



**SCOPING ENVIRONMENTAL IMPACT
ASSESSMENT FOR PROPOSED
EXPLORATION ACTIVITIES ON EPL 8771
NEAR OTAVI OTJOZONDJUPA REGION**

MEFT PROJECT NO.: 230204000954

OTAVI CEMENT GROUP (PTY) LTD

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MAY 2023

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ENVIRONMENTAL AUTHORIZATION INFORMATION

Please note that the environmental clearance certificate should be issued out to the client. All comments and enquiries during the evaluation of this document must be addressed to the Environmental Consultants. Please forward the clearance certificate to the consultant.

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ACRONYM

ACRONYM	MEANING
BID	Background Information Document
EIA	Environmental Impact Assessment
EAP	Environmental Assessment Practitioner
EMP	Environmental Management Plan
EPL	Exclusive Prospecting License
I&APs	Interested and Affected Parties
LTD	Limited Company
PCP	Public Consultation Process
PTY	Proprietary
ToR	Terms of Reference

EXECUTIVE SUMMARY

Proponent

Otavi Cement Group (Pty) Ltd being the proponent proposes to undertake exploration activities on EPL 8771 which is located approximately 20 km north-east of Otavi Town, in the Otjozondjupa Region. The area for EPL 8771 is 5697.5544 hectares and the commodities within the EPL include; dimension stone and industrial minerals (Ministry of Mines and Energy Portal). To note, Otavi Cement Group (Pty) Ltd is a registered Namibian company.

Environmental Assessment Consultants

The scoping Environmental Impact Assessment (EIA) for the proposed exploration was conducted by Eco-Wise Environmental Consulting cc. The study was carried out according to the requirements of the Environmental Management Act (Act No.7 of 2007) and its regulations of 2012.

Objectives of the EIA

- Generally, the main objective of the study was, to determine the potential environmental and socio-economic impacts derived from the exploration activities.

Specific objectives included:

- To identify potential environmental impacts derived from exploration activities.
- To establish baseline environmental conditions so that relevant impacts could be projected and sufficient mitigation measures could be designed
- To consult with key, interested and affected stakeholders so that their concerns are considered in the formulation of the scoping EIA report and implementation of the Environmental Management Plan
- To design an EMP with sound and relevant mitigation measures
- Coordinate the whole application process of the Environmental Clearance Certificate (ECC) until the issuance of the certificate.

Environmental Impact Assessment Methodology

The methodologies which were used during the study include; desktop studies, observations through site visit, public meeting, advertisement, secondary data collection and distribution of questionnaires and letters. **See Appendix A**, for questionnaires and adverts.

Environmental Impact Assessment

This is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse. The Environmental Consultants undertook this Environmental Impact Assessment (EIA) study, to predict the impacts of the proposed activity on the environment and to propose mitigation measures. The EIA covered the following aspects; project description, baseline studies, public consultation process, environmental, socio-economic impact assessment and environmental management. All identified impacts were addressed and mitigation measures were brought forward.

The main findings obtained from the assessment showed that the project will have more positive impacts in future thus during mining phase. If this initiative grows and ultimately develop into an active mine, it will support many Namibians. Positive impacts which will likely happen in future include transfer of skills, employment creation and economic development. The exploration phase is expected to have minimum negative impacts which might include; impact on fauna, soil disturbance, noise, dust and impacts associated with occupational health and safety of employees working on the site.

Draft Scoping Report

The draft scoping report was made available to the public for commenting. All impacts identified through the site visit and professional expertise were incorporated in the report. An Impact Assessment matrix was used to establish the environmental risk of the overall project. In a bid to ensure that the proposed mitigation measures will be implemented, an Environmental Management Plan was developed to guide all activities of the project during all its phases.

Final Scoping Report and EMP

The final report was sent to the Proponent, Ministry of Mines and Energy and Ministry of Environment Forestry and Tourism: DEA.

CHAPTER ONE: BACKGROUND

1.1 INTRODUCTION

Otavi Cement Group (Pty) Ltd being the Proponent proposes to conduct exploration activities on EPL 8771 which is approximately 20 km north-east of Otavi Town, in the Otjozondjupa Region. To note, EPL 8771 was checked on Ministry of Mines and Energy portal and it was found not to be falling under environmental sensitive areas or withdrawn areas.

Eco-Wise Environmental Consulting being an independent consultant was hired to conduct a scoping EIA for the proposed exploration on EPL 8771. Eco-Wise Environmental Consulting cc conducted a site visit on 17 April 2023. The consultant was mainly guided by the Environmental Management Act (No. 7 of 2007) and the Environmental Impact Assessment Regulations (2012) during the process of the EIA. The EIA regulations (2012) states all the activities, which require Environmental Clearance and among the listed activities is annexure 3, mining and quarrying activities where this project is classified under. *Annexure 3.2 states that other forms of mining or extraction of any natural resources whether regulated by law or not and 3.3 Resource extraction, manipulation, conservation and related activities may not be undertaken without an environmental clearance certificate.* The competent authority will be, Ministry of Environment Forestry and Tourism.

1.2 NEED FOR THE PROJECT

1.2.1 Promote local empowerment

Otavi Cement Group (Pty) Ltd is a Namibian company hence if the project is given an opportunity it will result in empowering the locals who are the shareholders.

1.2.2 Economic development

The motivation for Namibia to support the project is economic and strategic in nature. In an event that, minable deposits are explored and the project moves to the mining phase, the Proponent will generate revenue for the government through taxes. Revenue generated through taxes will be used for economic development.

1.2.3 Employment creation

Given that this initiative grows and ultimately develops into active mining, local people will benefit. Employment creation will be high in future, thus during mining phase. Job opportunities will be created during the life span of the project. The type of jobs will range from skilled, semi-skilled and unskilled. During the exploration phase, mainly professionals with the expertise will be hired to explore the area.

1.3 SCOPE OF THE PROJECT

The scope of the study required the consultant to conduct a scoping environmental impact assessment putting into consideration relevant Namibian legislations (Environmental Management Act (No 7 of 2007) and its regulations of 2012).

1.4 TERMS OF REFERENCE

The approach to undertake the work was guided by the following ToR, which were provided by the Proponent;

- Conduct scoping environmental impact assessment.
- Determine the possible environmental and socio-economic impacts associated with the exploration phase of the project.
- Conduct a public consultation process to gather the views of Interested and Affected Parties.
- Design an EMP with sound and relevant mitigation measures for monitoring purposes.
- Compile a scoping EIA report for submission to Ministry of Environment Forestry and Tourism and Ministry of Mines and Energy.
- Coordinate the whole application process of the ECC until the issuance of the certificate.

1.5 OBJECTIVES

The objectives of the study were derived from the ToR and they are as follows:

1.5.1 General objective

- To determine the potential environmental impacts derived from the exploration activities

1.5.2 Specific Objectives

- To identify possible environmental impacts derived from exploration activities.
- To establish baseline environmental conditions so that relevant impacts could be projected and sufficient mitigation measures could be designed
- To consult with key, interested and affected stakeholders so that their concerns are considered in the formulation of the scoping EIA report and implementation of the Environmental Management Plan
- To design an EMP with sound and relevant mitigation measures
- Coordinate the whole application process of the ECC until the issuance of the certificate.

