aims as listed as follows:

1) All personnel will be required to conduct activities in a manner that is environmentally and socially friendly. This includes all consultants, contractors, and sub-contractors, transporters, guests and anyone entering the operation warehouse area in connection with the project.

#### 2) Health, Safety and Social Well Being

- Safeguard the health and safety of project personnel and the public against potential impacts of the project. This includes issues of road safety, precautions against natural dangers on site, and radiation hazards; and,
- Promote good relationships with the surrounding settlements and other stakeholders.

#### 3) Biophysical Environment

- Wise use and conservation of environmental resources, giving due consideration to the use of resources by present and future generations;
- o Prevent or minimize environmental impacts;
- o Minimize air, water, and soil pollution; and
- o Conserve Biodiversity.

#### The following principles need to be maintained in order to attain the purpose of the project:

#### a) Commitment and Accountability

Company senior executives and line managers will be held responsible and accountable for:

- Health and safety of site personnel while on duty, including travelling to and from site in company vehicles: and,
- Environmental impacts caused operation activities or by personnel engaged in the operation activities.

/

#### b) Competence

The company will ensure a competent work force through appropriate selection, training, and awareness in all safety, health and environmental matters.

#### c) Risk Assessment, Prevention and Control

Identify, assess and priorities potential environmental risks. Prevent or minimize risks through careful planning and design, allocation of financial resources, management and workplace procedures. Intervene promptly in the event of adverse impacts arising.

#### d) Performance and Evaluation

Set appropriate objectives and performance indicators. Comply with all laws, regulations, policies and the environmental specifications. Implement regular monitoring and reporting of compliance with these requirements.

#### e) Stakeholder Consultation

Create and maintain opportunities for constructive consultations with employees, authorities, and other interested or affected parties. Seek to achieve open exchange of information and mutual understanding in matters of common concern.

#### f) Continual Improvement

Through continual evaluation, reports, and innovation, seek to improve performance with regard to social health and well-being as well as environmental management throughout the lifespan of the project.

#### g) Financial Provisions for Exploration

In line with the internationally recognized "polluter pays principle" the company will make the necessary financial provision for compliance with the EMP.

# 2. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT

#### 2.1. Communication between Parties

Emphasis will be put towards open communication between all parties, in order to reach a proactive approach towards potential environmental issues deriving from the project. This approach should guarantee that environmental impacts are anticipated and prevented, or minimized, rather than adopting a negative "policing" approach after negative impacts have already occurred.

The importance of a proactive approach cannot be overemphasized, particularly in relation to preventing unnecessary tracks, and damage to vegetation (i.e., protected and endemic species) as these impacts cannot easily be remedied.

## 2.2. The Operating Company

The company is ultimately responsibility for all stages of the project and the impacts resulting from those activities.

The responsible persons will be the company's Environmental Control Officer (ECO) and Managing Director to ensure that:

- The EMP and its environmental specifications are included in contractual documents and it is required that contractors, and subcontractors, consultants etc. do meet the EMP requirements;
- The company and all its subcontractors, consultants etc. comply with all Namibian legislation and policies and any relevant International Conventions;
- Compliance with the environmental specifications are enforced on a day-to-day basis;
- Environmental audits are conducted periodically by a suitably qualified ECO to confirm that the environmental requirements are properly understood and effectively implemented;
- Sufficient budget is provided to implement those measures that have cost implications;
- The Site Manager must commission tree surveys well in advance of planned road construction or drill pad preparation so that the necessary site visits by forestry personnel and forestry permits are acquired; and,
- Open and effective communication is maintained between all parties concerning environmental management on the project.

