
Environmental Scoping and Management Report

The Beauna Mining (Pty) Ltd.'s Application for Environmental Clearance Certificate in Respect to the Proposed Construction and Operation of a Hydrometallurgy Copper Plant near Sesfontein, Kunene Region



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executive summary

Project Overview

Beauna Mining (Pty) Ltd is a mineral mining entity, established in 2021 and registered with the Business and Intellectual Property Authority (BIPA) in Namibia in 2022, with the sole intention to explore, develop and extract copper and related commodities. Our mine is situated in the Otjikondavirongo Opuwo Rural constituency in the Kunene Region, Namibia.

The company has six shareholders, comprising of two Namibians and four Chinese. Our company's primary business is the construction and operation for and extraction of minerals to meet the global demand and in the same vein, contributing to the local economic development of the land and its people.

As the company is in the construction phase of their mine, the current workforce stands at 28 employees and is expected to double by the time we conduct full scale mining, within the next four to six weeks.

Potential impacts may vary in terms of scale (locality), magnitude and duration e.g. minor negative impacts in the form of dust and noise pollution especially during the handling (loading and off-loading) will be experienced.

Need for the Project

Namibia is endowed with various minerals, and the mining industry has contributed 12-14% of Gross Domestic Product (GDP) and 50% of foreign export earnings in recent years. Currently, some minerals are not economical to extract. At the same time, those being mined are subjected to varying levels of beneficiation within the country, ranging from first level concentration to refined products. The desired goal of Government and other stakeholders is to maximise the level of mineral beneficiation within the country to reduce transportation costs of semi-processed minerals, increase job opportunities for the local population, and provide feedstock for the local manufacturing industry.

Hence, the proposed activity responds to Namibia's strategic vision 2030 and the NDP5 of creating a conducive environment within which its citizens prospers and contribute to the national development goals by processing its mineral locally and thus creating employment opportunities. Overall, this activity contribute to the nation's efforts of elevating poverty amongst the rural citizens.

Critically, going ahead with the proposed activity creates potential for the following marginal net benefits:

- Contribution Taxes and Royalty
- Technological Skill and Knowledge transfer
- Creates the most needed employment opportunities

Project Description

In particular to this Scoping Assessment, Beauna Mining (Pty) Ltd envisage to build a Hydrometallurgy Copper Plant near Sesfontein Settlement (about 6km to the east, **Figure 1**) to aid the process and advance to a point they are able to smelt their own products locally. Hence, the company has identified a land area of ~ 100 (Ha) hectares for which it wishes to obtain a leasehold and therefore the need for, in addition to other legislative requirements they seek to obtain an environmental clearance certificate for the proposed processing plant.

The key component of the proposed activity entails land surveying, creation of access track / road, construction of office and Supporting infrastructures (ablution, power and water storage facilities), Workshop, laboratory, staff accommodation camp, processing / leaching ponds, stockpile area and tailings dams (including temporary on-site solid-waste yard).

Beauna mining (PTY) LTD embarks on an ambitious venture with its 3000 t/a cathode copper hydrometallurgy project. The following supporting infrastructures and services will be required:

- (i) **Processing Technique:** Utilizing oxidized copper ore, the process involves crushing, grinding classification, pre-leaching dewatering, agitated leaching, counter-current washing, extraction, and electro-winning to produce cathode copper. The project's scale is set to handle 165,000t/a to be primarily sourced from their own mine and local small-scale miners of raw ore, yielding 3,394t/a of cathode copper.
- (ii) **Operational equipment:** Multiple excavators, wheel-loaders, forklift loaders, diesel generator sets, four-cylinder mining machines, wire saw machines, semi-automatic drilling machines, containers, trucks, 4 by 4 cars and air-compressors.
- (iii) **Storage of Chemicals, Fuels and lubricants:** As back-up power supply, a Diesel Generator Sets shall be installed on-site. Therefore, there will be need to store some fuel and oils on-site, the exact volume will be determined during the assessment process. Other chemicals to be stored on-site includes Sulfuric acid (98%) Cobalt sulphate, Extractant (OPT5540), Gul gum, and No. 260 solvent oil.
- (iv) **Water supply:** The proponent wishes to source raw water from existing local groundwater resources i.e. boreholes, however, Enviro-Leap recommend that proponent primarily meets their water demand through the Sesfontein Water Supply Scheme (NamWater), else a Hydrology Specialist Study must be undertaken and relevant authorizations obtained from MAWLR. The Proponent will utilise the existing boreholes and will also drill additional boreholes as may be required; an estimated total volume of 6015.92 m³/day ((5511.75 Freshwater blended with 441.92 Recycled water for production).
- (v) **Energy requirements:** The plant's electricity demand, calculated apparent power is estimated to total to 16.9468 million kW annual electricity consumption. Among them, primary load: installed load 368.7kW, operating load 368.7kW, active power 269.19kW, with these electricity applications already submitted to NORED and NamPower for consideration.

Need for an Environmental Impact Assessment

While increased economic activities can stimulate demographic changes and alter social, economic and environmental practices in many ways. Adverse environmental and socio-economic impacts have become a major area of concern for the business community, their customers, and other key stakeholders. As a result, companies seek to manage these impacts as part of their ethical and sustainable business conduct.

Similarly, identifying, avoiding, mitigating and managing impacts, is a necessary condition for Beuna Mining to undertake its operation in compliance with the environmental legislative requirements in Namibia.

Therefore, Beuna Mining appointed Enviro-Leap Consulting cc to conduct an environmental assessment and facilitate the process of obtaining and Environmental Clearance Certificate.

Approach to the EIA Process

The assessment process consisted of a site visit to the project location and public consultation meetings with the Interested and Affected Parties (I&APs). An environmental scoping and management plan (EMP) were compiled and constitute the application for an Environmental Clearance Certificate submitted to the Ministry of Environment and Tourism (Office of Environmental Commissioner).

Overall Recommendation

Based on the findings of the environmental scoping assessment, which concludes that all potential negative impacts associated to the proposed Beuna's processing operations are minimal and practical mitigation measures are available. Equally, the positive impacts can be harnessed to increase the net marginal benefits relating to the socio-economic aspects of the operations.

The proposed operations is considered to have an overall low negative environmental impact and an overall moderate positive socio-economic impact (with the implementation of respective mitigation and enhancement measures). Therefore, it is recommended that the proponent must upon obtaining their Environmental Clearance Certificate (ECC), implement all appropriate management and mitigation measures and monitoring requirements as may be stipulated in their EMP and or as condition of the ECC.

These measures must be undertaken to promote and uphold good practice environmental principles and adhere to relevant legislations by avoiding unacceptable impacts to the receiving environment. Taking into consideration the findings of the environmental scoping assessment process and given the national and regional strategic requirements, the proposed project will make a positive contribution towards steering Namibia on its pathway towards its vision of adding value to its mineral locally.

Provided that the specified mitigation measures are applied effectively, it is recommended that Beuna's are issued with an ECC in terms of the Section 32 of the EMA No. 7 of 2007 and it's EIA Regulations of 2012.

glossary

AfDB	African Development Bank
BID	Background Information Document
BoN	Bank of Namibia
CA	Competent Authority
DEAF	National Department of Environmental Affairs and Forestry
EA	Environmental Authorization
E	Environmental Clearance Certificate
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
GPS	Geographical Positioning System
MME	Ministry of Mines and Energy
MEFT	Ministry of Environment, Forestry and Tourism
IMF	International Monetary Fund
GPS	Geographical Positioning System
UN	United Nations

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1. INTRODUCTION

The Environmental Management Act No. 7 of 2007 (also referred to as the EMA) and its Regulations promulgated in the Government Gazette No. 4878 of 2012, stipulates that for each developmental activity, which is listed as those that may not be undertaken without obtaining an Environmental Clearance Certificate (ECC), an Environmental Assessment (EA) must be conducted. The proposed handling, storage and transportation of fuel and mineral commodities triggers some listed activities in terms of the EMA.

Therefore, an environmental assessment must be conducted with an aim to identify, assess and ascertain potential environmental impacts that may arise as a result of undertaking the proposed operations. Hence, the environmental assessment is a process by which the potential impacts, whether positive or negative are predicted / identified, findings interpreted and communicating to interested and affected parties (I&APs) for inputs.

Additionally, this report presents findings of an environmental scoping process that evaluates the likely socio-economic and environmental effects of the proposed operation, and further identifies suitable mitigation measures for avoiding or minimizing the predicted impacts. The envisioned EIA process was undertaken in a holistic approach encompassing different elements as shown in **Figure 1**.



Figure 1: Anticipated Environmental Assessment Timeline

1.1. PROJECT APPLICANT AND PROJECT OVERVIEW

Beauna Mining (Pty) Ltd is a mineral mining entity, established in 2021 and registered with the Business and Intellectual Property Authority (BIPA) in Namibia in 2022, with the sole intention to explore, develop and extract copper and related commodities. Our mine is situated in the Otjikondavirongo Opuwo Rural constituency in the Kunene Region, Namibia.

The company has six shareholders, comprising of two Namibians and four Chinese. Our company's primary business is the construction and operation for and extraction of minerals to meet the global demand and in the same vein, contributing to the local economic development of the land and its people.

As the company is in the construction phase of their mine, the current workforce stands at 28 employees and is expected to double by the time we conduct full scale mining, within the next four to six weeks.

1.2. REQUIREMENTS FOR AN ENVIRONMENTAL IMPACT ASSESSMENT

While increased economic activities can stimulate demographic changes and alter social, economic and environmental practices in many ways. Adverse environmental and socio-economic impacts have become a major area of concern for the business community, their customers, and other key stakeholders.

As a result, companies seek to manage these impacts as part of their ethical and sustainable business conduct. Similarly, identifying, avoiding, mitigating and managing impacts, is a necessary condition for Beuna to undertake its proposed operation in compliance with the environmental legislative requirements in Namibia.

To ensure that development activities are undertaken in an economic, social and environmental sound / sustainable manner, the Namibian Constitution and Environmental Management Act No. 7 of 2007 provides for an environmental assessment process.

The purpose of the environmental assessment and therefore this report are to ensure compliance of the proposed operations with the environmental legislation in respect to managing potential impacts associated with or triggered by (**Table 1**) the proposed Beuna's proposed construction and operation of the Hydrometallurgy Copper Plant activities:

- Identifying potential socio-economic and environmental impacts
- Proposing management measures to avoid, prevent and of mitigate these
- Compile an Environmental Management for compliance monitoring and reporting on the implementation of the Environmental Clearance Certificate conditions

Table 1: List of activities identified in the EIA Regulations which apply to the proposed project

EMA 2007 Legislation	Description of activity	Relevance to this project
Activity 1	1. The construction of facilities for - (a) the generation of electricity; (b) the transmission and supply of electricity;	The planned development will include installation of powerline and substations, and use of back-up power generator (diesel)
Activity 2	2.1 The construction of facilities for waste sites, treatment of waste and disposal of waste.	The planned development will include the construction of a temporary effluent waste management facilities (ponds)
Activity 3	3.1 The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992.	Beuna Mining (Pty) Ltd envisage to build a Hydrometallurgy Copper Plant to aid the process and advance to a point they are able to smelt their own products locally.
Activity 4	4. The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorization in term of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.	The selective clearance of vegetation at the site to allow the construction activities to take place
Activity 5	5.1 The rezoning of land from - (c) agricultural use to industrial use; and 5.2 The establishment of land resettlement schemes.	The planned development is proposed to be undertaken on a currently virgin land within communal land, thus a leasehold certificate is needed.
Activity 9	9.1 The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.	The planned development will include the construction of a temporary effluent waste management facilities (ponds)

	9.2 Any process or activity which requires a permit, licence or other form of authorisation, or activity which requires a licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.	
Activity 10	10.1 The construction of- (b) public roads; 10.2 The route determination of roads and design of associated physical infrastructure where - (a) it is a public road;	The planned development includes the creation and development (construction) of new access road from the D3707 to the project site

Therefore, Beuna Mining (Pty) Ltd. appointed Enviro-Leap Consulting to conduct an environmental assessment and facilitate the process of obtaining and Environmental Clearance Certificate.

1.3. EIA TEAM

As previously noted, Enviro-Leap Consulting (see **Table 2** for the composition of ELC’s team for this EA) has been appointed by Beuna Mining to undertake the environmental assessment required for the proposed project. A public participation process (PPP) forms an integral part of the Environmental Assessment Process to aid in identifying issues and possible alternatives for consideration. Details on the PPP are included in section 4 of this Scoping Report.

Table 2: The EIA Management Team

NAME	ORGANISATION	ROLE/ SPECIALIST STUDY UNDERTAKEN
Environmental Assessment Practitioners		
Shadrack Tjiramba	Enviro-Leap Consulting	Environment Practitioner
Lawrence Tjatindi	Enviro-Leap Consulting	Internal Reviewer

1.4. DETAILS AND EXPERTISE OF THE EAP

Over the past four years the Enviro-Leap Consulting has been involved in a multitude of Environmental Assessment projects across SADC and within Namibia. The Environmental Practitioners of Enviro-Leap Consulting has a combined of more than 35 years’ experience in the environmental sector (management and policy), ecological research and stakeholder engagement. Consequently, the team offers a wealth of experience and appreciation of the environmental and social priorities and national policies and regulations in Namibia.

1.5. OBJECTIVES OF THE ENVIRONMENTAL SCOPING ASSESSMENT

In broad terms, the 2012 EMA EIA Regulations (GG 4878) stipulates that an EIA Process must be undertaken providing to determine the potential environmental impacts, mitigation and closure outcomes, as well as the residual risks of any listed activity. The primary objective of this EA Report is to present stakeholders, I&APs and the Competent Authority, the DEA, with an overview of the predicted impacts and associated management actions required to avoid or mitigate the negative impacts; or to enhance the benefits of the proposed Beauna Mining operations.

Therefore, based on these (EIA Regulations), the objectives of the Environmental Assessment (EA) Process is to:

- determine the policy and legislative context within which the activity is located and note how the proposed activity complies with and responds to the policy and legislative context;
- describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- determine the nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and the degree to which these impacts (a) can be reversed; (b) may cause irreplaceable loss of resources, and (c) can be avoided, managed or mitigated; and
- identify suitable measures to avoid, manage or mitigate identified impacts;

2. PROJECT DESCRIPTION

This section provides an overview of the conceptual overview of the proposed Beuna Mining's construction and operation of the Hydrometallurgy Copper Plant, sites and technology selection process for identifying the most suitable construction and operation techniques to be adopted.

2.1. OVERVIEW OF THE PROPOSED DEVELOPMENT OVERVIEW

In particular to this Scoping Assessment, Beuna Mining (Pty) Ltd envisage to build a Hydrometallurgy Copper Plant near Sesfontein Settlement (about 6km to the east, **Figure 2**) to aid the process and advance to a point they are able to smelt their own products locally. Hence, the company has identified a land area of ~ 100 (Ha) hectares for which it wishes to obtain a leasehold and therefore the need for, in addition to other legislative requirements they seek to obtain an environmental clearance certificate for the proposed processing plant.

Beginning in the mid-1980s a new technology, commonly known as the leach-solvent extraction-electrowinning process or, SX/EW Process, was widely adopted. This new copper technology utilizes smelter acid to produce copper from oxidized ores and mine wastes. Today, worldwide, approximately 20% of all copper produced is produced by this is process.