1.6 METHODOLOGY USED FOR THE STUDY

- a) **Desktop Study**- This involved review of documents and relevant legislatives. Documents containing geological, vegetation, climatic, demographic and hydrological data for Namibia were reviewed.
- b) **Site Visits** –The EIA team visited the site on 17 April 2023. The field visit was meant for physical inspections of the EPL in order to gather information on the state of the environment.
- c) **Public Consultation** -consultation was done through advertisement and a public meeting. The meeting was scheduled for 17/04/ 2023 at Khorab Lodge in Otavi at 2pm and unfortunately there were no attendance.
- d) **Mapping**-More data was obtained from the maps which were produced by the consultant GIS personal. The maps included vegetation, hydrogeology and location.

- e) **Reporting**- all data gathered was used to compile a scoping EIA and EMP report which was submitted to Ministry of Environment Forestry and Tourism and Ministry of Mines and Energy.

1.7 LAND OWNERSHIP

The land is under commercial farming, see **Appendix B consent letter** from the owner. The Proponent was granted the EPL by Ministry of Mine and Energy.

1.8 OVERVIEW OF EIA REPORT

The remaining part of this report has been designated for the following aspects;

- Project Description.
- Relevant legislation
- Description of the affected environment
- Public Consultation
- Assessment of environmental impacts
- Environment Management and Monitoring Plan
- Conclusions and Recommendations.

CHAPTER TWO: PROJECT DESCRIPTION

The following issues will be clarified under project description;

- Project location.
- Project activities.
- Project cost.

2.1 PROJECT LOCATION

Otavi Cement Group (Pty) Ltd proposes to conduct exploration activities on EPL 8771 situated approximately 20 km north-east of Otavi Town, in the Otjozondjupa Region. Figure 1 below shows the Location Map and Table 1 the coordinates and area of the EPL.

Table 1: shows coordinates for EPL 8771

EPL	AREA (HECTARES)	COORDINATES			
		Corner 1	Corner 2	Corner 3	Corner 4
8771	5697.5544	19°30'17"S 17°25'01"E	19°30'54"S 17°32'38"E	19°33'44"S 17°31'14"E	19°31'14"S 17°23'56"E

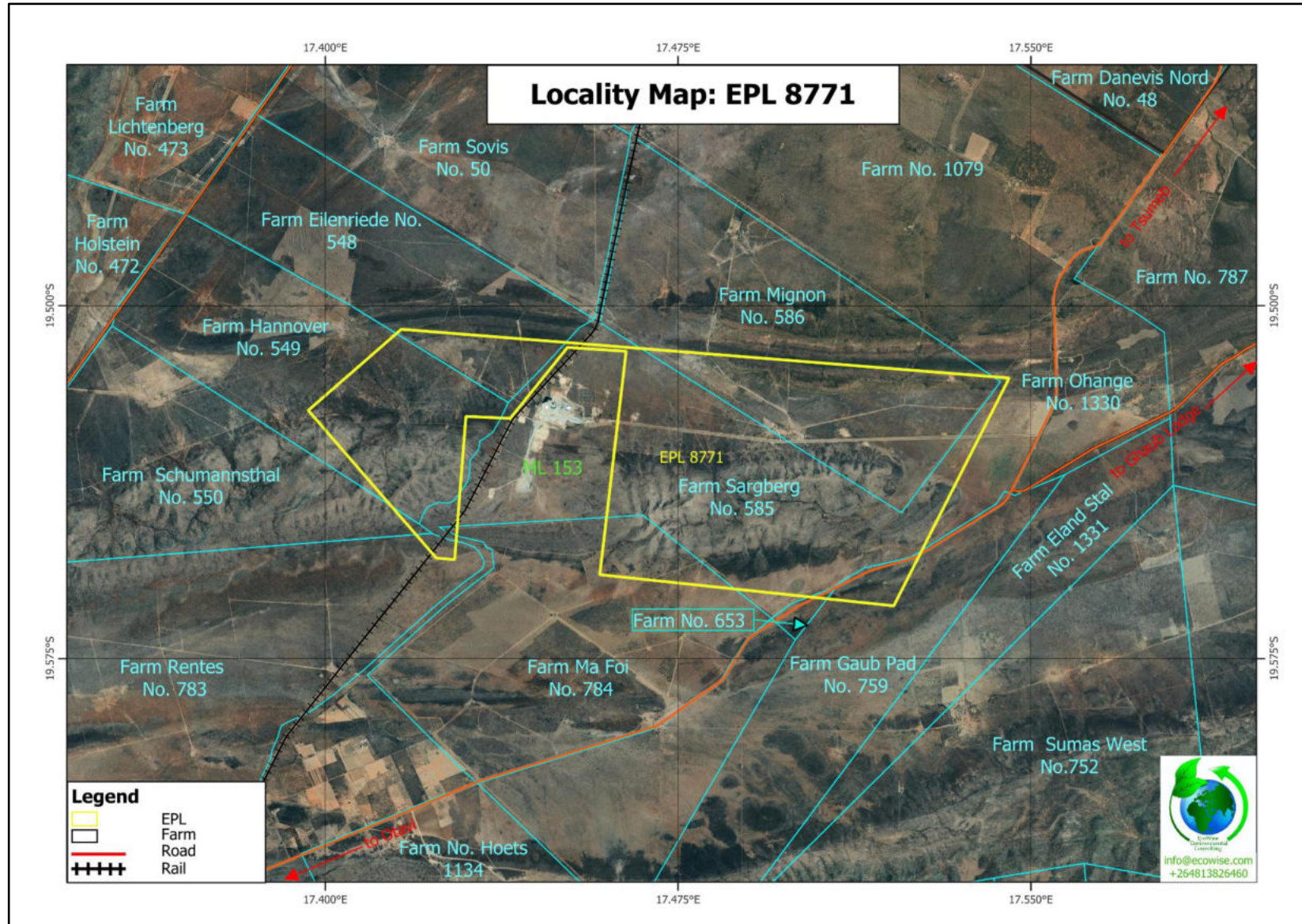


Figure 1: shows location map

2.2 SURROUNDING LAND USES

EPL 8771 is surrounded by farms and some of these farms cut across the EPL as shown in figure 1: locality map above. The greater area of the EPL is in farm Sargberg. In addition, EPL 8771 shares a boundary with ML 153 which is Ohorongo Cement. The site is accessed via the B1 road (Otavi - Tsumeb) which runs from the south to the east of the EPL. Images below show features within the EPL.



a)



b)

c)



d)



Site image 1: shows surrounding features (a-d)

2.3 PROJECT ACTIVITIES

Exploration is a phase of investigating or examining about the geological condition of an area and the aim will be to find high quality ore deposits. It is essential to note that, during the exploration phase, no construction activities shall be done. Existing roads shall be used hence reducing the impact of clearing vegetation and cut lines will only be created when there is need.

2.3.1 EXPLORATION PHASE

The following activities shall be conducted during the exploration phase;

Ratify Deposit:

Ratifying a deposit involves confirming the presence of a particular resource or mineral in a given area. This stage typically begins with an initial hypothesis based on existing geological knowledge, historical records, or other indicators. The proponent will therefore conduct a desktop study to review existing geological maps, reports, and data so as to identify potential deposits in the area of interest. This historical data will provide valuable insights into previously known deposits and will guide further exploration efforts.