#### 2.3. Site Managers

Day-to-day responsibility for environmental management will be assigned to the ECO and Manager Field Operations (MFO) for the duration of all exploration activities to:

- Be familiar with the contents of the EMP and applicable sections of the EIA and the measures recommended therein;
- Monitor compliance with the environmental specifications on a daily basis and enforce the environmental compliance on site by communicating the ECO's directions to all personnel involved;
- In the event of any infringements leading to environmental damage, personnel need to consult with the ECO and seek advice on any remedial measures to limit or rectify the damage;
- Maintain a record (photographic and written) of "before-and-after" conditions on site;

- Facilitate communication between all role players in the interests of effective environmental management; and,
- Plan and mark out new access routes in advance and arrange for plant surveys by a suitably qualified person so that forest permits can be applied for.

#### 2.4. Environmental Control Officer (ECO)

Sanli construction cc must appoint a suitably qualified ECO who is responsible to:

- Undertake environmental audits of overall compliance with the environmental specifications.
   This should be done at least bi-annually for the warehouse.
- Submit a site inspection report to the Managing Director and MFO;
- Advise the MFO on interpretation and implementation of the environmental specifications as required; and,
- Make recommendations for remedial action in cases of non-compliance with the environmental specifications.
- The report should be submitted to the MEFT periodically at the time interval stipulated by law.

#### 3. ENVIRONMENTAL SPECIFICATIONS

### 3.1. Compliance with the Environmental Specifications

The constructions and operations will be taking place in an environmentally and socially responsible manner. The proponent and all personnel on site will comply with the environmental specifications contained in this section.

#### 3.2. Training of Site Personnel and Contractors

All employees on site will receive the training as well as provided with safety kits as required by ministry of labor to equip them with the necessary knowledge to comply with the environmental specifications as well safety for themselves.

#### 3.3. Permits

Water supplier and electricity connections will have to be permitted by the walvis bay municipality.

#### 3.4. Waste Management

All areas need to be kept clean, neat and tidy to the satisfaction of the municipality and ECO. The proponent will provide bins at the work sites and will be responsible for the collection and containment of daily refuse and waste generated by his staff. Bins will be secured in such a way that wind cannot remove papers and plastics. Bins will also be secured against animals around the vicinity. No waste will be buried on site. All waste will regularly be removed to an approved waste disposal facility or collected by the municipality according the agreement done.

#### 3.5. Fuel, Oils and other Hazardous Substances

All containers of fuel, oil and any other hazardous substances will be kept sealed, and clearly labelled for identification.

Tanks for fuels, oils and any other hazardous substances need to be bunded in an adequate manner to contain any possible spills.

Toxic substances will not be allowed to soak into the ground.

If any spills occur, the contaminated soil will be removed to the nearest hazardous waste disposal site.

#### 3.6. Road Safety

There is a tired road to the site allowing all trucks to transport the product. All drivers must be aware of these hazards and take precautions to avoid them. Such precautions will include, but not be limited to:

- Complying with speed limits;
- Reducing speed considerably when visibility is poor;
- Being wary of other vehicles mindful of the fact that tourists are not expecting heavy vehicles or vehicles travelling at high speed;
- Travelling with lights on even in daylight;
- Slowing down for animals and birds on the road; and,
- Being courteous to other road users and allowing faster vehicles to pass safely taking into account reduced visibility due to high precipitation some times.

√

#### 3.7. Access Tracks

No new tracks should be created to the site.

#### 3.8. Conservation of biodiversity

Damage to all plants and animal species will be avoided will be avoided wherever possible. Plants are generally of high conservation importance.

Sensitive areas must be avoided or excluded.

#### 3.9. Fire Prevention

Emergency tanning will be given to site managers and employees on what to do in cases of fire explosion as well as first aid kits should be available on site provided by the proponent.

### 3.10. Wildlife Poaching

#### NB: It is an offence to poach wildlife.

No animal or bird is to be captured, killed or harmed in any way. Anyone caught violating this law will face suspension from the project, and could be liable for prosecution. In a likewise manner, domestic livestock on farms may also not be harmed.

#### 3.11. Health and Safety

All company personnel will receive a detailed induction upon joining the project and on a regular basis thereafter.