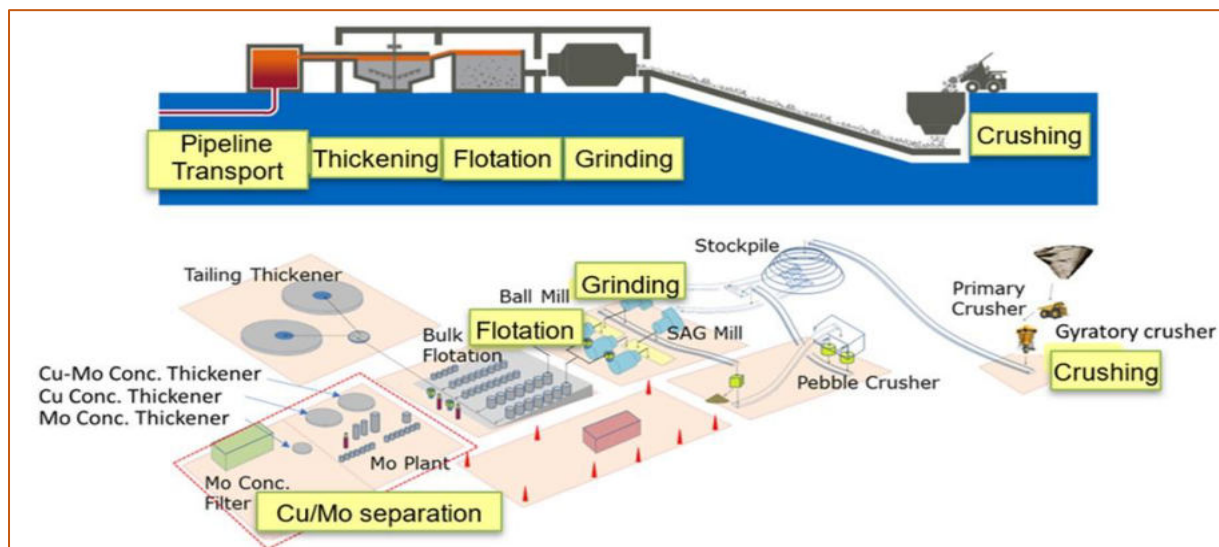


Figure 2: Illustration of the leach-solvent extraction-electrowinning (L-SX-EW) process for recovery of copper from oxide ores (Source: ,2024)

Equally, and considering that the SX/EW process has very little environmental impact because its liquid streams are very easily contained, There is no effluent inasmuch as all impurities are returned to the site where they originated and the sulfuric acid is eventually neutralized by the limestone in the ore body or waste dump where it is deposited as calcium sulphate (gypsum) - a very insoluble substance.

The key component of the proposed activity entails land preparation (levelling and clearing), creation of access track / road, construction of office and Supporting infrastructures (ablution, power and water storage facilities), Workshop, laboratory, staff accommodation camp, processing / leaching ponds, stockpile area and tailings dams (including temporary on-site solid-waste yard).

Beauna mining (PTY) LTD embarks on an ambitious venture with its 3000 t/a cathode copper hydrometallurgy project. The following supporting infrastructures and services will be required:

- (i) **Construction activities:** The project is scheduled for a 6-month preparation period: contract signing, basic design, main equipment inquiry, equipment tendering, ordering, and construction preparation. The construction period will last 12 months: on-site civil construction, equipment installation, no-load commissioning, load commissioning, and production feeding.

Currently, the work is in the project preparation period, with the construction phase expected to begin in July 2024 or as soon as all relevant authorizations are obtained. It is expected that an approximate volume of the following materials will be needed and shall be sourced locally; 2,700 tons of Cement, 1471000 Piece of Bricks, 205 Tons of steel: 900 m³ of Wood, 4,700 m³ of Sand and 5100 m³ of Gravel.

- (ii) **Processing Technique:** Utilizing oxidized copper ore, the process involves crushing, grinding classification, pre-leaching dewatering, agitated leaching, counter-current washing, extraction, and electro-winning to produce cathode copper. The project's scale is set to handle 165,000 t/a, to be primarily sourced from their own mine and supplemented occasionally by supply from local small-scale miners of raw ore, yielding 3,394t/a of cathode copper.
- (iii) **Operational equipment:** Multiple excavators, wheel-loaders, forklift loaders, diesel generator sets, four-cylinder mining machines, wire saw machines, semi-automatic drilling machines, containers, trucks, 4 by 4 cars and air-compressors.
- (iv) **Storage of Chemicals, Fuels and lubricants:** As back-up power supply, a Diesel Generator Sets shall be installed on-site complemented by a 20000litres diesel above-ground tank. Therefore, there will be need to store some fuel and oils on-site, the exact volume will be determined during the assessment process. Other chemicals to be stored on-site includes Sulfuric acid (98%) Cobalt sulphate, Extractant (OPT5540), Gul gum, and No. 260 solvent oil.

2.2. PROJECT RATIONALE (MOTIVATION, NEED AND DESIRABILITY)

2.2.1 Project Motivation

Namibia is endowed with various minerals, and the mining industry has contributed 12-14% of Gross Domestic Product (GDP) and 50% of foreign export earnings in recent years. Currently,

some minerals are not economical to extract. At the same time, those being mined are subjected to varying levels of beneficiation within the country, ranging from first level concentration to refined products. The desired goal of Government and other stakeholders is to maximise the level of mineral beneficiation within the country to reduce transportation costs of semi-processed minerals, increase job opportunities for the local population, and provide feedstock for the local manufacturing industry.

Hence, the proposed activity responds to Namibia's strategic vision 2030 and the NDP5 of creating a conducive environment within which its citizens prospers and contribute to the national development goals by processing its mineral locally and thus creating employment opportunities. Overall, this activity contribute to the nation's efforts of elevating poverty amongst the rural citizens.

Critically, going ahead with the proposed activity creates a potential for the following marginal net benefits:

- Contribution Taxes and Royalty
- Technological Skill and Knowledge transfer
- Creates the most needed employment opportunities

As the company is in the construction phase of their mine, the current workforce stands at 28 employees and is expected to double by the time we conduct full scale mining, within the next four to six weeks.

2.2.2 Project Need and Desirability

In particular, the Hydrometallurgy approach uses aqueous solutions to extract and refine metals. Although a typical metallurgical flowsheet tends to synergistically combine both pyro-metallurgical and hydrometallurgical unit operations, the final steps in the purification and recovery of metals are nearly always hydrometallurgical.

In existing hydrometallurgical flowsheets, partial circularity is common (*cf.*, Section "Examples of near circular hydrometallurgical flowsheets" in the online Supplementary Information). For instance, in solvent-extraction processes the extractant is regenerated during the stripping of the metal from the loaded organic phase.

However, circular hydrometallurgy goes one step further and dictates the regeneration of other reagents that are typically considered as consumables in conventional linear flow, therefore, significant volumes of salt solutions are produced (e.g., Na₂SO₄ solutions), which are typically discharged to surface waters.

Critically, attention is being paid to the water balance in conventional flow process, the soluble salt balance, the energy balance, and the input of reagents and output of waste streams remain significant.

2.3. PROJECT LOCATION

The envisaged Beuna Mining (Pty) Ltd Hydrometallurgy Copper Plant’s site is located near Sesfontein Settlement (about 6km to the east, **Figure 3, Map; Table 3, Corner point coordinates, and Figure 4, Site Layout**). The proposed project site is situated within the communal land area under the jurisdiction of the Nami-Daman Traditional Authority and is relatively flat with elevations ranging between 590 and 611 meters above sea level.

The company has identified a land area of ~ 100 (Ha) hectares for which it wishes to obtain a leasehold and therefore the need for, in addition to other legislative requirements they seek to obtain an environmental clearance certificate for the proposed processing plant.

The proposed project site is accessible, directly accessible thorough the C43 and then the D3707 district (gravel) road connecting Sesfontein via Kamanjab, Palmwag and Warmquelle. As far as is practical, the site shall be accessed through existing tracks, therefore no new roads or tracks will be created. Overall, all access by vehicles must be limited to existing access track.

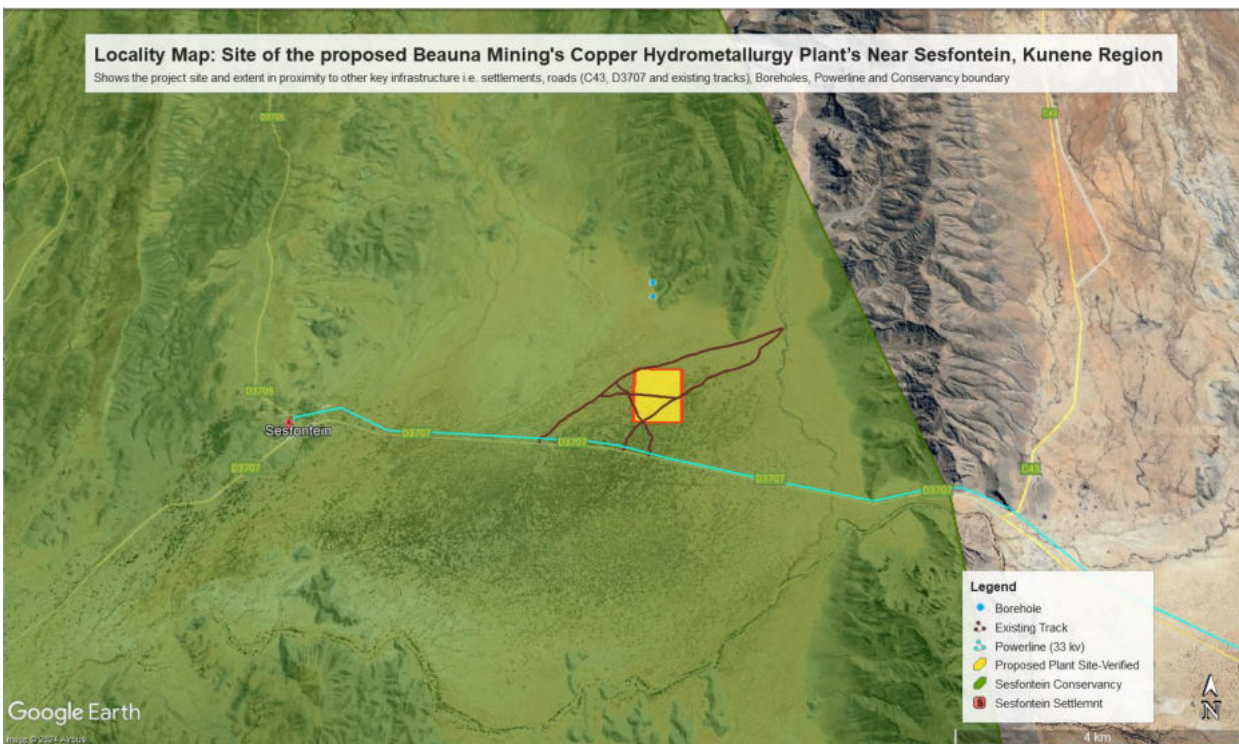


Figure 3: Show the location and area extent (~100 Ha) of the proposed Mining License 190 in the Erongo Region

Table 3: Corner coordinates of the proposed development site

Corner point	Latitude	Longitude
A – Site Corner Point 1	-19.122429°	13.677128°
B – Site Corner Point 2	-19.113441°	13.677239°
C – Site Corner Point 3	-19.113405°	13.669649°
D – Site Corner Point 4	-19.122381°	13.669579°

2.4. SUPPORTING INFRASTRUCTURE

2.4.1 Basecamp

Given that the envisaged development shall be an all-inclusive type development i.e. a section of the facility will be demarcated for the staff quarters, all key operational employees will be housed on-site during their working shift. However, during construction a temporary base-camp will be setup at an appropriate distance from the construction site in order to enhance occupational health and safety.

As the company is in the construction phase of their mine, the current workforce stands at 28 employees and is expected to double by the time we conduct full scale mining, within the next four to six weeks. In addition to this number, an approximate number of upto 250 employees, contractors and service provider will be employed both during the construction and operational phases of the proposed development.

All positions will be openly recruited, and residents of Sesfontein will be given priority if qualifications are equal. Some positions have high professional requirements; if local residents cannot meet the job needs, employees from other provinces will be recruited. Where practical and possible, it is strictly recommended that for unskilled labour, local community members are employed and thus accommodated at their existing homestead to mitigate and reduce potential conflict with the conservancy wildlife and livestock management protocols. Critically, this may aid to reduce potential impacts relating to excess production of sewerage, reduce influxes from other regions and thus minimizing water demand and waste production's footprint.

2.4.2 Water supply

Water supply: Raw water will be sourced from local groundwater resources. The Proponent will utilise the existing boreholes and will also drill additional boreholes as may be required; an estimated total volume of 6015.92 m³/day ((5511.75 Freshwater blended with 441.92 Recycled water for production).

2.4.3 Power supply

Energy requirements: The plant's electricity demand, calculated apparent power is estimated to total to 16.9468 million kW annual electricity consumption. Among them, primary load: installed load 368.7kW, operating load 368.7kW, active power 269.19kW, with these electricity applications already submitted to NORED and NamPower for consideration.

In respect to domestic power needs, the recommended lodging site is shall also be connected to the national power grid thus the energy requirements addressed adequately. However, the various machinery and equipment required for the operation e.g. vehicles are self-powered by means petrol / diesel engines and or generators, hence there is need for on-site fuel in either small mobile bowser or barrel drums on a concrete slab at the base-camp.

2.4.4 Access roads / tracks

The proposed project site is accessible, directly accessible thorough the C43 and then the D3707 district (gravel) road connecting Sesfontein via Kamanjab, Palmwag and Warmquelle.

As far as is practical, the site shall be accessed through existing tracks, therefore no new roads or tracks will be created. Overall, all access by vehicles must be limited to existing access track as on the map in **Figure 3**. Although, given the potential increase in traffic resulting from both the construction activities and or operational phase due to delivery vehicles, it may be recommended that the excess tracks be upgraded to gravel quality.

2.4.5 Waste (Domestic / Hazardous) Management

Domestic Waste: In terms of waste generation and management, the predominant type of waste that will be generated during the construction and operation activities, and in small volumes is domestic waste i.e. packaging material (paper, wooden box, plastic sampling bags). Domestic waste must be stored in heavy duty garbage bags and disposed of correctly either at the Kamanjab or Opuwo waste disposal sites whichever is practically possible.

Production hazardous waste: The production volume of leaching residue is 165,000 t/a, with an average dry stacking density of 1.25 t/m³, requiring an annual storage capacity of 132,000 m³. These consists of components of such as SiO₂, CaO, MgO, Fe₂O₃, K₂O, Na₂O, and small amounts of Cu, Mn, Zn, Co, etc., with a pH of 2~3. All leaching residue generated within the service life, must treated as hazardous and thus must be stored in the specially dedicated tailings storage facility (as far as necessary, the facility must be certified / approved by the relevant competent authorities i.e. Ministry of Agriculture, Water and Land Reform, and Ministry of Environment Forestry and Tourism). The leaching residue storage is located on the north side of the plant area; it is a flatland-type tailings storage facility surrounded by dams built with local soil.

The bottom and sides of the dams are to be appropriately lined with 1.5mm thick HDPE film for anti-seepage. The total capacity of the leaching residue storage is 2.73 million m³ with an effective capacity of 2.45 million m³, sufficient for all leaching residue produced within the service life. The first phase of the leaching residue storage is designed for a service life of 4.65 years.

Sanitation: Portable ablution facilities with septic tanks will be put up for sanitation purposes for the construction and operation and mining teams and will be emptied in good time according to manufacturers' instructions. Domestic Wastewater, an anti-seepage septic tank (**Figure 5**) will be constructed, into which all domestic wastewater will be discharged. There shall also be a designed domestic wastewater treatment system and the treated water will be used for plant irrigation in the factory area and other uses e.g. dust suppression. Excess, treated sewage shall be discharged into the intermediate liquid pool of the heap leaching site, where it naturally degrades before being returned to the production system for use.

Other effluent waste: wastewater produced in each workshop is collected locally and returned to appropriate processes for use without being discharged externally. The extraction workshop and electrowinning workshop are equipped with underground pump pools. Surface and platform washing water, as well as process circulating fluids, are collected through pump pools and then returned to appropriate processes for recycling.