Sampling and Mapping:

Sampling and mapping will also be done so as to gather direct evidence of the deposit and understand its characteristics. Samples will be collected and sent for chemical analysis/testing to determine their composition, mineralogy, geochemistry and other relevant properties. Simultaneously, mapping will be carried out to create detailed geological maps of the area. This will involve recording the spatial distribution of various geological features, such as rock types, structural elements, and mineral occurrences. Field observations and remote sensing techniques will be employed to generate accurate maps. Aerial images, acquired through remote sensing technologies like drones provide high-resolution data for mapping purposes.

Historical Available Data:

Incorporating historical available data is crucial for exploration as it offers a wealth of information about past exploration activities, known deposits, and geological models. This data includes geological reports, surveys, drilling logs, assay results, and production records from previous exploration campaigns or mining operations in the area. By studying this historical data, the proponent will gain insights into the geological setting, mineral potential, and key geological indicators associated with the deposits of the project area.

Aerial Images:

Aerial images obtained through aerial photography or remote sensing technologies will also be used. These images will provide a view of the area of interest, enabling the identification of geological features, landforms, vegetation patterns, and other surface characteristics. High-resolution aerial images can reveal subtle details that may be missed on the ground, helping to identify potential mineralized zones or geological structures.

In summary, the stages of exploration, including ratifying deposit, sampling and mapping, utilizing historical available data and aerial images, collectively contribute to a comprehensive understanding of the area of interest. By combining fieldwork, laboratory analysis, historical knowledge, and remote sensing data, the proponent will be able to make informed decisions regarding the presence, extent, and potential of mineral deposits or other valuable resources.

2.3.2 POST EXPLORATION PHASE

This phase can be termed as decommissioning or post exploration phase, when exploration activities come to an end. The main issue at this stage will be rehabilitation. All affected areas will be rehabilitated so as to try to restore the environment to what it was before. Activities which will be done include, backfilling if there are any pits created and stockpiling disturbed bedrock.

2.4 PROJECT COST

The total funding required to set up the project is not yet established.

CHAPTER THREE: ANALYSIS OF ALTERNATIVES

The following chapter will focus on the alternatives to the project. Alternatives to the project are different options, other possibilities or other course of action, which can be adopted. The alternatives to the proposed project are:

Option 1 – Alternative locations

Option 2 – No project alternative

Option 3 – Continue with the project

3.1 ALTERNATIVE LOCATIONS

Option 1, which is alternative locations, implies that a different location to carry out the development must be acquired somewhere else other than the chosen site. Nevertheless, the fact that within the area of study there is an already existing mine producing cement, this justify the use of the proposed site for further exploration studies.

3.2 THE “NO PROJECT” ALTERNATIVE

Option 2, which is “no project alternative”, implies that the project must not be undertaken on the proposed land rather the land should remain undisturbed. However, the “no project alternative” will be less favorable from the socio-economic perspective due to the following factors:

- **Local Empowerment-** the shareholders of the company are local people hence the project will help to reduce poverty rate thus improving their social wellbeing.
- **Transfer of skills-** in future (mining phase) the project will probably enable locals to obtain skills and knowledge through trainings.
- **Growth and development-** the project has the potential to benefit the locals mainly in future. If mineable deposit is discovered during the exploration phase, plans to start mining will be done which will result in growth and development of the area in terms of human capital and infrastructure.
- **Employment creation-**if the project is implemented, more jobs will mainly be created in future thus during the mining phase.

3.3 OTHER ALTERNATIVES

Table 2: shows services alternatives

Services	Proposed source	Alternative source
Water	-Local water sources from the farm	-Transporting water from other sources out of the project area.
Power for cooking	-Provided at outsourced accommodation	-Gas stoves
Workers' accommodation	-Accommodation to be sourced outside the project area for geologist, assistants	- Campsite in farm Sargberg for geologist, assistants
Road (site accessibility)	-EPL to be accessed from B1 road	
Waste Management		
Sewage	- Use facilities for accommodation provided outside the project area	-Portable toilet to be used and these are advantageous because they are easy to transport and environmentally friendly if properly disposed. (This will be applicable in an event that a campsite is established)

3.4 ALTERNATIVES ASSESSMENT OUTCOMES

Option 3, which promotes the continuation of the project, has been reckoned as the preferred alternative. Option 3, was viewed as beneficial given the benefits that come with the project. Furthermore, if cases arise where water is required, it will be sourced from farm Sargberg or transported from outside the project area. The B1 highway will be used to access the site. In addition, facilities for the accommodation outsourced will be utilized in terms of power and ablution facilities.

CHAPTER FOUR: RELEVANT LEGISLATION

The project will be guided by various applicable legislations relevant to the project. The objective is to ensure that the proposed project complies with Namibia's relevant laws, policies and regulations. Table 3 below indicates laws and policies relevant to the project.

Table 3: shows relevant legislations related to the project

Aspect	Legislation	Relevant Provisions	Relevance to the Project
The Constitution	Namibian Constitution First Amendment Act 34 of 1998	<ul style="list-style-type: none"> - According to article 91(c) it provides for duty to guard against “the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia” - Article 95 (l) deals with the “maintenance of ecosystems, essential ecological processes and biological diversity” and sustainable use of the country’s natural resources. 	<ul style="list-style-type: none"> - Proponent should ensure sustainable practices throughout the exploration phase.
Environmental	Environmental Management Act 7 of 2007	<ul style="list-style-type: none"> - States that, projects with significant environmental impacts are subject to an environmental assessment process (Section 27). - Requires for adequate public participation during the environmental assessment process for interested and affected parties to voice their opinions on a project (Section 2). 	<ul style="list-style-type: none"> - The Environmental Management Act should guide the management of this project. - Adverts should be published in two local newspapers twice and notices placed on site - The public and relevant authorities should be consulted during the process of public participation as per the requirement of the act
	EIA Regulations (2012)	<ul style="list-style-type: none"> - Lists all activities, which cannot be undertaken without an EIA. 	<ul style="list-style-type: none"> - This project is listed under mining and quarrying activities. - Activity 3.3 states that resource extraction, manipulation, conservation

			and related activities require an environmental clearance certificate.
	Convention on Biological Diversity (1992)	- Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	- The Proponent should consider the impact of the project on the biodiversity of the area.
	Nature Conservation Ordinance No. 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	- Indigenous and protected plants should be protected within the areas of works.
	Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term "environment" is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.	- The EIA considers this term of "environment".
	Minerals (Prospecting and Mining) Act, 1992 (Act 33 1 of 1992)	To provide for the reconnaissance, prospecting and mining for, and disposal of, and the exercise of control over, minerals in Namibia; and to provide for matters incidental thereto. "mineral" means any substance, whether in solid, liquid or gaseous form, occurring naturally in, on or under any land and having been formed by, or subjected to, a	- The intended activity involves exploration

		geological process, excluding-(c) subject to the provision of subsection (2), soil, sand, clay, gravel or stone (other than rock material specified in Part 2 of schedule 1)	
Soil	Soil Conservation Act 6 of 1969	This act covers the prevention and combating of soil erosion; the conservation, improvement and manner of use of the soil and vegetation; and the protection of water sources	- Prevent possibilities of soil contamination from fuels, oils and greases of vehicles working at the site
Water	Water Act 54 of 1956	- Prohibits the pollution of underground and surface water bodies.	- Contamination from fuels and oils from vehicles should be avoided so as to prevent pollution of water resources.
Health and Safety	Labour Act (No 11 of 2007)	- This act emphasizes and regulates basic terms and conditions of employment, it guarantees prospective health, safety and welfare of employees and protects employees from unfair labour practices.	- The proponent will be obliged to create a safe working environment for the personnel working during the exploration phase.
	Public Health and Environmental Act, 2015	- The act mainly emphasis on proper management of the environment, to prevent negative health impacts. - The act promotes proper waste management.	- Proper waste management should be promoted to prevent nuisance, which can consequently affect public health. - Recycling, reuse and reduce must be practised at all times thus if any waste is generated.