**Dust:** All staff will receive dust masks to prevent inhalation of potentially radioactive dust while carrying out any dust-producing activities associated with working with mineral ore. Eating, drinking and smoking while working with any materials that may contain radioactive or hazardous substances is forbidden. Good personal hygiene is encouraged (e.g. washing hands before eating) to prevent ingestion of potentially hazardous or radioactive materials.

**Snakes & Scorpions:** A number of poisonous snake and scorpion species may occur in the area. Therefore, precautions are required which include: -

- Exercising caution when picking up rocks or equipment from the ground;
- Looking at the ground when walking; and,
- Wearing closed shoes and not walking barefoot.

✓

**Bees:** Bee stings are potentially dangerous to persons who are allergic to them. Bees are attracted to water, so water / liquid should not be left standing.

In case of emergency Aspivenin (suction syringe) is permanently available at all work stations for the first aid treatment of snake bites, scorpion stings and bee stings. Antihistamine tablets should also be available for the first aid treatment of allergic reactions to bee stings.

### 3.12. Work Stoppage

The MOETF/walvis bay municipality will have the right to order work to stop in the event of environmental specification infringements which could result in damage to the physical environment or violation of municipal rules. Work will continue once the situation is rectified and brought to a state of compliance.

In the event of such work stoppage, the proponent will not be entitled to claim for delays or standing time.

#### 3.13. Compliance Monitoring

During operation, the company ECO will conduct site compliance inspections at least once a month. After each inspection the ECO will compile an EMP compliance report for regular submission to the MFO and biannually to the MEFT.

# 4. SUMMARY ENVIRONMENTAL MANAGEMENT PLAN ASPECTS (QUICK CHECKLIST)

ROLE	ENVIRONMENTAL RESPONSIBILITIES
Sanli construction cc	Responsible to enforce EMP implementation during construction and operation phases.
Environmental Control Officer (E	Implement, review and update the EMP.
	• Ensure all reporting and monitoring required under EMP is undertaken, documented and distributed as needed
	• Conduct environmental site training (tool box talks) and inductions with the support of an environmental consultant.
	• Conducts environmental audit at work site with the support of environmental consultant.
	• Close out all non-conformances.
	• Ensure materials being used on site are environmentally friendly and safe.
The Directorate of Environmental	Approve the EMP and any amendments to the EMP.
Affairs	• Approve reports of environmental issues and non-conformances as issued.
	• Review and approve environmental reports submitted as part of EMP implementation
	• Ensure that the client is compliant to the EMP through biannual reporting on environmental performance.
Project Manager	Control and monitor actions required by the EMP.
	• Report all environmental issues to HSE Manager.
	• Ensure documented procedures are followed and records kept on site.
	• Ensure any complaints are passed onto the management within 24 hours of receiving the complaint.

Workers	Follow requirements as directed by the EMP when conducting work.
	• Report any potential environmental issues to site engineer/project manager, indicating spilt oil,
	excess waste, excessive dust generation, dirty water running off the site and other possible non-
	conformances

Objective	Monitoring				Project Stage
	Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	
Reduce the impact of noiseon surrounding land uses and employees.	Construction activities should be restricted to 07:00hrs to 17:00hrs during weekdays and 08:00hrs to 13:00hrs during weekends.  Machinery will be kept in good workingorder to reduce noise	Daily  Daily	Contractor/Employee s  Contractor/Employee s	ECO	Construction and Decommissioni ng  Construction and Decommissioni
	emissions.  Should noise be problematic, silencers will be fitted to construction vehicles and generators.  Demolish and remove all infrastructure not required post.	Weekly  Following Constructio	Contractor/Employee s  Contractor/Employee s		ng  Construction and Decommissioni ng  Construction and
	infrastructurenot required post closure.  Any noise complaints received must be recorded in the Complaints Register.	n Daily	Contractor/Employee s	ECO	Decommissioni ng  Construction and Decommissioni ng
Minimize pollution as aresult of uncontrolled waste disposal and store	Recyclable waste must be stored separately to waste disposed to landfill. Reuse or recycling of waste must be Investigated.	Weekly	Contractor/Employee s	ECO	Construction, Operational and Decommissioni ng