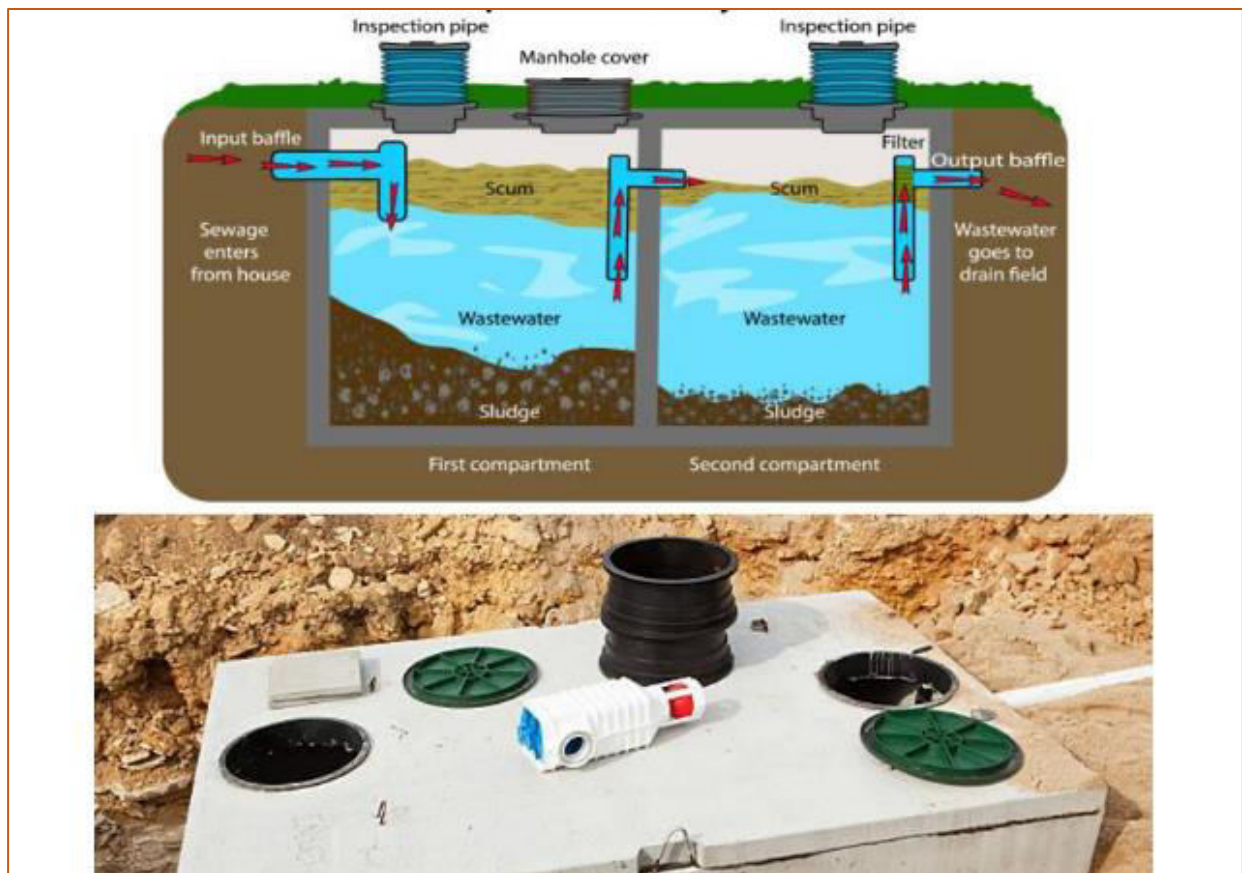


Figure 5: Illustration of a septic tank system that could be installed for the storage of wastewater prior to primary treatment

Handling and treatment of wastewater: The leachate residue storage wastewater shall be fully recycled for use in the mineral processing technology after sedimentation. The workshop floor washing water enters the underground pump pit through the ground drainage ditch, and after sedimentation, it is returned to the various mineral processing operations. All wastewater from the mineral processing system shall be recycled and not discharged.

2.5. DECOMMISSIONING AND CLOSURE PHASE

Taking into consideration that the proposed project does not involve any construction activities, decommissioning is not foreseen during the validity of the Environmental Clearance Certificate. Consequently, any impacts associated by default with this phase of a project are not applicable to the proposed activity.

However, should the proponent at any stage of the proposed project intend to construct any infrastructure, such must be subject to a separate environmental assessment and the mitigation measures to be identified in the appropriate Environmental Management Plan adhered to.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter of the Scoping Report provides an overview of the affected environment for the proposed construction and operation activities. The receiving environment is understood to include biophysical, socio-economic and heritage aspects which could be affected by the proposed development or which in turn might impact on the proposed development.

3.1 BIOPHYSICAL ENVIRONMENT

Namibia is characterized by four land type systems, the Namib, which runs along the entire west coast from the port town of Lüderitz, northwards into southern Angola; the Succulent Karoo which lies south of Lüderitz and extends across the Orange River into South Africa; the Nama Karoo which occurs immediately to the east of the previous two desert systems and covers most of the southern third of Namibia, tapering to a narrow belt from central Namibia northwards; and the Southern Kalahari which extends eastwards across to Botswana.

3.1.1 Climatic Conditions

About 22% of Namibia's land is classified as desert (hyper-arid), 70% is classified as arid to semi-arid and the remaining 8% is classed as dry sub-humid (Mendelsohn et al. 2003). The climate conditions of the Sesfontein area has been sourced from Mendelsohn et al (2002), Mateoblu Weather Online and Namibia Metrological Services (2024).

The average maximum temperature at Sesfontein Settlement, ranges between 30°C - 37°C (Figure 6) during the hottest month (November – April) while the average minimum in winter ranges between 6°C and 10°C are common (Mendelsohn et al. 2003). The average high temperature for Sesfontein area is 37°C recorded in October 2010 and 2016, and the minimum temperature is 10°C around June and July. The average monthly high and low temperatures for the area are 35°C and 12°C, respectively

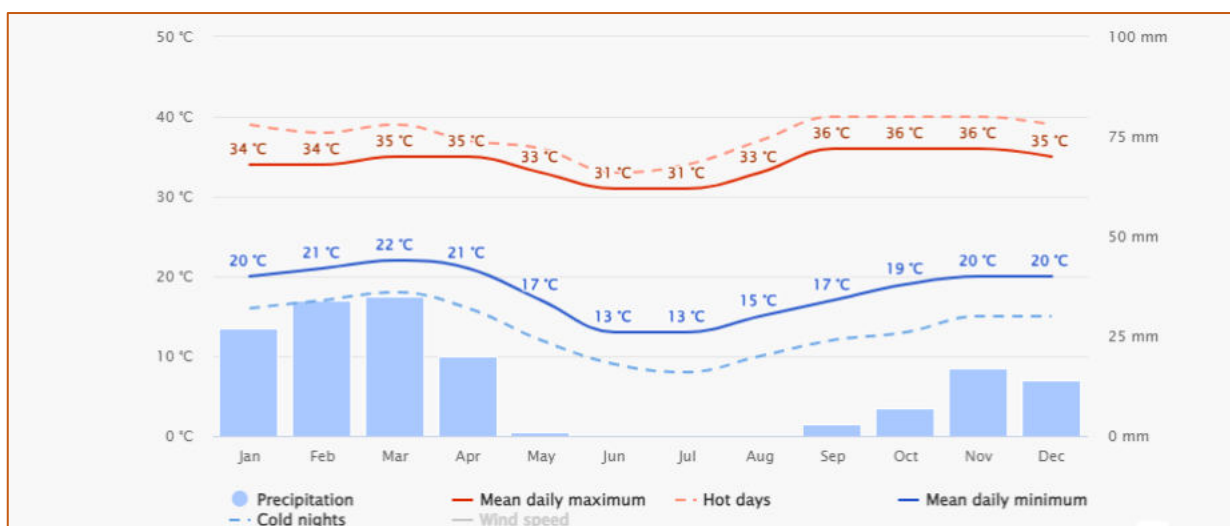


Figure 6: The summary of the climate at the project site i.e. Sesfontein settlement, Kunene Region

In the arid north-west, rainfall is spatially and temporally variable see **Figure 7**, and are highly variable with it not necessarily serve as good indicators of the amount of rainfall that can be expected in any given season (Jacobson et al., 1995). Nonetheless, Sesfontein has an average rainfall of 107 mm, but in 1995 the area received 335mm of rain while in 1981, 0mm of rain was recorded (Leggett et al., 2001).

Both of these rainfall figures fell within the natural variability range for rainfall in the area, otherwise the rainfall in the catchment for the 1999 and 2000 wet seasons are discussed in detail in Leggett et al. (2002a). During the 1999 wet season, the catchment received approximately 70% of the long-term mean rainfall.

However, during the 2000 wet season, the eastern section of the catchment received approximately 170% (above-average rains) of the long-term mean and the western catchment received 100% (average rainfall).

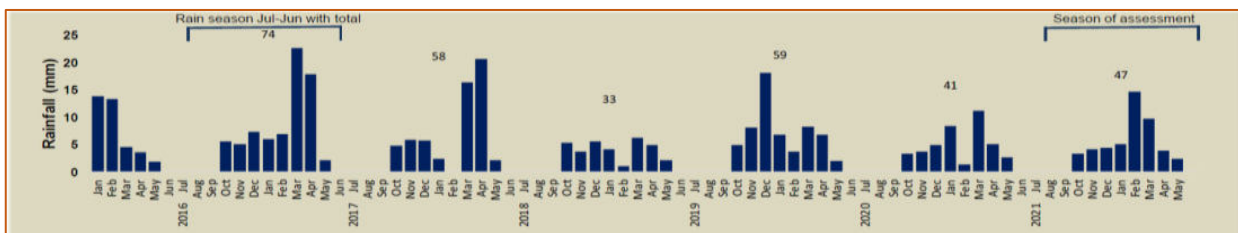


Figure 7: Shows seasonal trend in rainfall in the Sesfontein area

The wind rose for Sesfontein shows is generally reported by the direction from which it originates, for instance, predominant winds is blowing from South-West to North-East (Mateoblue, 2024). Similarly, an east or easterly wind blows from the east to the west. The wind direction values represent the bearings or degrees which can be interpreted from the wind rose image and wind direction table image in **Figure 8**, below.

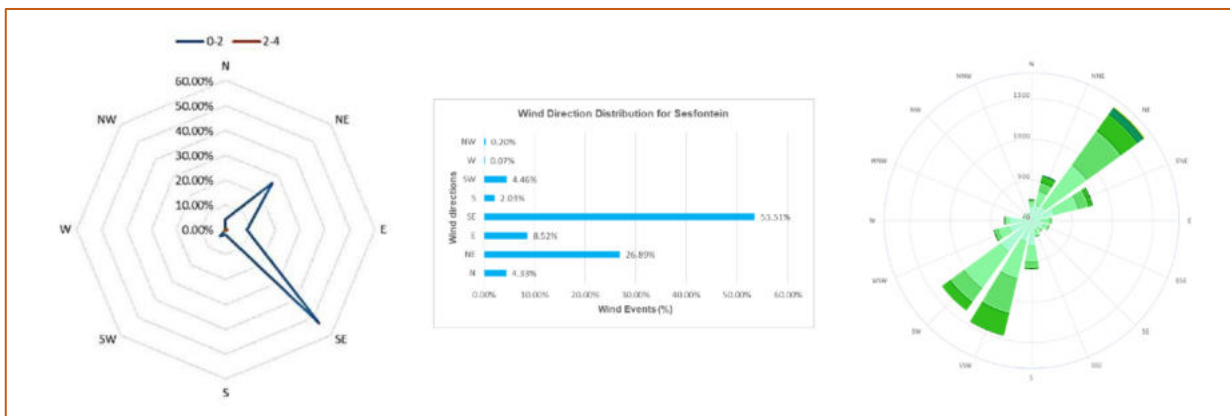


Figure 8: Shows wind rose and speed chart for Sesfontein (source: Meteorological Services, 2024)

According to the data recorded by the national Meteorological Services between 2015 and 2023, the average wind speed is 1.34km/h with a maximum of 3km/h recorded in April 2015, followed by 2km/hr in the months of January, April and May and then between 0 and 1.9km/hr for the rest of the months throughout the year. A wind speed distribution chart was created

for the area as shown in Figure 2-8 which indicates that 97.70% of the wind speed events are between 0 and 2km/hr and the rest of the events at 2.30% are between 2 and 4km/hr.

Vegetation checklists for the Hoanib River catchment area have been compiled by Maggs et al., (1994, 1998) and the ethnobotany of the region has also been reported (Malan & Owen-Smith, 1974; Sullivan, 1998). In addition, the vegetation has been previously mapped by Giess (1971), Viljoen (1980) and Becker & Jurgens (2000). Becker & Jurgens (2000) reported a vegetation gradient from east to west in Kaokoland with mixed *Colophospermum mopane* vegetation type dominating the area that corresponds to the 100–350mm rainfall zone (Figure 9). The drier areas (50–100mm rainfall zone) are dominated by larger stands of *Stipagrostis uniplumis* forming permanent grasslands.

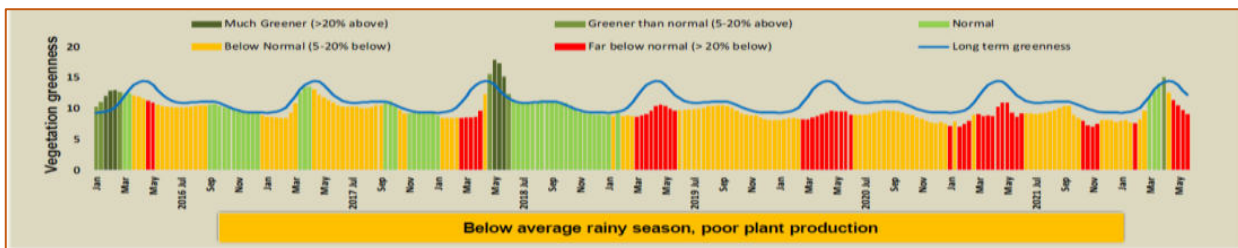


Figure 9: Shows a general composition of vegetation species types consisting mainly of annual grass and shrubs *Euphorbia damarana* shrubland, and in semi-mountainous gravel plains

A summary of the number of species of trees and shrubs, grasses and forbs found in in the Hoanib River catchment consists of more than seventy-five species of woody trees and shrubs. The most dominant tree and shrub species throughout the catchment was *C. mopane*, *Zygophyllum simplex* spp. (Figure 10). In the higher rainfall sections of the eastern catchment, *C. mopane*, *Terminalia prunioides* and *Combretum apiculatum* were dominant. In the drier areas, *C. mopane* formed stands with both *T. prunioides* and *Acacia tortilis*.



Figure 10: Shows a general composition of vegetation species types consisting mainly of forest type tree species and some annual grass and forbs

The species found to carry leaf during the dry season were *A. erioloba*, *Boscia albitrunca*, *B. foetida*, *Faidherbia albida*, *Maerua parvifolia*, *M. schinzii* and *Salvadora persica*. The only perennial grasses observed in the catchment were *S. hochstetteriana*, *S. namaquensis*, and *S. uniplumis*.

3.1.2 Geology, Geohydrology, Topography and Soils

According to Lohe et al, (2021), the geology of the area is characterized by granitic and gneissic rock types that cover vast areas in the Kaokoveld (**Figure 11**). The thin-skinned thrusts and associated short-wavelength (2-3 km) folds were subsequently deformed by long-wavelength (20-30 km) thick-skinned structures of oblique NNW-SSE trend.

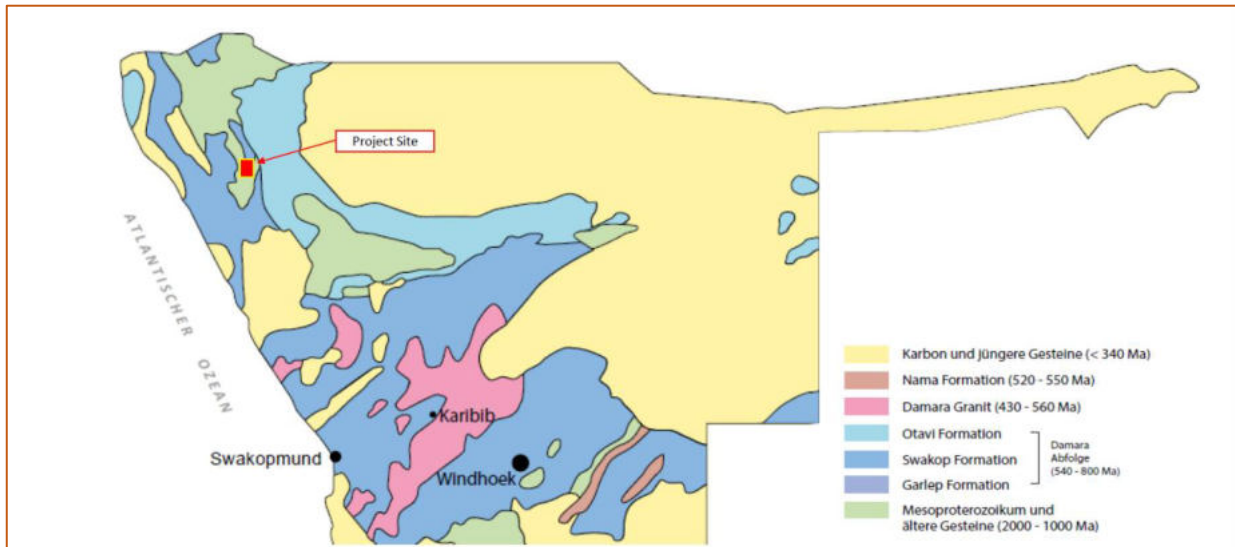


Figure 11: Simplified geology of Simplified geological map of Namibia. Modified after Clifford (2008)

Major structures include the Sesfontein Thrust and the associated Warmquelle footwall syncline (**Figure 12**), and Kamanjab basement anticline and its autochthonous cover of Nosib Group arkosic terrestrial clastics. Structural relief in the area owes much to the opposing plunges of the first-order structures, Kamanjab anticline and Warmquelle syncline (Guj, 1970; Hedberg, 1979).