	Heritage Act	<ul style="list-style-type: none"> - The Heritage Act of 2004 makes provision for the developer to identify and assess any archaeological and historical sites of significance. The existence of any such sites should be reported to the Monuments Council as soon as possible. The Council may serve notice that prohibits any activities as prescribed within a specified distance of an identified heritage/archaeology site. 	<ul style="list-style-type: none"> - In an event that, the proponent comes across any archaeological or historical sites of significance, they should report immediately to the Monuments Council
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N.B: The Proponent shall be required to comply with the legislations. Where there is need to engage independent consultants to facilitate compliance, the Proponent is encouraged to consult qualified personnel. The Environmental consultant is supposed to conduct monitoring assessments and produce bi-annual reports, which will be required during the renewal of the environmental clearance certificate.

CHAPTER FIVE: DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter describes the environmental setting of the project, which includes the biophysical environment and the socio-economic environment. The baseline information will assist in the monitoring of the environmental impacts during the exploration phase.

5.1 BIO-PHYSICAL ENVIRONMENT

5.1.1 Climate

The area under study receives high rainfall and the average annual rainfall received in the area is 500-550 mm per annum. Maximum temperatures can reach 32°C-34°C during the summer months (Mendelsohn et al 2003). The climatic conditions are favorable for agricultural activities hence the area is referred as the Golden triangle or Maize triangle. Table 4 below briefly describe the general climatic conditions experienced within the area of study, as deduced from the Atlas of Namibia, by Mendelsohn et al 2003.

Table 4: shows general climate data

Average Annual rainfall:	Average rainfall in the area is between 500-550mm per year
Average evaporation:	Average evaporation in the area is between 1960-2100mm per year.
Precipitation:	January and February receive highest rainfall.
Water Deficit:	Average water deficit in the area is between 1500-1700mm per year.
Temperatures	Annual temperatures are 20-22 °C per year Average maximum temperature 32°C-34°C Hottest month December Average minimum temperatures 4°C-6°C Coldest month July
Wind direction	Wind direction in the area is predominantly from the east and northeast
Humidity	Humidity is 80%-90% and September is the least humid month.

(Source: Atlas of Namibia, 2003)

5.1.2 Topography and Geology

The topography of Otavi area is mainly mountainous. The Otavi Mountain Range runs through Otavi area and is characterized by rugged peaks and deep valleys. The highest point in the range is Mount Otavi, which rises to an elevation of 2,100 meters. At the site, entering farm Sargberg from the access road (B1) the northern side of the EPL is generally flat whilst the southern side is mountainous.

The geology of Otavi is classified mainly under the Otavi Group (Ls) which forms part of the Damara Supergroup. The Damara Supergroup covers the largest part of the northwest quarter of Namibia, and is oriented in a predominantly SW-NE direction with an extension into what is known as the Otavi Mountains (Mendelsohn et al, 2002). Rock type which is dominate on the EPL is limestones and dolomites, see figure 2 below, Hydrogeology Map and also see table 5 which shows the possible commodities.

Table 5: shows the commodities for EPL 8771

EPL	COMMODITIES
8771	Dimension stone and industrial minerals

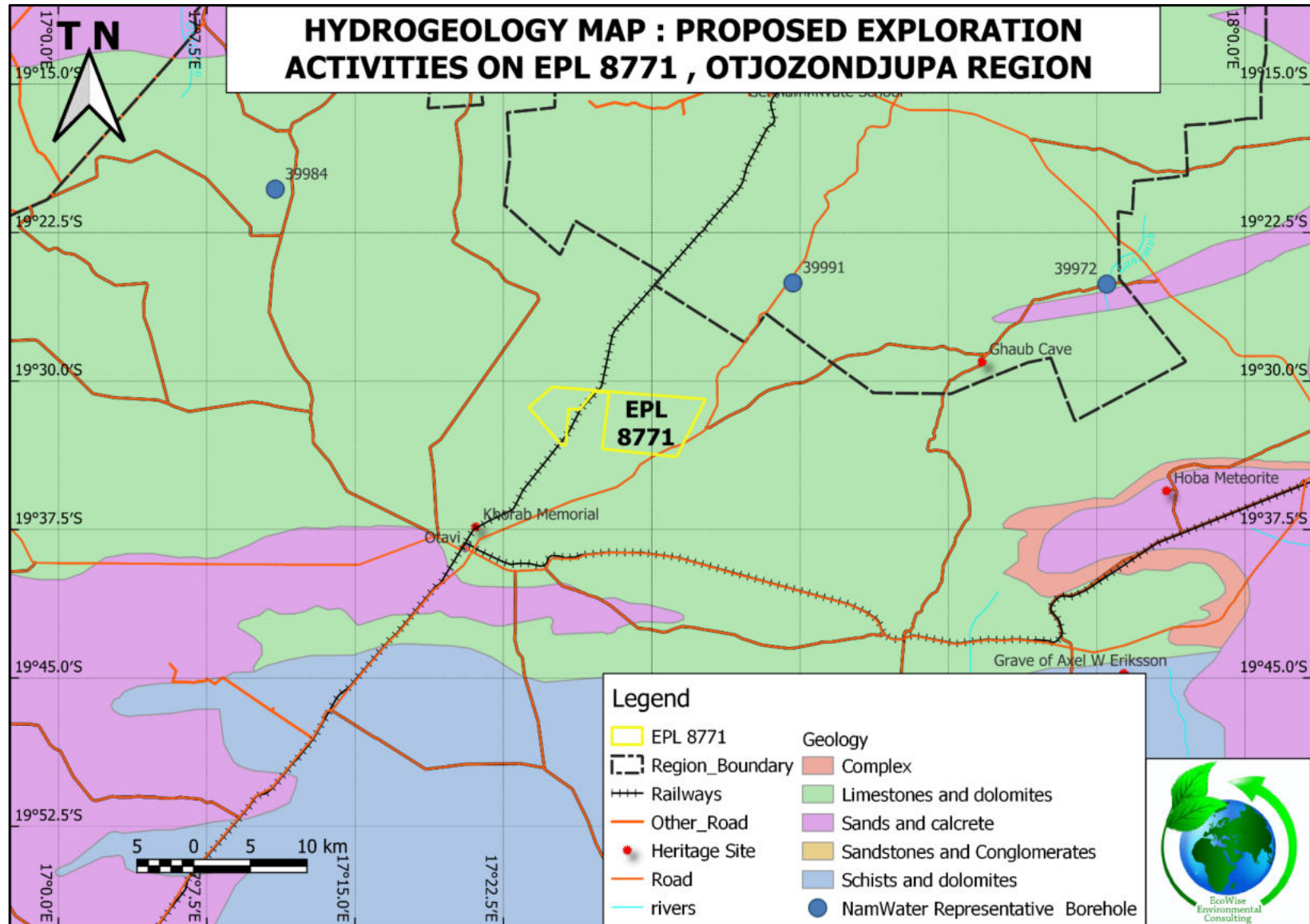


Figure 2: shows hydrogeological map

5.1.3 Hydrology

The Otavi area contains several rivers and streams that flow through the steep valleys and canyons. These include the Ugab, Huab, and Khan Rivers, which provide vital water resources for the local communities and wildlife. The quality of groundwater is good. However, there are no nearby rivers to the EPL.