Waste will be stored in designated areas.	Daily	Contractor/Employee s	ECO	Construction, Operational and Decommissioni ng
Waste bins will be labelled for theirdesignated use.	Daily	Contractor/Employee s	ECO	Construction, Operational and Decommissioni ng
All waste contaminated with hydrocarbons will be considered	Daily	Contractor/Employee s	ECO	Construction, Operational and Decommissioni ng

Objective	bjective Monitoring				
	Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	-
Ensure pipeline laying isdone with minimal disturbance	Ensure that the pipeline right of way isapproved by the municipality	Daily	Project manager	ECO	Operation
to the environment	-Ensure that after laying the pipe, adequate backfilling is done, with excess soil on top in case of rainfall effect on the porous backfilled material.  -The water pipeline route should be marked and clearly visible to anyone in the area.	Once Off	Project manager	ECO/ Project Manager	Operation
Prevent possible groundwater contamination as a resultof hazardous waste spillage and uncontrolledwaste	No equipment or tools with oil or grease is allowed to be placed on bare ground, these must always be placed on a lined surface.  Cement mixing will take place on a	Weekly	Contractor/Employee s  Contractor/Employee	Project Manager	Construction, Operational and Decommissioning  Construction,
handling.	lined surface. No Cement will be mixed on abare surface.	Tookiy	s	Project Manager	Operational and Decommissioning
	No waste will be allowed to be disposed of into excavations.	Weekly	Contractor/Employee s	ECO/ Project Manager	Construction, Operational and Decommissioning

W	Vaste water will be	Weekly	Contractor/Employee	ECO/	Construction,
co	ontained toprevent the		S	Project	Operational and
ing	ngress into the			Manager	Decommissioning
gr	roundwater system.				

Objective	Monitoring	Monitoring				
	Mitigation and Management Measures	Timeframe	Executing Party	Monitoring Party	_	
	<ul> <li>Use plastic trays or liners when mixing mortar and concrete: Do not mix mortarand concrete directly on the ground;</li> <li>Dispose of in the approved manner</li> </ul>					
	Should there be a specific storage areafor fuel, oil and other hydrocarbon/hazardous materials. This area will be access controlled and SDSs will be available	Weekly	ECO/ Project Manager	ECO/ Project Manager	Construction and Decommissioni ng	
Prevent possible sedimentation of	No alterations to banks or beds of watercourses are allowed (a dry gully isalso recognized as a water course);	On-going	Contractor/Employe es	ECO	Construction and Decommissioni ng	
water resources as a resultof runoff from cleared areas.	Stockpile will be shaped to divert stormwater around the site to minimize soil erosion of the site as well as to prevent the contaminated water runoff.	On-going	Contractor	ECO	Construction and Decommissioni ng	
	Use of biodegradable sanitizer should beused to prevent pollution of soil and water resource	Once off	Project manager	ECO	Operation	

The storm water drainage system mustbe adequately designed based on site conditions in order to ensure the free	Daily	Project manager	ECO	Operation
flow of surface run-off.				

Objective				Project Stage	
	Mitigation and Management	Timeframe	Executing Party	Monitoring	
	Measures			Party	
	Workers should be adequately trained	Continuous	Contractor/Employe	Project	Construction
	to follow all safety procedures and		es	Manager/EC	&Operation
	wearprotective equipment where			О	
	required;				
Prevent the impacts	Reduce the number of trucks	Continuous	Contractor/Employe	Project	Construction
resulting from traffic	enteringthe premises by		es	Manager/EC	&Operation
movement to and from	transporting larger			О	
theSite.	loads;				
	Speed limits will be restricted at the	Continuous	Contractor/Employe	Project	Construction &
	around the site to 10 km/h.		es	Manager/EC	Operation
				О	
	Investigate the installation of	Continuous	Project Manager	Project	Construction
	renewable			Manager/EC	&Operation
	energy – such as solar or wind				

power –to the operations.			О	
The operational footprint will be kept	Continuous	Project Manager	Project	Construction
as			Manager/EC	&Operation
small as possible. All disturbed			O	
areas willbe rehabilitated.				