Figure 12: Shows Bedrock geology of the upper Hoanib River area

The site is relatively flat which is suitable for erecting structures without the need to level the surface. Therefore, the topography is suitable for the project and its associated structures. The elevation of the site ranges between 573 and 611 meters above sea level (masl), and is characterized by the Central-Western Plains landscape stretches back from the coast. Etendeka which means ‘layered’ or ‘stacked’ in Otjiherero, describes much of this landscape, which consists of flat-topped hills and underlain by volcanic rocks of the Etendeka Group lavas and some sedimentary rocks of the Karoo Super-group (Mendelsohn et al, 2002).

The site is overlain by petric calcisols soil, this soil type have a solid layer at a shallow depth that remains hard even when wet (“in indurated’ layer). Calcisols are found in depressions or other low-lying areas of the landscape, and typically contain accumulations of calcium carbonate, often in cemented form known as calcrete (Mendelsohn et al., 2002).

3.1.3 Geohydrology (Surface Water and Groundwater)

In terms of surface water, the site is bordered to the west by the Otjitaimo ephemeral river located about 3km away and to the west (Sesfontein Settlement side), there is another ephemeral river (Noideb) located about 2km away from the eastern boundary of the site as well as the Hoanib River to the southeast (**Figure 13**).

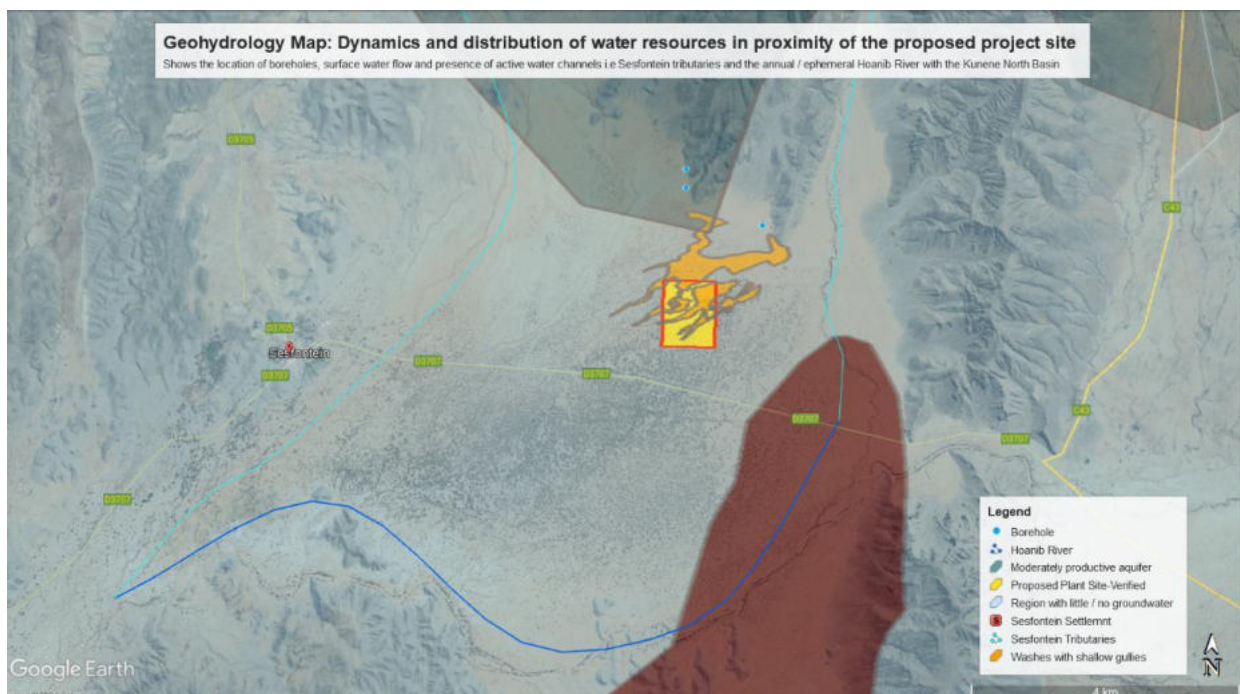


Figure 13: Shows that the site overlies rock bodies with little groundwater potential, while porous aquifers are situated southwest of the site in the Hoanib River.

In terms of groundwater, Sesfontein area is found in the Northern Namib and Kaokoveld groundwater basin which generally has a low groundwater potential. The area with aquifer potential, more or less reflects the rainfall distribution, decreasing westwards. Knowledge of the aquifers in the area is sparse, due to the small number of boreholes and limited groundwater investigations. The area is well known for its numerous springs that provide water for wildlife and villages. Small-scale irrigation schemes are also in operation at some of the higher yielding springs, like Warmquelle, Kaoko-Otavi and Sesfontein. There are also a number of thermal springs in the area. (Lohe et al., 2021).

The water supply scheme at Sesfontein owes its origin and name to the six fountains along the contact zone between dolomites of the Tsumeb Subgroup aquifers and the underlying less permeable phyllites of the Mulden Group (both of the Damara Sequence). The most recent rocks are calcretes as well as alluvial deposits occurring locally in the ephemeral river beds.

3.1.3 Terrestrial Ecology and Sensitivity

Namibia's vegetation and biomes are classified into five major types, shown in (Figure 14). These are, the Namib Desert, Nama Karoo, Succulent Karoo and the Trees and Shrub savannah. The proposed project area fall mainly within the Desert biome and thus the fauna and flora key receptors of environmental impact particularly in case of trampling and vehicle tracks, potential poaching and ground contamination resulting from the project activities.

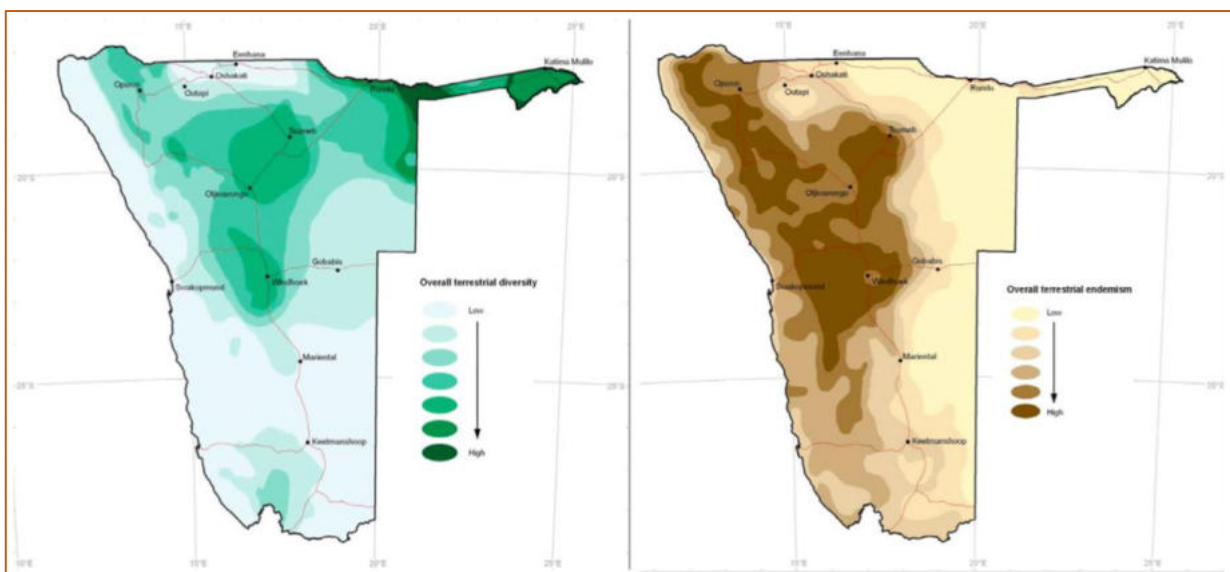


Figure 14: Shows a comparison of overall terrestrial species diversity (green) against overall endemism (brown)

Overall terrestrial diversity of plants and animals is highest in the north-eastern parts of Namibia because of the higher rainfall and presence of wetlands and forest habitats that are not found elsewhere in the country. Many species in the north are also more tropical, with ranges that extend into neighboring countries to the north and north-east. Species richness is highest in Namibia's mesic wetlands and woodlands in the vertebrate classes particularly (Barnard 1998).

Every vegetation type supports at least one, more often several endemic or protected species. As a result of this, as well as the low recovery potential of the vegetation, there are no vegetation types of low sensitivity. Classified as highly sensitive are the granite and dolerite outcrop shrublands and their associated vegetation types in the vicinity, the camel thorn shrubland in the north-east of the study area, the tamarisk shrubland of the Erongo mountain landscape.

In birds, the greatest diversity of southern African endemics is centered on the arid savannah and Karoo biomes and extends into the escarpment (Brown et al. 1998). Highland areas of the country, including Waterberg, Khomas Hochland, Karas Mountains, Brandberg,

inselbergs in the Sperrgebiet and the Karstveld are particularly important for many endemic plants (Mendelsohn et al. 2002).

A high degree of endemism has developed along the Namibian escarpment, and the conservancy provides habitat to many of the country’s near-endemic birds. These include bare-cheeked babbler, Benguela long-billed lark, Carp’s tit, Damara hornbill, Monteiro’s hornbill, Hartlaub’s francolin, rosy-faced lovebird, Rüppell’s parrot, Rüppell’s korhaan, violet woodhoopoe, white-tailed shrike, Herero chat and rock-runner.

Mopane savannah dominates some of the eastern parts of the conservancy, interspersed with stands of acacias (Griffin 1998). The rugged mountains covering much of the conservancy support a diversity of interesting plants, including *Commiphora* and *Euphorbia* species, as well as the distinctive kobas. The Hoanib River is lined by extensive salvadora thickets and huge camel thorn and Ana trees. It has been estimated that well over 4,000 Ana trees grow along the river. The seed pods are an important source of food for livestock and wildlife, with elephants being particularly fond of them.

Since the establishment of conservancies, **wildlife** numbers in communal areas have rebounded from historic lows prior to independence Sesfontein is home to a diversity of large game, including elephant, giraffe, black rhino, Hartmann’s mountain zebra, kudu, gemsbok, springbok, duiker, steenbok, klipspringer and ostrich. Large carnivores include lion, leopard, cheetah and caracal, spotted and brown hyaena and jackal (**Figure 15**).

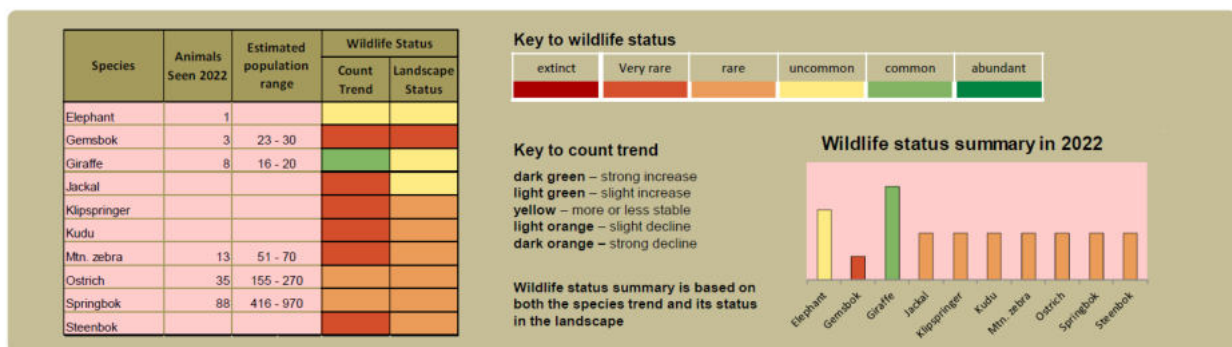


Figure 15: Shows a summary of wildlife species observed during the annual game-count survey of 2022

3.1.4 Protected Terrestrial Areas

Ecologically, the project area falls within the Sesfontein Conservancy, formed as a result of ground-breaking legislation passed in the mid-nineties laid the foundation for a new approach to the sustainable use of natural resources. By forming a conservancy, people in communal areas can now actively manage and generate benefits from wildlife and other resources in their area, encouraging wildlife recoveries and environmental restoration.

While a conservancy is a natural resource management structure (**Figure 16**), it is defined by social ties. The Sesfontein Conservancy covers close to 2,500 square kilometres and embraces about as many people. The conservancy is named after the settlement of Sesfontein, although the sprawling village area itself is excluded from the

conservancy. Named after six natural springs, Sesfontein has always been a focal point for settlement, because of its abundant water supply and favourable location.

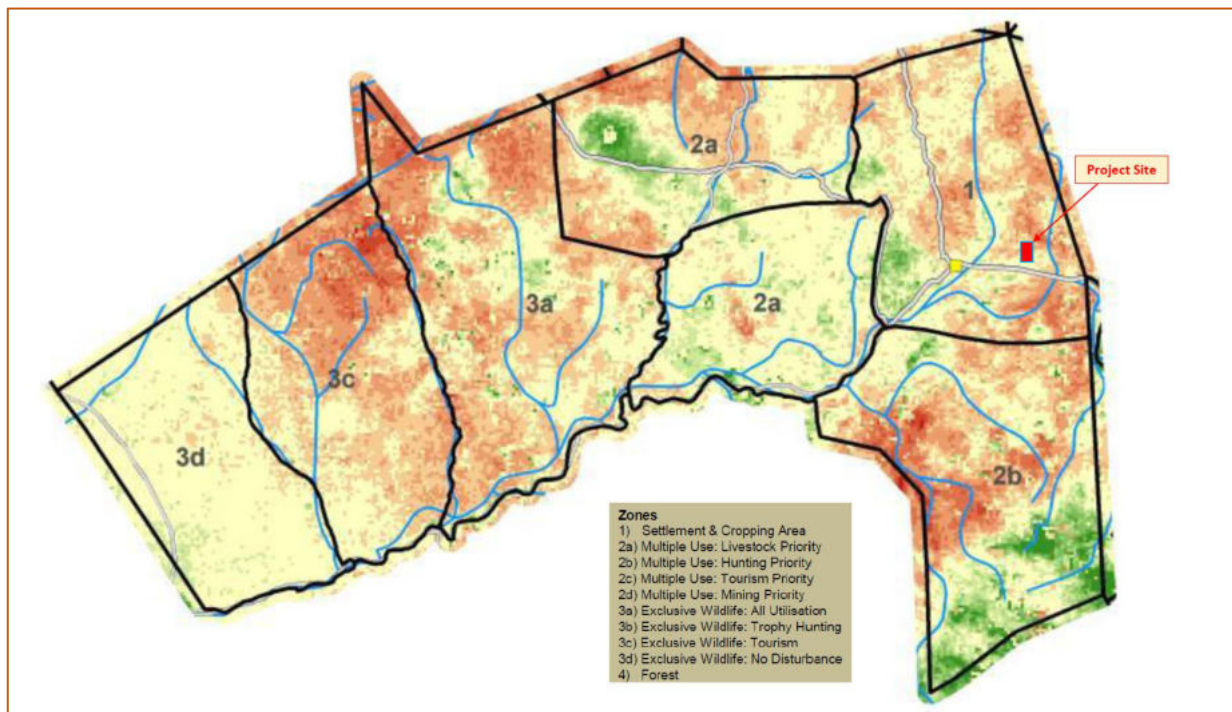


Figure 16: Shows the demarcated management zones of the Sesfontein conservancy and appropriate land-use

3.2 SOCIO-ECONOMICAL ENVIRONMENT

3.2.1 Demographic Profile

Sesfontein lies in the Kunene Region, where Otjiherero and Khoekhoegowab are spoken by around 42 and 36 percent of the population, respectively. The two language groups together make up about 20 percent of the national population. Farming and income from employment make up relatively equal portions of livelihoods in the region and account for over 70 percent of overall income.