5.1.4 Soils

The study area is mainly covered by mollic leptosols, soils with a good surface structure. Leptosols typically form in actively eroding landscapes, especially in the hilly or undulating areas that cover much of southern and north-western Namibia (Mendelsohn 2000). Leptosols are coarse-textured soils which are characterized by their limited depth caused by the presence of a continuous hard rock, highly calcareous or cemented layer within 80cm of the surface. The leptosols are, therefore the shallowest soils to be found in Namibia and they often contain much gravel. Their water holding capacity is low and vegetation in areas in which they occur is often subject to drought (Mendelsohn 2000). Rates of water run-off and water erosion can be high when heavy rains fall. Topsoil is largely absent on many parts of the study area, where the surface is mainly covered with rocky outcrops.



a)



b)

Site image 2: shows soil type at the study area (a-b)

5.1.5 Vegetation of the study area

On a regional scale, the vegetation structure can be described as the Acacia Tree and Shrub Savanna biome with Karstveld type vegetation consisting of mixed woodlands. Vegetation structure for EPL 8771 is woodland, with dense grass cover and a well-developed shrub layer. **See figure 3 below, Vegetation Map.** To note, open woodland with a dense shrub layer can support a large variety of vertebrate taxa: woody habitat for bird species such as aerial feeders, gleaners, frugivores and hole nesters; thickets for insectivores and reptiles. Although the habitat has been modified by livestock farming and fire, it is capable of supporting a relatively high biodiversity.

The vegetation around the study area is characterized by *Terminalia sericea* & *Acacia flecki* trees interspersed with *Bauhinia petersiana*, *Acacia ataxacantha*, *Peltophorum africanum*, *Lonchocarpus nelsii* and an occasional *Burkea African*, the last three being protected plant species.

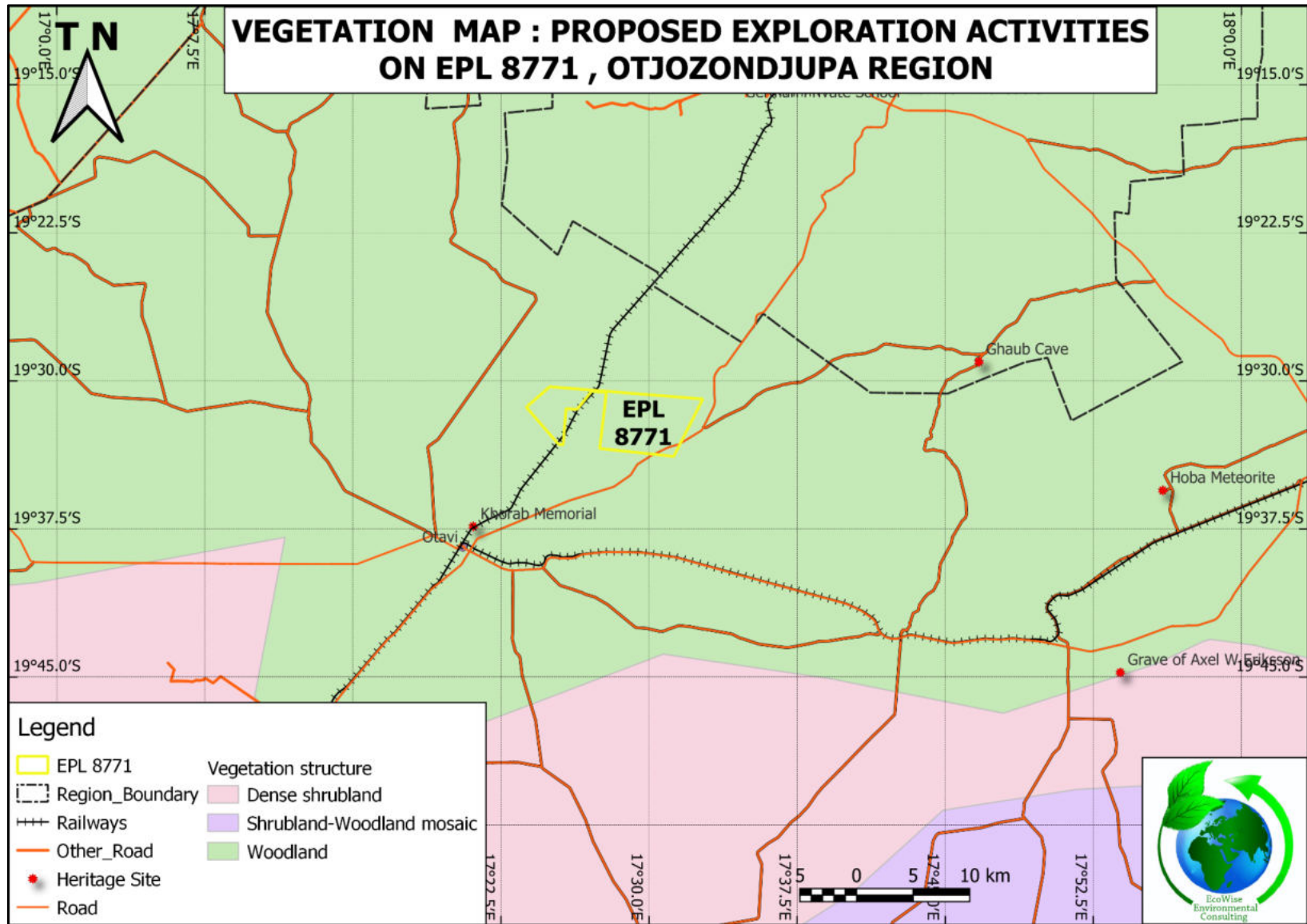


Figure 3: shows vegetation map



a)



b)

c)



d)

Site image 3: shows vegetation within the EPL (a-d)

5.1.6 Fauna

The area under study receives high rainfall which makes it possible to domesticate animals. During the site visit, it was observed that animals like cows are kept within the study area as shown on the site images below. Table 6 below indicate the general fauna data for small creatures.

Table 6: shows summary of general fauna data

Type of fauna	Number of different species/genera	Total around Namibia
Mammal Diversity	91-105 Species	217
Bird Diversity	201-230 Species	658
Reptile Diversity	71- 80 Species	258
Frog Diversity	16-19 Species	50
Termite Diversity	7-9 Genera	19
Scorpion Diversity	14-15 Species	21

Source: Atlas of Namibia (2003)



Site image 4: shows cows grazing within the EPL

5.1.7 Archaeology

This section will describe how the proponent will handle any unknown heritage sites that might fall within the EPL.