ENVIRONMENTAL IMPACTS	MITIGATION MEASURES	MONITORING / ACTION & METHODS	RESPONSIBILITIES	RESOURCES REQUIRED FOR IMPLEMENTATION
ECOLOGY	<ul> <li>No killing of animals</li> <li>Avoid nesting birds</li> <li>Where possible no destruction of plants</li> <li>Avoid highly sensitive environments or minimize footprint in environmental high priority areas</li> <li>Stick to existing tracks</li> <li>All waste and scrap to be removed</li> <li>Rehabilitate sites where necessary.</li> </ul>	<ul> <li>Awareness training regarding the sensitive nature of the project area must be provided to all staff.</li> <li>Photograph before and after exploration activities.</li> <li>Acquire the necessary permits to operate, clear vegetation</li> </ul>	- Site manager / MFO, ECO/HSE (Health Safety Environment) Officer, team leaders, all workers	Taxa checklists and mapped conservation areas.     Permits for bush clearing for roads and drill pads.
DUST & NOISE	- Implement dust suppression measures	- Report on health of personnel	- Site manager / MFO	- Equipment (incl. PPE) and tools

WATER CONSUMPTION	<ul> <li>Wear appropriate PPE</li> <li>Maintenance of machinery to reduce noise</li> <li>Minimize use and loss</li> <li>Check container piping and taps regularly for leakage</li> </ul>	<ul> <li>Scheduled maintenance reported</li> <li>Awareness training</li> <li>Periodic inspections by supervisors</li> <li>Monitor expenses</li> </ul>	- All workforce and management	- Abstraction permit if necessary
LAND USE	<ul> <li>Awareness of proximity to any tourist attractions or homesteads, camps, watering points</li> <li>Minimize visual impact</li> <li>Avoid conflict with other land users</li> </ul>	<ul> <li>Awareness training</li> <li>Periodic inspections by superiors</li> <li>Complaints register to be kept</li> <li>Ongoing consultation with landowners</li> </ul>	- All workforce and management	- Funds to conduct a cleaning up program in the area (rehabilitation)
WASTE	<ul> <li>Removal of litter</li> <li>Careful use and storage of chemicals</li> <li>Oil adsorbing materials available in workshop</li> </ul>	<ul> <li>Awareness training</li> <li>Periodic inspections by superiors</li> <li>Implementation of cleaning up program</li> </ul>	- All workforce and management	<ul> <li>Funds set up and implement training courses on cleaning up spills</li> <li>Funds to conduct a cleaning up program in the area</li> </ul>
FUEL STORAGE AND POTENTIAL POLLUTION	<ul> <li>Fuel storage facility erected on site shall comply with specification for storage and handling of petroleum products;</li> <li>Tanks shall be bunted, allowing sumps for containment of spillage</li> </ul>	<ul> <li>Awareness training</li> <li>Periodic inspections by superiors</li> </ul>	- Site manager / MFO	- The company will provide for safe fuel storage and handling at an approved maintenance site.

				- Temporary customer installation certificate from MME
WORKERS CONDUCT	<ul><li>Training</li><li>Fines/penalties for lack of compliance</li></ul>	- Constant monitoring to ensure compliance	- Team leaders and MFO	<ul> <li>Training manual and time set aside for training</li> <li>Procedures Manual for drilling.</li> </ul>
HEALTH & SAFETY	<ul><li>Follow procedures</li><li>Wear correct PPE</li></ul>	<ul> <li>ECO/HSE officer to check that procedures are followed</li> <li>Compliancy reports submitted</li> </ul>	- ECO/HSE Officers & site manager / MFO	- Emergency Response Plans, First Aid kits and first aid trained personnel.

# Conclusion

It's the responsibility of Sanli construction cc to make sure that the above environmental managment guidelines are dithered to by all contructors, the project can only commence provided the EMP will be put into practice.