The livelihoods of most residents are based on farming, consisting of a mix of livestock herding, supplemented by small scale crop cultivation. The springs at Sesfontein have supplied water for a variety of crops in the past (Figure 17), including wheat and tobacco, but prolonged droughts have often inhibited cultivation. Income from wages, pensions and remittances provides additional income to most residents. The Palmwag Tourism Concession is a popular travel destination and generates significant income for Sesfontein and neighbouring Anabeb and Torra Conservancies through a benefit sharing agreement with Wilderness Safaris. Fort Sesfontein Lodge offers excellent tourism accommodation and generates conservancy income, as well as providing employment.

The Sesfontein Fig Tree and Sesfontein Kanamub Mountain Campsites are run by the community and offer beautiful camping facilities beneath huge fig trees in Sesfontein and at a stunning site along the road to Puros, respectively.

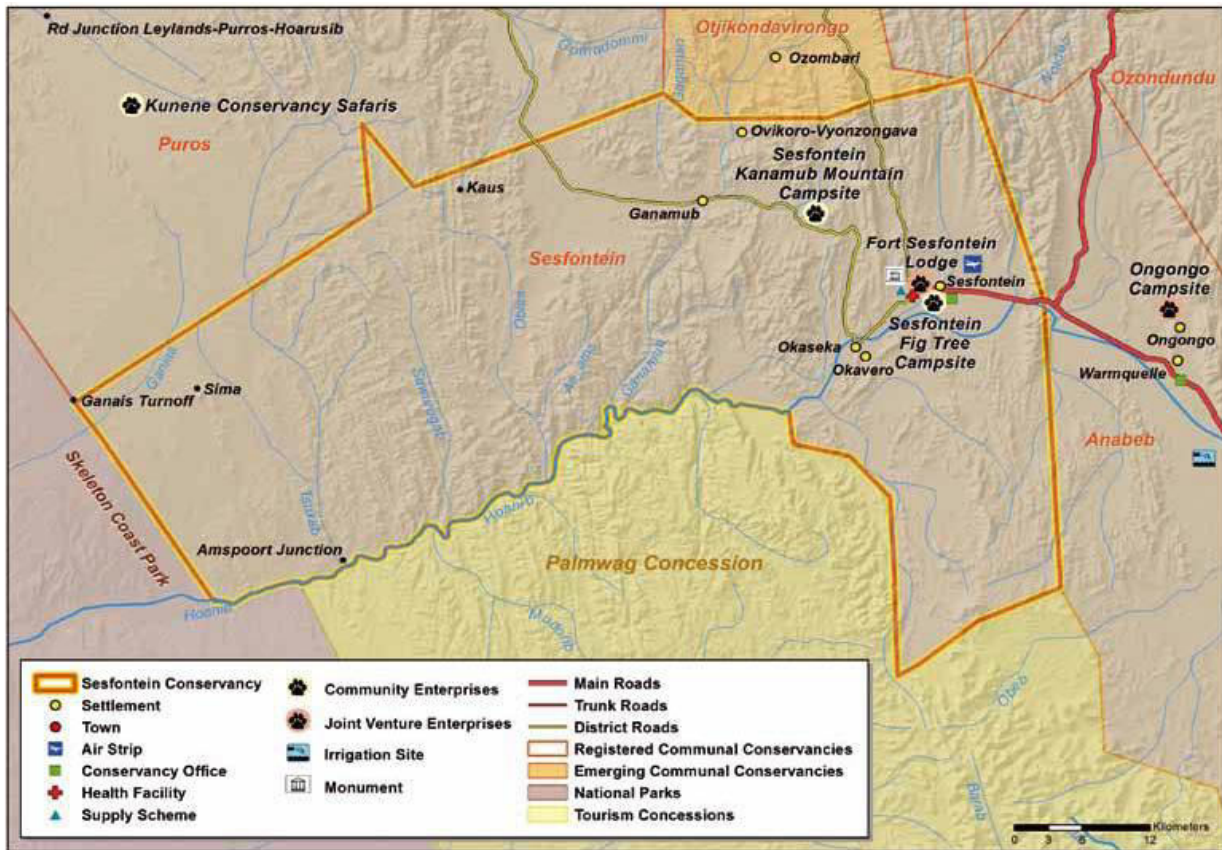


Figure 17: Shows the locations of different economic activities within the Sesfontein conservancy boundaries

Development was sorely neglected in communal areas during German colonial rule and the South African administration of Namibia prior to independence, an imbalance still evident today. Sesfontein is the largest settlement in the conservancy, yet provides a limited range of facilities and services. A few small shops offer a basic selection of goods and a combined school provides some access to education.

Sesfontein has a police station, as well as the northernmost petrol station in the north-west. A clinic offers basic health services, while the nearest hospital is in the regional capital of Opuwo, around 135 kilometres to the north. People in Sesfontein have reasonable access to water, but beyond the settlement water availability is a limiting factor. Boreholes supply groundwater to most residents, but often yield only limited supplies and are costly to drill and maintain.

Good access for visitors is provided by the western fork of the C43 gravel road between Palmwag and Opuwo. Sesfontein is the tourism gateway to western Kaoko and destinations such as the Hoaruisib River around Puros, and the Marientfluss and Hartmann Valleys. The scenic D3707 leading from Sesfontein to Puros, and from there on to Orupembe, requires four-wheel drive. A number of unmarked four wheel-drive tracks also allow visitors to explore the conservancy along the Hoanib River and adjacent areas, but these should only be explored in the company of qualified guides.

3.2.2 Heritage and Culture Profile

In Namibia, archaeological resources are often vulnerable to developmental and mining impacts. Typical sites do not only include those found in the mountains, hills and outcrops but also those generally found in the flat areas (Namib Desert) and or in riverbeds. Others includes surface scatters of stone artefacts, rock shelters with evidence of occupation, including rock art, graves, stone features such as hunting blinds and huts, and more recent site such as colonial battlefields, road-works and historical mines.

Some of these site types are might be obvious to some observer, such as rock art or historical mines. Others are quite ambiguous and might appear less significant than they are, such as pre-colonial stone features. This means that it is very difficult for mining projects to avoid damage to archaeological heritage sites if they have not been located, identified and made known during EIA process.

However, given the nature, scope and scale of the proposed activity and particularly that it entails minimum use mechanical equipment an archaeological specialist study was deemed not necessary although highly recommended for the next phase of the mine development projects. Critically, the proponent is cautioned to at all time strictly adhere with the search and find procedure in accordance with the stipulations of the Namibian National Heritage Act (No. 27 of 2004) in the highly unlikely event that artifacts are found in the PROJECT and construction and operation area.

In the light of the evidence found during the field assessment and other desktop review of previous field surveys, it can be concluded that should a detailed heritage assessment be necessary and conducted it may yield the following results:

- Pre-Quaternary palaeontological evidence in insignificant quantity and mainly in the vicinity of Palaeozoic shale outcrops near Omaruru or Karibib, Aus and Lüderitz.
- Generalized occurrence of mid- to late Pleistocene to early Holocene artefact scatters primarily between the 26° and 27° South latitude.
- Moderately high density of late Holocene to recent pre-colonial archaeological sites throughout the extent of the power-line route, including burial cairns and remains of nomadic pastoral encampments, as well as possibly of some rock art sites and rock shelter sites containing sealed occupation debris
- Generalized occurrence of colonial era sites, including farm settlements, battlefield sites and related remains.

Therefore, it remains necessary that in the absence of extensive heritage and culture studies in the region there remains a possibility of encountering numerous undeclared artefacts / sites of heritage importance. A search and find procedure must be strictly followed in accordance with the stipulations of the Namibian National Heritage Act in the highly unlikely event that artefacts are found in the sand mining area.

4. APPROACH TO EIA PROCESS AND PUBLIC PARTICIPATION

This chapter presents the approach to the Environmental Scoping Assessment process, for the proposed Beauna Mining's construction and operation activities and gives particular attention to the legal context and guidelines applicable to this assessment. The assessment approach and the steps in the Public Participation component of this scoping report were undertaken in accordance with Regulations 29 and 30 of Government Notice No. 30 of 2012.

This section regulates and prescribes the content of the Scoping Report and specifies the type of supporting information that accompany the submission of the E application to the Competent Authority. Overall, this section highlights information including the approach to stakeholder engagement, identification of issues, overview of relevant legislation, and key principles and guidelines that provide the context for this scoping assessment process. Hence, in a nutshell, the purpose of the environmental assessment is to:

- Address issues that have been identified through the Scoping Process;
- Assess alternatives to the proposed activity in a comparative manner;
- Assess all identified impacts and determine the significance of each impact; and
- Recommend actions to avoid/mitigate negative impacts and enhance benefits.

4.1 OVERVIEW OF APPROACH ADPTED FOR COMPILING THE SCOPING AND EMP REPORTS

The objectives of the environmental scoping assessment are noted in Section 1 of this Report. Section 6 of this Scoping Report includes a summary of the findings, the overall conclusions and the recommendations. The Scoping Report was made available for a 30-day I&AP and authority review period, as outlined in the EMA Regulations of 2012. Although adverts were put in local newspapers **Confidante** newspaper on **23rd – 29th February 2024** and **08th – 14th March 2024**, and then in **The Villager** newspaper on the **26th February 2024** and **01st March 2024** in order to notify and inform the public of the proposed projects and invite I&APs to register.

As previously noted, the Scoping Report includes an Environmental Management Plan (EMP, **Appendix B**). The EMP is based broadly on global environmental management principles and embodies an approach of continual improvement and mitigation actions.

These are drawn primarily based on the identified potential impacts for both the construction and operational phases of Beauna Mining's proposed operations. If the project components are decommissioned or re-developed, this will need to be done in accordance with the relevant environmental standards and clean-up / remediation requirements applicable at the time.

4.2 LEGAL CONTEXT FOR THIS EIA

In accordance with the provisions of the Environmental Impact Assessment (EIA) Regulations No. 30 of 2012 gazette and the Environmental Management Act, (EMA), 2007, (Act No. 7 of 2007), the activity to be undertaken by Beauna Mining may not be undertaken without an Environmental Clearance Certificate.

4.3 LEGISLATION AND GUIDELINES PERTINENT TO THIS ENVIRONMENTAL ASSESSMENT

As the main source of legislation, the Namibian constitution makes provision for the creation and enforcement of applicable legislation. In this context and in accordance with its constitution, Namibia has passed numerous laws (those of relevant to this project are listed in Table 2) intended to protect the natural environment and to mitigate adverse environmental impacts.

Namibia's policies provide the framework to the applicable legislation. Whilst policies do not often carry the same legal recognition as official statutes, policies can be and are used in providing support to legal interpretation when deciding cases. Below are several of the key legislations applicable to the governance of certain component / aspects of the proposed operation activity. Key acts and policies currently in force include:

- Namibia's Environmental Assessment (EIA) Policy for Sustainable Development and Environmental Conservation (1995)
- Environmental Management Act (No. 7 of 2007);
- Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012)
- Namibia Agriculture Policy of 2015
- Namibia Vision 2030, and other national development plan e.g. Harambee Prosperity Plan
- Social Security Act, 1994 (Act No. 34 of 1994) and the Affirmative Action (Employment) Act, 1998 (Act No. 29 of 1998)

4.3.1 Environmental Management Act No. 7 of 2007

The environmental management act No.7 of 2007 aims to promote the sustainable use of natural resources and provides the framework for the environmental and social impact assessment, demands precaution and mitigation of activities that may have negative impacts on the environment and provision for incidental matters. Furthermore, the act provides a list of activities that may not be undertaken without an environmental clearance certificate.

The purpose of the Environmental Management Act is:

- a) to ensure that people carefully consider the impact of developmental activities on the environment and in good time
- b) to ensure that all interested or affected people have a chance to participate in environmental assessments

- c) To ensure that the findings of environmental assessments are considered before any decisions are made about activities which might affect the environment see **Figure 18**.

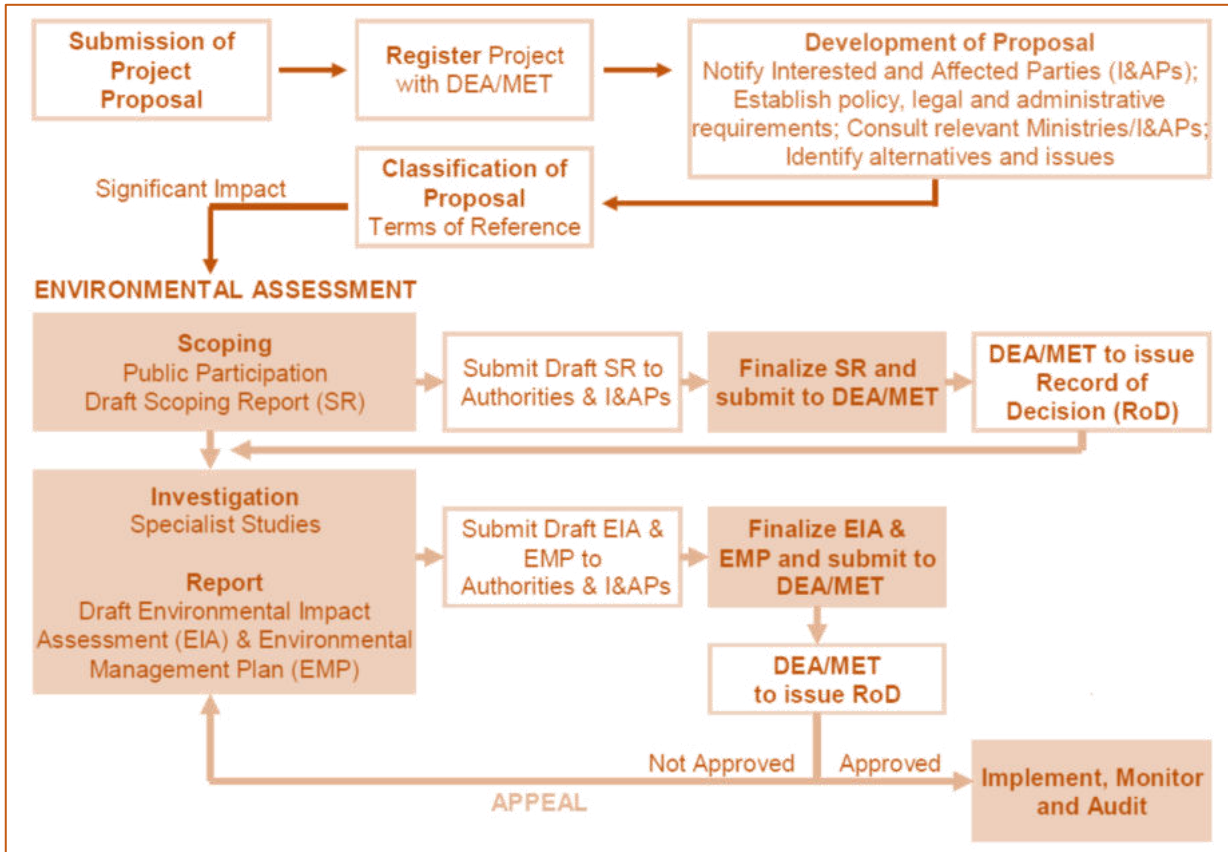


Figure 18: Illustration of the environmental assessment process in Namibia (Source: Risk Based Solution)

4.3.2 Environmental Assessment Policy (1995)

The Environmental Assessment Policy for Sustainable development and Environmental Conservation emphasize the importance of environmental assessments as a key tool towards implementing integrated environmental management. Sets an obligation to Namibians to prioritize the protection of ecosystems and related ecological.