Declared heritage sites in the vicinity of the proposed development: The National Heritage Sites Database, maintained and updated by the National Heritage Council, indicates the presence of heritage sites and places of archaeological interest across the country. However, the database reveals that there are no registered heritage sites or places of archaeological interest in proximity to the area under exploration. The nearest heritage sites are Khorab Memorial and Ghaub Curve which are approximately 10.3 km and 24km

from EPL 8771 respectively. The proposed exploration activities are therefore unlikely to impact any heritage resources.

Previous Archaeological Studies: Desktop archaeological studies which have been conducted in the vicinity of the EPL have found no heritage sites or objects of archaeological significance existing within the exploration zone. The proposed area of study is also currently a recipient of cement mining activities via open pit mining by Ohorongo Cement. Ohorongo Cement has not reported any archaeological findings within the area.

Unknown Heritage Sites

It is essential to note that, within the EPL, there might be unknown heritage sites. Given that the proponent comes across unknown heritage sites within the EPL, the proponent should follow the following procedures:

Action by person identifying archaeological or heritage material

- If operating machinery or equipment, stop work
- Identify the site with flag tape
- Determine GPS position if possible
- Report findings to foreman

Action by Foreman

- Report findings, site locations and actions taken to superintendent
- Cease any work in immediate vicinity

Action by superintendent

- Visit site and determine whether work can proceed without damage to findings
- Determine and mark exclusion boundary
- Record coordinates for the site for confirmation by archaeologist

Action by Archaeologist

- Inspect site and confirm recorded coordinates
- Advise National Heritage Council (NHC) and request written permission to remove findings from work area
- Recover, package and label findings for transfer to National Museum

In the event of discovering human remains:

Action as above

- Field inspection by Archaeologist to confirm that remains are human
- Advise and liaise with NHC and Police
- Recover remains and remove to National Museum or National forensic Laboratory, as directed

5.2 SOCIO-ECONOMIC ENVIRONMENT

Otjondjupa is one of the bigger regions of Namibia and is located in the northern half of the country, bordering the Khomas and Omaheke regions in the south, the Erongo and Kunene regions in the west and the Oshikoto, Kavango-West and Kavango-East regions in the north.

5.2.1 Population

The population density of the Otjozondjupa Region is low (1.5 persons per km²) when compared to the national average, and the current total population of the region was estimated at 154,342 in 2016 (NSA, 2017). In 2011 the population of Otjiwarongo was 28,249 and with a generalized urbanization growth rate of 4.0% the current estimated population is estimated to be 40,200 residents. Otavi recorded only 5,200 residents in 2011 and an estimated population of 7,400 in 2020. Grootfontein had a population of 23,793 in 2011 and with the generalized urbanization growth rate of 4.0% the current estimated population is estimated to be 33,864 residents.

5.2.2 Education Profile

According to NSA (2011), the regional literacy rate is 83.2%, with no major differences between males and females. The literacy rate in urban areas stood at 90.9 %, while in rural areas it stood at 73%. Moreover, according to NSA (2011) Otjozondjupa region has 72 schools, 60 are state owned and 12 are privately owned. Primary school are 48 and 40 are state owned and 8 are private schools whilst secondary schools are 13 and 12 are state owned and one privately owned. The number of teachers is around 1315 and only 100 are without training. It is vital to comment that the educational system in the region can be classified as good given that the literacy rate and the number of teachers is high.

5.2.3 Employment Opportunities

According to NSA (2011), 63.2 % of the economically active population aged 15 years and above is employed and 36.8 % unemployed in Otjozondjupa region. There were slight differences between urban and rural areas, whereby 69 percent were employed in rural areas compared to the 58.8 percent in urban areas. The agriculture, fishing and forestry sectors employ most of the region's economically active population and according to NSA 2011, 12 526 are employed in these sectors. However, cattle and maize farming remains the most important economic activity around the Otavi area. Moreover, mining and manufacturing employs around 1 879 and 2 547 respectively. The availability of elements such as lime, fluorspar, manganese and copper offer a number of processing opportunities, such as the manufacturing of cement and industrial lime.

CHAPTER SIX: PUBLIC CONSULTATION

Public consultation process is a fundamental principal of the EIA process and it involves engaging members of the public to express their views about a certain project. Public involvement is a valuable source of information on key impacts, potential mitigation measures and the identification and selection of alternatives. The Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment Regulations of 2012 empowers the local community to participate in projects conducted within their jurisdiction. Section 21 to 24 of the EIA regulations of 2012 describe the public consultation process. During the public consultation of the proposed exploration project, the following principals were used: inclusivity, transparency and relevance.

6.1 OBJECTIVES OF THE STAKEHOLDER CONSULTATION PROCESS

The objectives of the public consultation are;

- To inform I&AP about the proposed activity and to give them the opportunity to express their views, concerns or opinions.
- To reduce conflict through early identification of contentious issues
- To gather potential negative and positive environmental impacts associated with the proposed project from the stakeholders' perspectives.
- To engage stakeholders for the effective mitigation and enhancement of negative and positive impacts arising from the proposed project respectively.

6.2 PRINCIPLES GOVERNING PUBLIC CONSULTATION

The following principals were used during the public participation:

6.2.1 Inclusivity

The public participation was open for everyone; invitation to make comments and attend the meeting was announced in the local newspapers, New Era and Windhoek Observer. To ensure that all stakeholders were involved, the consultant compiled a list which included the neighboring farms and organizations, **see Appendix A, letters sent to stakeholders.**

6.2.2 Open and transparency

The consultant took time to explain the background of the project and both positive and negative impacts associated with the project. All people who registered as Interested and Affected Parties were also given a BID.

6.2.3 Relevance

The consultant remained focused on subjects related to the project. Interested and Affected Parties were supposed to make comments relating to socio-economic and environmental impacts associated with the project. Political and other non-related comments were considered not relevant.

6.3 NOTIFICATION OF INTERESTED AND AFFECTED PARTIES

The consultation was facilitated through the following means:

6.3.1 Background Information Document (BID)

The consultant prepared a BID, which was circulated to Interested and Affected Parties. A BID is a short document, which briefly gives the background of the project. The main aim of distributing the BID to Interested and Affected Parties is to bring awareness and clarity about the proposed project. **A copy of the BID is provided in Appendix A.**

6.3.2 Advertisement

Adverts were placed in two local newspapers namely, New Era and Windhoek Observer as shown in table 7 below.

Table 7: shows details of the public notification for the project

Newspaper	Area of Distribution	Language	Date Placed
Windhoek Observer	Country Wide	English	11 April 2023
Windhoek Observer	Country Wide	English	30 March 2023
New Era	Country Wide	English	6 April 2023
New Era	Country Wide	English	30 March 2023
Site notices	Ohorongo Cement	English	16 April 2023

(See Appendix A)

6.3.3 Public Meeting

The public meeting was announced in the New Era and Windhoek Observer. The meeting was supposed to be held on 17 April 2023 at Khorab Lodge but no one attended.

6.3.4 Questionnaires

Questionnaires were also distributed amongst the participants so as to gather more information on their views towards the project. Distribution of questionnaires was also done to allow stakeholders to air their views privately. The questionnaires were open –ended whereby the respondent was free to express their views and ideas. **The questionnaires are attached in Appendix A.**

6.3.5 Public Notices

Notices with project information were placed at Ohorongo Cement which is also situated at farm Sargberg which is part of the study area. Site images below show the notices.



Site image 5: shows public notices at Ohorongo Cement

6.4 SUMMARY OF STAKEHOLDERS CONSULTATION.

During the public consultation process, of the letters which were sent to the neighbors, Ohorongo Cement only responded but no questions and recommendations were brought forward. Farms Rentes, Eilenriede and Sargberg excused themselves from attending the meeting. One of the Interested Party who registered with the project, requested for a KML of the project and it was sent to him. **See Appendix A**, for letters sent to the neighbors and Questionnaires.

6.4.1 Stakeholders' Recommendations

No recommendations were brought forward.

CHAPTER SEVEN: ASSESSMENT OF ENVIRONMENTAL IMPACTS

This section serves to identify all the potential impacts both negative and positive. In identifying these potential impacts, mitigation measures have been proposed so that the Proponent may carry out the process in an environmentally sound manner. The methodology, which was used to assess impacts and alternatives, include the following:

- Public consultation
- Site visit
- Professional experience

7.1 IDENTIFICATION OF POTENTIAL IMPACTS OF THE PROJECT

Positive Impacts

- Local empowerment
- Employment creation.

Negative impacts

- **Air Environment**
- Dust
- Noise
- **Land Environment**
- Impact on landscape
- Vegetation loss
- Generation of waste
- Impact on fauna
- Impact on soil
- **Water Environment**
- Impact on surface and groundwater sources
- **Socio -Economics**
- Occupational Health and Safety risks.
- Heritage impact
- **Indirect Impacts**
- Cumulative impacts

7.2 IMPACT ANALYSIS

In this section, the impacts of the proposed project on human and biophysical environment are evaluated and analyzed. Following the identification of the various potential environmental impacts, the matrix method was used to evaluate the impacts.

Table 8: ranking matrix

	Temporal scale		Score
EFFECT	Short term	Less than 5 years	1
	Medium term	Between 5 and 20 years	2
	Long term	Between 20 and 40 years (a generation) and from a human perspective almost permanent.	3
	Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there.	4
	Spatial Scale		

	Study area	The proposed site /within immediate area of the activity	1
	Beyond project boundary	Surrounding area outside the project boundary	2
	Regional	District and Provincial level	3
	National	Country	4
	International	Internationally	5
	Severity		Benefit
	Slight/Slightly Beneficial	Slight impacts on the affected system(s) or party(ies)	Slightly beneficial to the affected systems(s) or party(ies)
	Moderate/Moderately Beneficial	Moderate impacts on the affected system(s) or party(ies)	An impact of real benefit to the affected system(s) or party (ies)
	Severe/Beneficial	Severe impacts on the affected system(s) or party(ies)	A substantial benefit to the affected system(s) or party(ies)
	Very Severe/Very Beneficial	Very severe change to the affected system(s) or party(ies)	A very substantial benefit to the affected system(s) or party(ies)
	Likelihood		
LIKELIHOOD	Unlikely	The likelihood of these impacts occurring is slight	1
	May occur	The likelihood of these impacts occurring is possible	2
	Probable	The likelihood of these impacts occurring is probable	3
	Definite	The likelihood is that this impact will definitely occur	4

Table 9: ranking matrix for environmental significance

Environmental Significance		Positive	Negative
LOW	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent development.	4-7	4-7
MODERATE	An important impact, which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which, in conjunction with other impacts may prevent its implementation.	8-11	8-11
HIGH	A serious impact, which, if not mitigated, may prevent the implementation of the project. These impacts would be considered by society as constituting a major and usually long-term change to the natural and/or social environment and result in severe negative or beneficial effects.	12-15	12-15
VERY HIGH	A very serious impact, which may be sufficient by itself to prevent the implementation of the project. The impact may result in permanent change. Very often, these impacts are unmitigable and usually result in very severe effects or very beneficial effects.	16-20	16-20

Table 10: matrix to show environmental significance

	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	4	5	6	7	8	9	10	11	12	13	14	15	16	17
2	5	6	7	8	9	10	11	12	13	14	15	16	17	18
3	6	7	8	9	10	11	12	13	14	15	16	17	18	19
4	7	8	9	10	11	12	13	14	15	16	17	18	19	20

7.3 IMPACT EVALUATION

To note, the proposed exploration methods which include utilizing historical available data, sampling and mapping and use of aerial images are expected to generally cause minimum impact to the environment.

7.3.1 Negative impacts associated with exploration phase:

1. Impact on landscape

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance	
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Impact on landscape Unmitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

During the exploration phase, it will be unlikely that the original landscape will be disturbed given the exploration methods which will be used. No trenching and drilling will be conducted as mainly historical available data and aerial images will mainly be used. Possible sources which might affect the scenery of the site is litter generated by exploration personnel and any spillages from fuel or oils of exploration vehicles.

Mitigations and recommendation

- If the need arises in future to use the methods of drilling and trenching, an addendum should be done to the EMP report.

2. Dust

Identified Impact	Effect						Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact	Score			
Dust Unmitigated	Short term	1	Study area	1	Slight impact	1	May occur	2	5
Mitigated	Short term	1	Study area	1	Slight impact	1	unlikely	1	4

Dust is expected to be generated during movement of exploration vehicles. The severity of the impact is expected to be slight such that it will not affect by-passers or animals. The impact is however expected to be of low environmental significance thus without or with mitigation measures.

Mitigations and recommendation

- When driving around the study area, the drivers should minimize their speed to avoid emitting more dust

3. Noise impact

Identified Impact	Effect						Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact	Score			
Noise Unmitigated	Short term	1	Study area	1	Slight impact	1	May occur	2	5
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

During exploration, noise above the ambient levels of the area might be generated locally from frequenting vehicles and movement of exploration personnel. Noise generated will not affect outside the boundaries of the EPL. Noise generated might however affect animals in the vicinity. The impact of noise will remain of low environmental significance with or without mitigation.

Mitigations and recommendation

- Noise should be addressed and mitigated at an early stage.
- Proper and timely maintenance of vehicles

4. Vegetation loss

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact			
Vegetation Loss Unmitigated	Short term	1	Study area	1	Slight impact	1	unlikely	4
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	4

The proponent will use existing roads hence no new roads will be established but cutlines might only be created for accessibility of vehicles thus when there is need.

Mitigations and recommendation

- Protected plant species should not be removed but preserved and the activities should fit into the environment without affecting the protected trees.
- Massive clearing shall not be allowed

5. Impact on soil

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance	
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Soil Unmitigated	Short term	1	Study area	1	Slight impacts	1	May occur	2	5
Mitigated	Short term	1	Study area	1	Slight impacts	1	Unlikely	1	4

Soil might be partly affected by oil or fuel leakages from exploration vehicles. The impact is expected to affect only the immediate study area and the probability of soil being contaminated is unlikely if the proponent takes proper care of the exploration vehicles.