The policy subjects all developments to environmental assessment and provides guideline for the Environmental Assessment. The policy advocates that Environmental Assessment take due consideration of all potential impacts and processes mitigations measures should be incorporated in the project design and planning stages (as early as possible).

4.3.3 Minerals Act

This Act No. 33 of 1992 provides a legal framework for regulating and governing all activities that explicitly entails the processing, construction and operation and mining of minerals within the boundaries of Namibia and the Ministry of Mine and Energy is the competent authority in this regard.

It also makes explicit reference to the protection and conservation of the natural environment by requiring for the development of an environmental impact assessment and management plan in which measures to avoid and or mitigate potential impacts relating to minerals development activities are clearly considered.

4.3.4 Other Legal Requirements and relevance to the proposed activity

In addition to the EMA and the Environmental Assessment Policy, there exist other regulatory frameworks that MDL must comply with. This is due to the supporting infrastructure that are needed to compliment the proposed logistics hub. As such, MDL will be required to obtain additional specific permits for the supporting infrastructure as listed in **table 4** below. The process of obtaining the additional permits can be undertaken concurrently to the EIA process. Furthermore, the proponent has the responsibility to ensure that the project activities conform to all other relevant legal documents and guidelines as listed in **Table 8** below).

Table 4: Other relevant legislation and applicability thereof

Legislation	Relevance
Labour Act, 1992, (Act No. 6 of 1992) and Regulations Related to Health and Safety of Employees	<ul style="list-style-type: none"> • Labour matters, rights and duties of employees. • Health and Safety of Employees Construction safety; • Electrical safety; Machinery safety; • Hazardous substances; Physical hazards and general provisions;
Social Security Act, 1994 (Act No. 34 of 1994) and the Affirmative Action (Employment) Act, 1998 (Act No. 29 of 1998)	<ul style="list-style-type: none"> • Establishment of the Social Security Commission • Administration of a pension and incidental matters fund – affirmative employment opportunities
The Forest Act	<ul style="list-style-type: none"> • Declaration of protected areas in terms of soils and water resources • Proclamation of protected species of plants and the conditions under which these plants can be disturbed, conserved, or cultivated.
Nature Conservation Amendment Act	<ul style="list-style-type: none"> • Declaration of protected areas and protected species.
National Heritage Act	<ul style="list-style-type: none"> • Protection and conservation of places and objectives of significance, as all archaeological and paleontological objects belong to the state
Hazardous Substances Ordinance No. 14 of 1974	<ul style="list-style-type: none"> • This ordinance gives provision to control the handling of hazardous substance in all circumstances, such as manufacturing, imports and exporting of these to ensure human and environmental safety.
Soil Conservation Act No. 76 of 1969	<ul style="list-style-type: none"> • This act promotes the conservation of soil, prevention of soil erosion.
Public Health Act No. 36 of 1919	<ul style="list-style-type: none"> • The Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him/her or of which he/she is in charge of any nuisance or other condition liable to be injurious or dangerous to health.

4.3.5 Precautionary and Polluter Pays Principles

The Precautionary Principle is worldwide accepted when there is a lack of sufficient knowledge and information about proposed development possible threats to the environment. Hence if the anticipated impacts are greater, then precautionary approach is applied.

Equally, the Polluter Pays Principle ensures that the proponent takes responsibility of their actions. Hence in cases of pollution, the proponent bears the full responsibility and cost to clean up the environment.

4.4 PRINCIPLES FOR PUBLIC PARTICIPATION / CONSULTATION

The PPP for this Scoping Process was driven by a stakeholder engagement process that includes inputs from authorities, I&APs and the project proponent. In respect to provisions of the EIA Regulations, “Public Consultation” means a process referred to in regulation 21, in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters. This stems from the requirement that people have a right to be informed about potential decisions that may affect them and that they must be afforded an opportunity to influence those decisions. Effective public participation also improves the ability of the Competent Authority (CA) to make informed decisions and results in improved decision-making as the view of all parties are considered.

Contrary, it is important to recognize and highlight two key aspects of public participation which must be considered at the outset:

- There are practical and financial limitations to the involvement of all individuals within a PPP. Hence, public participation aims to generate issues that are representative of societal sectors, not each individual. Consequently, the PPP is designed to be inclusive of a broad range of sectors relevant to the proposed activity.
- The PPP will aim to raise a diversity of perspectives and will not be designed to force consensus amongst I&APs. Certainly, diversity of opinion rather than consensus building is likely to enrich ultimate decision-making. Therefore, where possible, the PPP will aim to obtain an indication of trade-offs that all stakeholders (i.e. I&APs, technical specialists, the authorities and the development proponent) are willing to accept with regard to the ecological sustainability, social equity and economic growth associated with the project.

4.5 PUBLIC PARTICIPATION PROCESS

The key steps and or approach adopted for this particular Scoping assessment has been confirmed with the DEA through the registration of the proposed activity / operations on their Online EA system.

All advertisements, notification letters and emails etc. served to notify the public and organs of state, on both the call for registration as I&APs and of the availability of the Scoping and EMP reports for an opportunity to comment or provide input on the reports. Although adverts were put in local newspapers **Confidente** newspaper on **23rd – 29th February 2024** and **08th – 14th March 2024**, and then in **The Villager** newspaper on the **26th February 2024** and **01st March 2024** in order to notify and inform the public of the proposed projects and invite I&APs to register

The correspondence sent to or received from I&APs and other competent authorities during the Scoping Phase were incorporated into the stakeholder engagement report appended to this report (**Appendix A**).

4.6 AUTHORITY CONSULTATION DURING THE EIA PHASE

Authority consultation is integrated into the PPP, with additional one-on-one meetings held with the lead authorities, where necessary. A pre-application meeting was scheduled with the relevant competent authorities prior to the Lock-down, however were later cancelled. It is proposed that the Competent Authority (DEA) as well as other lead authorities be consulted as necessary and at various stages during the application review process of the DEA. During the Scoping phase, the following authorities were identified and consulted (see **Appendix C**) for the purpose of consultation:

4.7 APPROACH TO IMPACT ASSESSMENT AND SPECIALIST STUDIES

Potential environmental impacts were identified through both desktop literature review and consultation with I&APs, regulatory authorities, specialist and Enviro-Leap Consulting. In case of social impacts, the assessment focused on third parties only (third parties include members of the public and other local and regional institutions) and did not assess health and safety impacts on workers because the assumption was made that these aspects are separately regulated by health and safety legislation, policies and standards.

The impacts are discussed under issue headings in this section. The discussion and impact assessment for each sub-section covers the construction, operational, decommissioning and closure phases where relevant. This is indicated in the table at the beginning of each sub-section. Included in the table is a list of project activities/infrastructure that could cause the potential impact per farming phase. The activities/infrastructure that are summarized in this chapter, link to the description of the proposed project (see Section 5 of the EIA report).

Both the criteria used to assess the impacts and the method of determining the significance of the impacts is outlined in **Table 5**. This method complies with the method provided in the Namibian EIA Policy document and the draft EIA regulations. **Part A** provides the approach for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from **Part B** and **C**. The interpretation of the impact significance is given in **Part D**. Both mitigated and unmitigated scenarios are considered for each impact.

Table 5: Criteria for Assessing Impacts

PART A: DEFINITION AND CRITERIA		
Definition of SIGNIFICANCE	Significance = consequence probability	
Definition of CONSEQUENCE	Consequence is a function of severity, spatial extent and duration	
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action. Irreversible loss of resources.
	M	Moderate/measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints. Noticeable loss of resources.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/will remain in the current range. Recommended level will never be violated. Sporadic complaints. Limited loss of resources.
	L+	Minor improvement. Change not measurable/will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favorable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short-term
	M	Reversible overtime. Life of the project. Medium-term
	H	Permanent beyond closure – Long-term.
Criteria for ranking the SPATIAL SCALE of Impacts	L	Localized-Within the site boundary.
	M	Fairly widespread-Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/national

PART B: DETERMINING CONSEQUENCE

SEVERITY = L					
DURATION	Long-term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short-term	L	Low	Low	Medium

SEVERITY = M					
DURATION	Long-term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short-term	L	Low	Medium	Medium

SEVERITY = H					
DURATION	Long-term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short-term	L	Medium	Medium	High
			L	M	H
			Localized Within site boundary Site	Fairly widespread Beyond site boundary	Widespread Far beyond site boundary
SPATIAL SCALE					

PART C: DETERMINING SIGNIFICANCE

PROBABILITY (of exposure to impacts)	Definite/Continuous	H	Medium	Medium	High
	Possible/frequent	M	Medium	Medium	High
	Unlikely/seldom	L	Low	Low	Medium
			L	M	H
CONSEQUENCE					

PART D: INTERPRETATION OF SIGNIFICANCE

Significance	Decision guideline
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

*H = high, M = medium and L = low and + denotes a positive impact.

This section outlines the assessment methodology and legal context for specialist studies, as recommended by the DEA 2006 Guideline on Assessment of Impacts. In addition to the above, the impact assessment methodology includes the following aspects:

Spatial extent – The size of the area that will be affected by the impact/risk:

- Site specific;
- Local (<10 km from site);
- Regional (<100 km of site);
- National or International (e.g. Greenhouse Gas emissions or migrant birds).

Consequence – The anticipated consequence of the risk/impact:

- Extreme (extreme alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they permanently cease);
- Severe (severe alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Substantial (substantial alteration of natural systems, patterns or processes, i.e. where environmental functions and processes are altered such that they temporarily or permanently cease);
- Moderate (notable alteration of natural systems, patterns or processes, i.e. where the environment continues to function but in a modified manner); or
- Slight (negligible alteration of natural systems, patterns or processes, i.e. where no natural systems/environmental functions, patterns, or processes are affected).

Duration – The timeframe during which the impact/risk will be experienced:

- Short term (less than 1 year);
- Medium term (1 to 10 years);
- Long term (the impact will cease after the operational life of the activity (i.e. the impact or risk will last for the project duration)); or
- Permanent (mitigation will not occur in such a way or in such a time span that the impact can be considered transient (i.e. the impact will last beyond the project decommissioning)).

Probability – The probability of the impact/risk occurring:

- Very likely or Likely;
- Unlikely or Very unlikely; and
- Extremely unlikely

5. ASSESSMENT OF ALTERNATIVES AND IMPACTS

5.1 ASSESSMENT OF IMPACTS AND MITIGATION

This chapter discusses the alternatives, as well as the selection process of the preferred alternatives that have been considered and assessed as part of the Scoping Phase. The 2012 EIA Regulations (GG4878) define “alternatives”, in relation to a proposed activity, “as different means of meeting the general purpose and requirements of the activity, which may include alternatives to the:

- property on which or location where the activity is proposed to be undertaken;
- type of activity to be undertaken;
- design or layout of the activity;
- technology to be used in the activity; or
- operational aspects of the activity; and
- Includes the option of not implementing the activity”.

The Scoping Report therefore provided a full description of the process followed to reach the proposed preferred activity, site and location within the site. It further includes the following as a minimum:

- The consideration of the no-go alternative as a baseline scenario;
- A comparison of the reasonable and feasible alternatives; and
- Providing a methodology for the elimination of an alternative.

5.1.1 NO-GO ALTERNATIVE

The no-go alternative assumes that the proposed project will not go ahead i.e. the proposed Beauna Mining’s proposed mineral processing does not realize. This alternative entails that the operations would not drive any environmental change and result in no additional environmental impacts on the proposed project site.

It favors the *status quo* or baseline against which other alternatives are compared and will be considered throughout the report. However, the likely negative environmental impacts of other current and future user that may still happen in the absence of the proposed activities includes: Natural dust and generation of particulate matter during windy event particularly resulting from other regional economic activities such as construction, mining and tourism, pollution and environmental degradation associated with current land use along and around the proposed project route and sites.

Therefore, in terms of the “No-go Alternative”, potential economic gains that may never be realized if the proposed project activities do not go-ahead include: loss in income for both the local community and the partnering investor, unemployment and the loss of socio-economic benefits derived from current and future export and import trading opportunities. Most importantly, is the reduced regional integration in terms of trade and investment, loss of direct and indirect contracts and employment opportunities, export earnings, foreign direct investments and various taxes payable to the Government.

5.1.2 CONCLUDING STATEMENT ON ALTERNATIVES

Namibia's industrial ambition is articulated in Vision 2030, which stipulates that the country should be an industrialized nation with a high income by the year 2030. In terms of the production and export structure, Namibia aspires to build the bridge from producing and exporting predominantly primary commodities to offering value added and service-orientated products. The production and export structure would also be more diverse, enabling the economy to better withstand exogenous shocks.

Despite the limited capacity to process minerals locally, Namibia is considered the preferred nation of choice in terms of mining given its vast unexploited distribution of mineral resources. Alternative processing techniques and use of equipment is recommended as far as enhancing environmental safety is concerned.

Hence, the proposed activity responds to Namibia's strategic vision 2030 and the NDP5 of creating a conducive environment within which its citizens prosper and contribute to the national development goals by processing its minerals locally and thus creating employment opportunities. Overall, this activity contributes to the nation's efforts of elevating poverty amongst the rural citizens.

Consideration of biophysical conditions i.e. climate (wind and rain), geology (elevation, soils and topography), and geohydrology in respect to potential implications on the proposed development concluded the following:

1. **Climate – rainfall:** The area experiences good rains between December and March with an average high of 120mm around February. Therefore, any intense activities that may be undertaken between these months will be impacted by surface runoffs. **Similarly, intensive project activities where potential contaminants such as fuels, oils, grease, wastewater,** and processing waste will be handled onsite, and these can be washed into surface water bodies such as nearby rivers through surface runoffs and pollute the systems.

Recommendation: For the safety of the project structures and infrastructure, these should not be erected and installed on the southern part of the site as there are visible water pathways of rainwater following through this part of the site and may lead to the destruction of structures during these mild floods in the area and onsite.

2. **Climate – wind:** The predominant wind direction of the site area is to the northeast, which implies that any dust or emissions emanating or generated from the site or site activities will be travelling towards the north-eastern side of the site, thus, it would be felt by the receptors in that direction.

3. **Geology – rock formation:** The type of rocks underlying the project site are phyllite, schist and quartzite that on a high-level seem to be intact (without faults or fractures), thus, can be considered stable and safe to erect structures. However, before construction, this needs to be confirmed by a detailed Geotechnical Investigation to ascertain the ability to hold project structures and installing infrastructures.
4. **Geology – topography and soil type:** The site is relatively flat which is suitable for erecting structures without the need to level the surface. Therefore, the topography is suitable for the project and its associated structures.

The soils are clayey and susceptible to erosion and thus, unstable to stay in place to hold structures. Therefore, before erecting any structures, a Geotechnical investigation should be done for the site and make informed decisions on construction of project structures on a reliable foundation.

5. **Geohydrology – potential water contamination:** The rock units underlying the project site are intact/compacted (no faults or fractures). Regardless, caution will need to be taken when handling potential contaminants such as fuels, oils, grease, wastewater, processing waste, etc., onsite. If not properly handled and contained, these contaminants can be washed into surface water bodies such as nearby rivers through surface runoffs and pollute the groundwater systems onsite and even offsite in the vicinity.

In terms of water supply to the project from groundwater sources, the site is underlain by rock bodies with little groundwater potential, therefore, these aquifers may not sufficiently supply the project through boreholes as this would also impact the existing ecosystem (biodiversity) relying on the available groundwater.

Recommendation: The project developer (Beauna Mining) will need to source water for the project from the nearest bulk water supply, through NamWater, otherwise a specialist groundwater supply study (aquifer yield / capacity tests) must be undertaken. Also, to minimize the risk of water pollution from surface runoffs onsite, and given that the area receives good and sometimes heavy rains between November and March, intrusive activities such as trenching and drilling should only be carried out between March and October.

In case of social impacts, the assessment focused on third parties only (third parties include members of the public and other local and regional institutions) and did not assess health and safety impacts on workers because the assumption was made that these aspects are separately regulated by health and safety legislation, policies and standards.