Mitigations and recommendation

- Proper care should be taken so that there is no spill that would cause soil contamination
- If any hazardous waste is produced it should be properly handled and sent for disposal to appropriate disposal areas
- Fuels shall not be kept/stored at the site.

6. Impact on surface and groundwater sources

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance	
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Surface & groundwater Unmitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

There will be no storage of oils and fuel on site, however there is risk of spillage of hydrocarbons from vehicles which may result in environmental contamination. It is essential to note that, there are no nearby rivers which will make surface water sources less likely at risk. Groundwater sources might be the one at risk if any spillages occur in high volumes.

Mitigations and recommendation

- Implement a maintenance programme to ensure all vehicles remain in proper working condition and maintenance should be conducted in designated areas only, preferably off-site.
- Waste oils and fuels from drip trays on stationary vehicles should be disposed of as hazardous waste at a licensed disposal facility.

7. Impact on fauna

Identified Impact	Effect					Score	Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Impact on fauna Unmitigated	Short term	1	Study area	1	Slight impact	1	May occur	2	5
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

Exploration activities (walking around and movement of vehicles) might scare away animals. In addition, wild animals might also be at risk if prospectors practice poaching activities for meat.

Mitigations and recommendation

- Working hours should be limited to during the day, thus enabling wildlife to roam freely at night.
- Poaching shall not be allowed
- Speed limits should be observed when driving around the site

8. Generation of waste

Identified Impact	Effect					Score	Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Impact of waste Unmitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

Waste might be generated from oils, fuel, food leftovers, papers and plastics. If the impact is to happen, it is expected to be a slight impact given that the proposed exploration methods will not produce any waste, the exploration personnel will not be many as at this stage only the geologist and assistants will be employed full time hence their numbers will be too low to cause severe impacts on waste generation.

Mitigations and recommendation

- Contaminated waste in the form of soil, litter and other material must be disposed off at an appropriate disposal site.
- Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts.

7.3.2 Negative socio-economic impacts associated with exploration phase:

1. Occupational Health and Safety Risks

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance	
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
O.H.S Unmitigated	Short term	1	Study area	1	Moderate impacts	2	May occur	2	6
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

Occupational stress and injuries during field work are hazards which might be encountered during the exploration phase. Moreover, work pressure on employees can cause stress which can result into accidents.

Mitigations and recommendation

- Conduct Hazard identification and risk assessments
- Comply with all Health and Safety standards specified in the Labor Act.
- Provide all staff on site with appropriate protective equipment (helmets, gloves, work suits, safety shoes etc.)

2. Heritage impact

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance	
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Heritage impact Unmitigated	Short term	1	Study area	1	Slight impact	1	May occur	2	5
Mitigated	Short term	1	Study area	1	Slight impact	1	Unlikely	1	4

At the site, there are no known heritage areas or artefacts deemed to be impacted by the exploration activities. The nearest heritage sites are Khorab Memorial and Ghaub Curve which are approximately 10.3 km and 24 km from EPL 8771 respectively hence the exploration project is unlikely to impact any heritage resources. In addition, the proposed exploration methods which will be used are only to verify and complement the existing data hence the proposed exploration phase will not pose significant disturbances to the environment. In addition, if the proponent come across archaeological features or objects that possess cultural values (e.g. Pottery, bones, shells, ancient clothing or weapons, ancient cutlery, graves etc.), the area should be barricaded off and the relevant authorities should be contacted immediately.

Mitigations and recommendation

- All works are to be immediately ceased should an archaeological or heritage resource be discovered.
- The National Heritage Council of Namibia (NHCN) should advise with regards to the removal, packaging and transfer of the potential resource.

7.3.3 Positive impacts associated with the project

1. Employment creation

Identified Impact	Effect					Risk or Likelihood	Score	Overall Significance	
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Employment creation Unmitigated	Short term	1	National	4	Very beneficial	8	Definite	4	17
Mitigated	Short term	1	National	4	Very beneficial	8	Definite	4	17

It is definite that jobs will be created during the exploration phase. The type of jobs will mainly be for skilled personnel and local personnel and local companies will be recruited.

2. Local Empowerment

Identified Impact	Effect					Score	Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Local Empowerment Unmitigated	Permanent	4	Regional	3	Very beneficial	8	Definite	4	19
Mitigated	Permanent	4	Regional	3	Very beneficial	8	Definite	4	19

The shareholders of Otavi Cement Group (Pty) Ltd are Namibian citizens. If minable deposits are discovered and the project moves to mining phase, the shareholders and those who depend on them will benefit as long as the mine is operating.

3. Generation of Revenue

Identified Impact	Effect					Score	Risk or Likelihood	Score	Overall Significance
	Temporal Scale	Score	Spatial Scale	Score	Severity of impact				
Revenue Unmitigated	Permanent	4	National	4	Very beneficial	8	Definite	4	20
Mitigated	Permanent	4	National	4	Very beneficial	8	Definite	4	20

Otavi Cement Group (Pty) Ltd will pay tax hence generating revenue. More taxes will also be generated through contracted and subcontracted companies.

7.3.4 Post-Exploration Phase

The stage of exploration is expected to have minimum damage to the environment as compared to mining. If the proponent maintains the proposed exploration methods, damages to the environment will not be expected hence no rehabilitation will be required at this stage. In an event that the proponent makes an addendum and include drilling and trenching in future activities, there will be need for rehabilitation. The following shall then be done as a way to restore the environment:

- All pits shall be backfilled or contoured to a stable angle of repose.
- Stockpile disturbed bedrock on site in a safe and stable manner.

7.4 SUMMARY & ANALYSIS OF IMPACTS

During the exploration phase all rated impacts fell under low environmental impacts thus without or with mitigation measures. This therefore implies that; the impacts are acceptable impacts for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent development.

CHAPTER EIGHT: ENVIRONMENT MANAGEMENT AND MONITORING PLAN

Environmental planning and management as a concept seek to improve and protect environmental quality for both the project site and the neighborhood through segregation of activities that are environmentally incompatible. Environmental planning and management integrate land use structure, social systems, regulatory law, environmental awareness and ethics. Environmental Management Plan (EMP) is a vital output for an Environmental Impact Assessment as it provides a checklist for project monitoring and evaluation.

EMP for the proposed project is aimed at providing a logical framework within which identified negative environmental impacts can be mitigated and monitored. **See Appendix C**, for the EMP.

CHAPTER NINE: CONCLUSIONS AND RECOMMENDATIONS

9.1 CONCLUSION

The social and economic rating for this project is highly positive. The project does not pose any serious negative environmental impacts. Mitigation measures have been proposed to address any of the negative impacts arising from the project. Should the Proponent implement all the suggested mitigation measures, the consultant recommends the issuance of the Environmental Clearance Certificate.

9.2 RECOMMENDATIONS

The following recommendations have been brought forward:

- An addendum should be done to the EMP, if the proponent intends to add other exploration methods
- Unnecessary clearing of vegetation shall not be allowed unless when the need arise to create cutlines for accessibility of vehicles.
- Environmental monitoring by an independent environmental consultancy must be carried out during the exploration phase to monitor environmental compliance. Bi-annual reports should be written and submitted to MEFT. These monitoring reports should accompany the application for renewal of the environmental clearance certificate after 3 years

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