The No-Action Alternative comparative assessment, suggests that environmental impacts of a future in which the proposed activities do not take place, may be good for the receiving environment because there will be no potential negative or positive environmental impacts associated with the proposed activities (mineral construction and operation).

5.2 ASSESSMENT OF IMPACTS AND MITIGATION

Mitigation measures to address the identified impacts are discussed in this section and included in more detail in the EMP report that is attached in **Appendix B**. In most cases (unless otherwise stated), these mitigation measures have been taken into account in the assessment of the significance of the mitigated impacts only

5.2.1 IMPACTS ON THE BIOPHYSICAL ENVIRONMENT

Potential impacts in respect to the Biophysical (**Table 10**) environment involves particularly the terrestrial environments and relate mainly to the mineral processing and mining activities in regard to sampling (drilling and or bulk –sampling).

Potential impacts in respect to the Biophysical environments (**Table 6 - 8**) involves, given that the proposed activity entails non-invasive and consumptive mining development activities but rather limited to processing presents mainly secondary potential impacts. Geological surveys and rock sampling, and desktop research creates opportunity for the project staff members to access otherwise reserved park areas and thus temptations for poaching and collection of natural resources. Details of the potential impacts are demonstrated in the following tables:

Critically, it cannot go without saying that dust one of the major negative impacts associated with this type of operation. The dust from ore dressing is mainly produced during the crushing and transportation of raw ore. Dust generated at raw ore stockpiles, powdered ore stockpiles, the feed inlets and discharge outlets of crushing equipment, and the receiving points of transfer belts, as well as the head and tail pulleys, is collected. Pulse bag-type dust collectors are installed to treat this dust. Additionally, setting up green isolation belts between the raw ore stockpile and the production area can effectively reduce the impact of dust from the raw ore stockpile on production. Similarly, establishing green isolation belts between the tailings storage facility and the production area can effectively mitigate the impact of dust from the tailings storage facility.

Table 6: Impact on the Biophysical Environment – site Access and land preparation

Impact Event	Disturbances of Terrestrial Biodiversity					
Description	The proposed processing facilities could have implications on the terrestrial ecology particularly during the construction and operation phases. However, careful site selection drastically eliminated the impacts as both site are to be located within a build-up environments, and on suitably zoned area. The use of on the major road and rail network further reduces potential implication on wildlife and livestock (road-kills).					
Nature	Impacts on the terrestrial environment as a result of the project could result from the following: <ul style="list-style-type: none"> • Land alteration, generally these kinds of development has a vegetation clearing aspect with several trees affected resulting habitat fragmentation • Secondary impacts such as wildlife poaching, and or displacement • Vehicle – animal (Wild / Livestock) collisions, where the road passes through farms and protected areas i.e. conservancies. 					
Phases: Phases during which the project has implications of accessing the project area are highlighted below; Significance assessment was carried out on the use of access tracks which presents a short-term risk.						
Construction Phase	Operational Phase		Decommissioning Phase		Post Closure	
<ul style="list-style-type: none"> • Land preparation and construction activities • Temporary lodging for construction staff 	<ul style="list-style-type: none"> • Accessing of Proposed development / project area for the construction activities • Upgrading of access tracks (e.g. grading) • Installation of support infrastructure 		<ul style="list-style-type: none"> • Construction rubbles and associated waste generation • Rehabilitation of tailing dams etc. 		N/A	
Severity	Taken together, the disturbances will have a minimum to medium severity given that limited number of vehicles will be used and no new access track will be created, these can be drastically minimized to very low with mitigation measures.					
Duration	The Significance of the potential impacts is medium given the project location and surrounding land-uses					
Spatial Scale	Low, localized if activities are restricted to the known pegmatite belts area within the project thus limiting potential impacts spatially					
Probability	Low to Medium, especially in respect to wildlife / livestock collision and poaching as project staff will be at all times accompanied by Game Guards					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L-M	L	L	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	H
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> • Strict compliance with the Forestry Act and Regulations in respect to vegetation clearing, Park Management guidelines and EMP is recommended in respect to managing incidental events; • Strict compliance with the Park Management guidelines and EMP is recommended in respect to managing incidental events; • Construction and operation activity must be limited to the pre-identified pegmatites belts within the project area • Unless necessary and agreed with the local authorities including conservancy management, no new access tracks shall be created and no lodging shall be allowed in sensitive zones 					

Table 7: Impact on the Biophysical Environment – dust and noise from borrowing and Crushing

Impact Event	Disturbances on Biodiversity in respect to sampling and trenching activities					
Description	Because the proposed development includes activities that will require the extraction of sand and gravel material for the construction of particularly the ponds / dams for storage of effluent (tailings) and wastewater, it is anticipated that borrowing pits might be dug. Although, priority extraction must be limited to existing such borrow pits prior to creation of new ones.					
Nature	<p>Depending on the scale of extraction (intensity), potential impacts relating to vegetation clearing for access and gravel or sand extraction may arise from the project activities. Consequential impacts therefore are:</p> <ul style="list-style-type: none"> • Dust and Noise pollution from machineries and potential spill of hydrocarbons • Disturbance of habitats (protected plant species) and species displacement • Potential littering with solid waste 					
Phases: Phases during which the project has implications of sampling / impacts apply are highlighted below; Significance assessment was carried out on the sampling / trenching phase which presents a long term risk.						
Construction Phase	Operational Phase	Decommissioning Phase	Post Closure			
<ul style="list-style-type: none"> • Creation of excess tracks • Clearing of vegetation and excavation of pits 	<ul style="list-style-type: none"> • Transportation and delivery of construction material • Crushing and process of mineral ore • Upgrading of access tracks (e.g. grading) 	<ul style="list-style-type: none"> • Transportation and disposal waste material from waste dumps to facilities in town. • Back-filling pits and ponds, and surface leveling for rehabilitation 	N/A			
Severity	Taken together, the disturbances will have a medium severity given that limited number of vehicles will be used and no new access track will be created, these can be drastically minimized to very low with mitigation measures.					
Duration	The Significance of the potential impacts is very high given the project location i.e. near a settlement and within communal conservancy					
Spatial Scale	Low, localized if activities are restricted to the proposed project footprint area thus limiting potential impacts spatially					
Probability	Low to Medium, especially with strict compliance with appropriate mitigation measures, otherwise the probability is High					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	M	L	L	H	L	M
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> • Construction and operation activity must be limited to the pre-identified pegmatites belts within the project area thus reducing the spatial impacts to key areas of the project • Appropriate dust suppressant measures must be employed to mitigate potential dust impacts on the local receptors flora and residents • Equally the construction and operational activities which may result in noise pollution must be limited to day-time hours (preferably between 8am and 5pm) • Temporary bins and spill kits must be provided to ensure that all waste material including hydrocarbons are well contained prior to final disposal at approved sites in either Opuwo or Walvis Bay 					

Table 8: Impact on the Biophysical Environment – Waste Management (Effluent, Solid and Hydrocarbons)

Impact Event	Waste generation and disposal					
Description	Operational activities relating to mainly the lodging and to a lesser degree the actual geological surveying and sampling activities present an opportunity for the generation of both solid waste (litter material) and hydrocarbons (fuel and lubricants).					
Nature	<p>In general, processing activities generates very little domestic solid waste which includes but may not be limited to:</p> <ul style="list-style-type: none"> Litter materials i.e. plastic bags, cartons, food packages and Effluents and sewer may only be generated in case where a base-camp is necessary and a bathroom with flushing toilets are used Minor hydrocarbons spillage(fuels and lubricants), possible contamination of soils and groundwater, in case of hydrocarbon spillage mainly from maintenance of equipment and vehicles 					
Phases: Phases during which the project has implications of waste generation are highlighted below; Significance assessment was carried out on the sampling / trenching phase which requires on-site stays.						
Construction Phase	Operational Phase	Decommissioning Phase		Post Closure		
<ul style="list-style-type: none"> Creation of excess tracks Clearing of vegetation and excavation of pits 	<ul style="list-style-type: none"> Transportation and delivery of construction material Crushing and process of mineral ore Upgrading of access tracks (e.g. grading) 	<ul style="list-style-type: none"> Transportation and disposal waste material from waste dumps to facilities in town. Back-filling pits and ponds, and surface leveling for rehabilitation 		N/A		
Severity	Taken together, waste generation in respect to the proposed activities presents impacts that are of very-low severity as in general little is generated.					
Duration	The duration of the potential impacts is bound to the duration of the proposed operations thus short-term in nature					
Spatial Scale	Low, waste generation shall be limited mainly to the lodging areas and subject to property owners and thus not entirely influence by the proposed project					
Probability	Very Low, shall be limited mainly to the lodging areas and subject to property owners and thus not entirely influence by the proposed project					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	M	L	L
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	L
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> In the field, hydrocarbon waste shall be contained (in spill kits) and stored in appropriate heavy-duty plastic cabbage , transported to the nearest waste-oil recycling / solid waste disposal facility in Omaruru or Usakos Towns A sufficient number of spill kits shall be acquired and strategically placed, particularly near every sampling site to ensure that timely response to any potential fuel and lubricant spills is conducted (should the project require any sampling activities to be undertaken). These shall include an on-site used oil disposal bin(s) Equally, effluent waste shall be managed in compliance with the MWALR effluent discharge requirements. 					

5.2.2 IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

Table 9: Environmental Impact: Human Health and Safety

Impact Event		Disturbances to the social environments				
Description	During the construction and operation stage, social impacts are most likely to be minimal and often positive. At this stage, usually the level of interaction between project staff and or project equipment with the local community is significantly minimum and therefore potential health and safety risks very low. However, given the Corvid-19 pandemic it is recommended that all protocol in this respect are observed throughout the construction and operation phase.					
Nature	The inter-migration of project staff in-and-out of the region may present potential risks of disease transmission particularly in respect to Corvid-19 and other contagious diseases between the local community and project staff. The most significant impact in respect to health is the potential for increasing the strain on the already under capacitated local health services facility should project staff fall ill while in the field.					
Phases: Phases during which sources of social (health and safety) impacts apply are highlighted below;						
Construction Phase	Operational Phase	Decommissioning Phase	Post Closure			
N/A	<ul style="list-style-type: none"> Transportation and delivery of construction material Crushing and process of mineral ore 	<ul style="list-style-type: none"> Back-filling pits and ponds, and surface leveling for rehabilitation 	N/A			
Severity	In the unmitigated scenario, the potential risk for transmission of contagious / infectious diseases is High					
Duration	The Significance of the potential impacts is subject to the compliance with national health protocols, however given the minimal interaction of project staff and the local community impacts are classified as incidental and short-term.					
Spatial Scale	Medium, in case of near-miss incidents (were cases are not detected) the risk may be medium to high but localized if for instance project staff undergo prior testing for Corvid-19 before coming for fieldwork.					
Probability	Low, especially given that there are clear guideline and protocols governing health and safety of both contagious diseases and if they are well observed					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	H	M	M	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	M-L	L	L	M	L	H
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> Strict compliance with the EMP is recommended in respect to managing incidental events; It is strictly advised that project staff ensures that in respect to Corvid-19, are tested prior to venturing in the field (and carries a health certificate indicating a negative result, which is not older than 72 hours) Carry sufficient First Aid equipment to ensure that minor injuries reduces need to access local health facility and therefore minimizing potential strain on local services Strict ban on use of any toxic substances within and during the working environment must be prohibited and serious punitive actions taken against any transgressors is recommended. 					

Table 10: Impact on the Social Environment – Air and Noise Pollution

Impact Event	Disturbances to the social environment					
Description	Should analyses by an analytical laboratory be positive, geological boreholes or trenches are drilled / dug and geological samples collected for further analysis. This will determine the depth of the potential mineralization. If necessary new access tracks to the drill sites will be created and drill pads will be cleared in which to set the rig. Two widely used sampling options may be adopted, these are the reverse circulation sampling and/or diamond-core sampling, and alternatively trenches may be dug for sampling.					
Nature	Depending on the scale of sampling / trenching (intensity), potential noise impacts relating to the use of large vehicles such as a drill rig truck and or excavator may be generated. Consequential impacts therefore are: <ul style="list-style-type: none"> Noise from sampling / trenching machineries may be anticipated 					
Phases: Phases during which sources of social (Air and Noise Pollution) impacts apply are highlighted below;						
Construction Phase	Operational Phase	Decommissioning Phase			Post Closure	
<ul style="list-style-type: none"> Creation of excess tracks Clearing of vegetation and excavation of pits 	<ul style="list-style-type: none"> Transportation and delivery of construction material Crushing and process of mineral ore Upgrading of access tracks (e.g. grading) 	<ul style="list-style-type: none"> Transportation and disposal waste material from waste dumps to facilities in town. Back-filling pits and ponds, and surface leveling for rehabilitation 			N/A	
Severity	Taken together, the disturbances will have a high severity in the unmitigated scenario. In the mitigated scenario, many of these disturbances can be prevented or mitigated to acceptable levels, which reduces the severity to low.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, however the identified impact's duration is incidental and short-term.					
Spatial Scale	Low, localized although cumulative as haulage along the designated routes may lead to increased traffic. The noise aspect is mainly limited to the feedlot facility site which far from residential areas.					
Probability	Very Low, the only noisy activities associated with the proposed operation are limited to the construction and decommissioning					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	M	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	L	L	H
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> Strict compliance with the EMP is recommended in respect to managing incidental events; Noise complaint register must be kept and maintained regularly with mitigation measures adopted accordingly. All excessive noise generating activities must be strictly carried out during the day between 08h00 (am) and 17h00 (pm) week days only. Conditions of the Environmental Clearance Certificate and Surface-use Agreement (with the relevant Traditional Authority and Park) must be accordingly adhere to. As much as possible, it is recommended that vehicles with the most minimum footprint are used such as smallest excavator and or portable drill rig (drawn on a trailer). 					

Table 11: Impact on the Social Environment – Water Resources Contamination

Impact Event		Disturbances to the heritage and scenic value of the environment				
Description	Wastewater produced in each workshop shall contain concentration of bioaccumulation of heavy metals and trace element associated activities and thus posing a potential risk of soils and groundwater contamination i.e. these leach residue includes SiO ₂ , CaO, MgO, Fe ₂ O ₃ , K ₂ O, Na ₂ O, and small amounts of Cu, Mn, Zn, Co, etc., with a pH of 2~3.					
Nature	The extraction workshop and electrowinning workshop, although will be complemented with effluent storage dams and a treatment facility may still present a chance for environmental concerns.					
Phases: Phases during which sources of social (Water Resources Contamination) impacts apply are highlighted below;						
Construction Phase	Operational Phase	Decommissioning Phase	Post Closure			
<ul style="list-style-type: none"> Creation of excess tracks Clearing of vegetation and excavation of pits 	<ul style="list-style-type: none"> Transportation and delivery of construction material Crushing and process of mineral ore Upgrading of access tracks (e.g. grading) 	<ul style="list-style-type: none"> Transportation and disposal waste material from waste dumps to facilities in town. Back-filling pits and ponds, and surface leveling for rehabilitation 	N/A			
Severity	In the unmitigated scenario, Severity is Medium-to-High, however all process circulating fluids, are collected through pump pools and then returned to an appropriate processes for recycling for primary treatment and recycling					
Duration	The significance of the potential impacts is subject to the proposed operation's life-time (in this case short-term), hence potential impacts is incidental in nature					
Spatial Scale	Localized, although chances of groundwater contamination in general are very high when encountered, the probability of occurrence will be reduced with appropriate treatment and recycling of the wastewater.					
Probability	Very Low, the nature of operation significantly limits construction and operation activities to one known pegmatite belt that falls within the mining area.					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	H	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> Strict compliance with the EMP is recommended in respect to managing incidental events and implementation of measure per specifications described in section "2.4.5 Waste (Domestic / Hazardous) Management, Page 11" All leaching residue generated within the service life, must be treated as hazardous and thus must be stored in the specially dedicated tailings storage facility (as far as necessary, the facility must be certified / approved by the relevant competent authorities i.e. Ministry of Agriculture, Water and Land Reform, and Ministry of Environment Forestry and Tourism). A stakeholder complaint register must be kept and maintained regularly with mitigation measures adopted accordingly, recording all concerns relating impacts of the proposed construction and operation activities on the cultural and scenic value of the environment which may be reported by interested and affected parties. 					

Table 12: Impact on the Social Environment – Culture, Heritage and Scenic values

Impact Event		Disturbances to the heritage and scenic value of the environment				
Description	The rapid on-ground survey and desktop review for cultural and heritage sites, reveals that generally there were low/no occurrence of known cultural heritage or archaeological sites, hence the assumption is that the occurrence of undiscovered sites within the project area is low.					
Nature	Any sites that did exist here would either have been discovered already during previous investigations (due to the accessibility of the site to archaeologists) or have been destroyed during previous construction and operation and mining operations and or other land-uses such farming and tourism undertaken in the area.					
Phases: Phases during which sources of social (cultural, heritage and scenic values) impacts apply are highlighted below;						
Construction Phase	Operational Phase	Decommissioning Phase	Post Closure			
<ul style="list-style-type: none"> Creation of excess tracks Clearing of vegetation and excavation of pits 	<ul style="list-style-type: none"> Transportation and delivery of construction material Crushing and process of mineral ore Upgrading of access tracks (e.g. grading) 	<ul style="list-style-type: none"> Transportation and disposal waste material from waste dumps to facilities in town. Back-filling pits and ponds, and surface leveling for rehabilitation 	N/A			
Severity	Severity is Low, disturbances relating to field-based will be low with extremely unlikely probability of occurrence without mitigations					
Duration	The significance of the potential impacts is subject to the proposed operation's life-time (in this case short-term), hence potential impacts is incidental in nature					
Spatial Scale	Localized, although chances of damaging artifacts are very high when encountered, the probability of finding these on the PROJECT area are low and may be limited to certain rock outcrops and along river valleys.					
Probability	Very Low, the nature of operation significantly limits construction and operation activities to one known pegmatite belt that falls within the mining area.					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	M	H	L	H
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	L	L	H	L	M
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> Strict compliance with the EMP is recommended in respect to managing incidental events Contractors working on the site should be made aware that under the National Heritage Act, 2004 (Act No. 27 of 2004) any items protected under the definition of heritage found in the course of development should be reported to the National Heritage Council The chance finds procedure as outlined in the EMP must be implemented at all times, and. A stakeholder complaint register must be kept and maintained regularly with mitigation measures adopted accordingly, recording all concerns relating impacts of the proposed construction and operation activities on the cultural and scenic value of the environment which may be reported by interested and affected parties. 					

Table 13: Impact on the Economic Aspect

Impact Event	Disturbances on social and economic aspects					
Description	Potential economic gains that may never be realized if the proposed project activities does not go-ahead include: loss in potential alternative income for the town, unemployment and the loss of socio-economic benefits derived from future mining development opportunities.					
Nature	However, it is imperative that the community is made aware that a major possible impact of construction and operation is the unrealistic expectations about the development of a mine. It's important for local communities to bear in mind that most construction and operation activity will not advance to mine development.					
Phases: Phases during which sources of social (potential social and economic gain) impacts apply are highlighted below;						
Construction Phase	Operational Phase	Decommissioning Phase		Post Closure		
<ul style="list-style-type: none"> Land preparation and construction activities 	<ul style="list-style-type: none"> Transportation and delivery of construction material Crushing and process of mineral ore Upgrading of access tracks (e.g. grading) 	<ul style="list-style-type: none"> Transportation and disposal waste material from waste dumps to facilities in town. Back-filling pits and ponds, and surface leveling for rehabilitation 		<ul style="list-style-type: none"> Retrenchments, retirement and job losses due to closure 		
Severity	In the unmitigated scenario, this implies in the case where the activity take not take effect, no economic benefits shall realize hence, the severity in respect to unemployment shall be very high. However, with the implementation of the proposed operations, the severity of unemployment shall be reduced to medium.					
Duration	The Significance of the potential impacts is subject to the proposed operation's life-time, with a long-term potential					
Spatial Scale	Low, localized and only limited to the Omaruru or Usakos Towns Settlement community					
Probability	Low – Medium, probability in respect to job creation on both the temporary (during construction and operation) and long-term (during Mine development and operation) phases					
Unmitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L-M	L	L	L	L	L
Mitigated	Severity	Duration	Spatial Scale	Consequence	Probability of Occurrence	Significance
	L	M+	M+	H+	H+	H+
Conceptual Description of Mitigation Measures	<ul style="list-style-type: none"> It is critical that timely and continuous communication and dissemination of information with the local community is ensured to alleviate potential sense of social marginalization, drive gender equality and enhance the understanding and perception of the benefits associated with Beaufort Mining activities To enhance the positive impacts relating to marginal net benefits for the micro-economy (local residence of Omaruru or Usakos Towns Settlement and Erongo at large) and national economy at larger, legislative provisions to Affirmative Action and Labour Welfare must be observed It is strictly recommended that Beaufort Mining negotiates and signs a Surface Use Agreement detailing aspects of conduct and benefit distribution with all key stakeholder i.e. Traditional Authority, Park and other Operators or support institutions e.g. NGOs / CSOs) 					

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 CONCLUSIONS

Namibia is an up-and-coming source country for critical minerals, which are important for renewable energy technologies. The country has the potential to develop new mining projects for cobalt and lithium, and therefore it has in recent years seen great interest towards the construction and operation and development of mineral commodities by foreign investor.

While increased economic activities can stimulate demographic changes and alter social, economic and environmental practices in many ways. Adverse environmental and socio-economic impacts have become a major area of concern for the business community, their customers, and other key stakeholders. Therefore, to ensure that development activities are undertaken in an economic, social and environmental sound / sustainable manner, the Namibian Constitution and Environmental Management Act No. 7 of 2007 provides for an environmental assessment process.

A key consideration in respect to the proposed project alternatives, is that of PROJECT location / site particularly considering that it falls within a farming. Primarily, the key objective in respect to land-use here is generation of economic benefits from farming activities i.e. livestock and or game farming.

Hence, the pre-dominant land-use in these environments is usually non-intrusive and includes alternative tourism operations. However, tourism may have not proven to be the sole economically rewarding land-use option given the prolonged effects of natural disasters and pandemics. This has created an uncertainty which resulted in communities looking beyond farming and tourism for alternative income streams and thus increased mining activities are observed in the area.

In case of social impacts, the assessment focused on third parties only (third parties include members of the public and other local and regional institutions) and did not assess health and safety impacts on workers because the assumption was made that these aspects are separately regulated by health and safety legislation, policies and standards.

The No-Action Alternative comparative assessment, suggests that environmental impacts of a future in which the proposed activities do not take place, may be good for the receiving environment because there will be no potential negative or positive environmental impacts associated with the proposed activities (mineral processing).

Overall, potential impacts may vary in terms of scale (locality), magnitude and duration e.g. minor negative impacts in the form of visual intrusion, dust and noise pollution especially during the field-based activities i.e. sampling and or trenching.

Below (**Table 13**) is a summary of the likely positive impacts that have been assessed for the different phases of the proposed Beuna Mining's mineral processing activities:

Table 14: Summary of key potential environmental concerns during the preparation (construction of mine infrastructure), operational and, closure and decommissioning of the proposed mine development

Potential Source of concern	Description of Potential Concern	Assessment classification i.e. positive / negative
Surface Ephemeral Watercourse and Groundwater Contamination		
Site preparation and construction activities	Potential release of sediments resulting in high concentration of total suspended solids in watercourse	Localised, Low negatives impacts
Construction of linear infrastructure i.e. access roads, water pipelines and powerlines	Potential for effects on aquatic ecosystem resulting from stream-crossing due to creation of access roads	Localised, Low negatives impacts
Fuel and Chemical storage, handling and haulage	Potential release of hydrocarbons form petroleum product and chemicals in an event of spillage may lead to contamination of waters	Localised, Low negatives impacts
Operation and maintenance of mine equipment on-site e.g. vehicles etc.	Potential release of sediments resulting in high concentration of total suspended solids in receiving water	Localised, Low negatives impacts
Terrestrial Biodiversity and Ecosystem disturbance		
Site preparation and construction activities associated with the proposed mining and construction and operation	- Clearing of vegetation around the mine site may impact on biodiversity i.e. in the case where rare, threatened or keystones are present at the plant area	Localised, Low negatives impacts
Construction of linear infrastructure i.e. access roads, water pipelines and powerlines	- Activities might dislocate or disrupt local wildlife and migratory species - Access to the area may also result in increased pouching of wildlife and natural resources	Localised, Low negatives impacts
Operation vehicles and Earth-moving equipment and other mine activities	- Operation of vehicles and equipment may result in collisions with wildlife - Some animals may be drawn to the plant site by lighting, odour etc. leading hazards to both the wildlife and workers	Localised, Low negatives impacts

6.2 RECOMMENDATIONS

Enviro-Leap environmental practitioner confidently recommends that the proposed project can proceed and should be authorized by the DEAF. The proposed operations is considered to have, overall low negative environmental impacts and potential for the enhancement of socio-economic benefits provided all protocols including the proposed mitigation measures are adhered to.

Based on this, it recommended that the proponent must upon obtaining their Environmental Clearance Certificate (E), implement all appropriate management and mitigation measures and monitoring requirements as stipulated in the Scoping Report and or as condition of the E. These measures must be undertaken to promote and uphold good practice environmental principles and adhere to relevant legislations by avoiding unacceptable impacts to the receiving environment.

6.3 STAKEHOLDER ENGAGEMENT AND MONITORING

It is important that channels of communication are maintained over the life-time of the proposed mineral processing project, and with all key stakeholders, members of the general public (including I&APs), as well as the local and traditional authorities, **Table 15** shows the stakeholders engagement recommendations.

Table 15: Actions relating to stakeholder communication

Issue	Management commitment	Phase
Development and maintenance of a Stakeholder engagement plan	On obtaining the Environmental Clearance Certificate and other relevant authorization it is recommended that the proponent undertakes a stakeholder engagement process to develop a Communication and Monitoring Plan for continuous reporting and feedback	All
Understanding who the stakeholders are	Maintain and update the stakeholder register, including stakeholders' needs and expectations. Ensure that all relevant stakeholder groups are included building on pre-identified and registered I&APs.	All
	A representative database would include all relevant local government, service providers and contractors, indigenous populations, local communities, Traditional Authorities (TAs), NGOs, shareholders, the investment sector, community-based organizations, suppliers and the media.	All
	Ensure that marginalized and vulnerable groups are also considered in the stakeholder communication process.	All
	Record partnerships as well as their roles, responsibilities, capacity and contribution to development.	All
Liaising with interested and affected parties at all phases in the mine life	Devise and implement a stakeholder communication and engagement strategy. This strategy must include above all an incident register particularly relating to spillage and or dust complains, and regular monitoring reporting to relevant authorities	All
Responsibility	Beauna Mining and Enviro-Leap Consulting (On-contract)	

A stakeholder engagement plan is an important tool in ensuring that a good working relationship is maintained between the proponent and the community within which the activities are undertaken. It is crucial that this plan is developed in the same transparent manner and approach as the environmental assessment, and that it remains a living document which allows the stakeholder to engage with throughout the duration of the proposed activity.

Equally, it must be at all time readily available on request to all interested and affected parties for review and must provide clear procedures for how and where it can be accessed. All key stakeholder contact details must be included in this plan for ease of contact in case of incidents.

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APPENDIX A: ENVIRONMENTAL MANGEMENT PLAN

OVERALL OBJECTIVES OF THE EMP

The following overall environmental objectives have been set for the Beauna Mining construction and operation and mining development project:

- To comply with national legislation and standards for the protection of the environment.
- To limit potential impacts on biodiversity through the minimization of the footprint (as far as practically possible) and the conservation of residual habitat within the mine area.
- To keep surrounding communities informed of farming activities through the implementation of forums for communication and constructive dialogue.
- To develop, implement and manage monitoring systems to ensure good environmental performance in respect of the following: ground and surface water, air quality, noise and vibration, biodiversity and rehabilitation.

KEEPING EMPS UP TO DATE

This Environmental Management Plan (EMP) document is designed to meet legal requirements and avoid or minimize the impacts associated with the implementation of Beauna Mining construction and operation and mining development. It is the intention that this EMP should be seen as a “living document” which will be amended during the operation, as the activities might change or new ones be introduced.

Should a listed activity(s) as defined in the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) be triggered (as a result of future modifications/changes at the mine), this EMP will be updated as a result of another EIA process as stipulated in the regulations.

IMPACTS MANAGEMENT / MITIGATION MEASURES

Table 16. Impact on the Biophysical Environment – Project site Access and use of vehicles

Issue	Management commitment	Phase
Understanding who the stakeholders are	<ul style="list-style-type: none"> • Maintain and update the stakeholder register, including stakeholders' needs and expectations. • A representative database would include all relevant local government, service providers, indigenous populations, Traditional Authorities (TAs), NGOs or community-based organizations • Ensure that marginalized and vulnerable groups are also considered in the stakeholder communication process. • Record partnerships as well as their roles, responsibilities, capacity and contribution to development. 	All
Liaising with interested and affected parties at all phases in the mine life	Devise and implement a stakeholder communication and engagement strategy.	All
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

Table 17. Impact on the Biophysical Environment – Project site Access and use of vehicles

Impact Event	Disturbances on Biodiversity in respect to access tracks	
Desired mitigation outcome	The objective of the mitigation in respect to impacts on biodiversity is to ensure that as much as possible, disturbance on biodiversity is avoided and prevented while the proposed processing activities is undertaken.	
Proposed Mitigation Measures	<ul style="list-style-type: none"> • Strict compliance with the Forestry Act and Regulations in respect to vegetation clearing, Park Management guidelines and EMP is recommended in respect to managing incidental events; • Strict compliance with the Park Management guidelines and EMP is recommended in respect to managing incidental events; • Construction and operation activity must be limited to the pre-identified pegmatites belts within the project area • Unless necessary and agreed with the local authorities including conservancy management, no new access tracks shall be created and no lodging shall be allowed in sensitive zones • Should the proponent require clearing, removal and transplantation of any protected plant species – services of an appropriately qualified botanist / ecologists must be sought and relevant permissions obtained prior to any such activity being undertaken • A plant survey must be conducted and all protected species clearly marked and protected prior to aid the above pullet point 	All
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

Table 18. Impact on the Biophysical Environment – Dust and Noise pollution from ore extraction

Impact Event	Disturbances on Biodiversity in respect to sampling and trenching activities	
Desired mitigation outcome	The objective of the mitigation in respect to this impacts on local receptors is to as much as possible reduce any conflicts between the operator and local community.	
Proposed Mitigation Measures	<ul style="list-style-type: none"> • Construction and operation activity must be limited to the pre-identified pegmatites belts within the project area thus reducing the spatial impacts to key areas of the project • Appropriate dust suppressant measures must be employed to mitigate potential dust impacts on the local receptors flora and residents • As alluded to in other sections of the report, a complaints registered must be maintained on a regular basis and must form part of the annual audits, monitoring and reporting to the competent authorities • To ascertain that the dust generated from the facility does not present any major concerns, it is recommended that the proponent implement a dust monitoring program of the course of the initial three year ECC validity period. Findings of the monitoring program must inform whether a this study should be undertaken throughout the plant’s lifetime or not. • Equally the construction and operational activities which may result in noise pollution must be limited to day-time hours (preferably between 8am and 5pm) • Temporary bins and spill kits must be provided to ensure that all waste material including hydrocarbons are well contained prior to final disposal at approved sites in either Opuwo or Walvis Bay • Construction and operation activity must be limited to the pre-identified pegmatites belts within the PROJECT area thus reducing the spatial impacts to key areas of the PROJECT • Unless necessary and agreed with the park management, no new access tracks shall be created and no lodging shall be allowed in sensitive zones • Temporary bins and spill kits must be provided to ensure that all waste material including hydrocarbons are well contained prior to final disposal at approved sites in either Omaruru or Usakos • Unless in an emergency, no equipment (vehicles and drill rigs) should be serviced in the field thus preventing unnecessary spillage of hydrocarbons 	All
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

5.2.2 IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT

Table 19. Impact on the Biophysical Environment – Waste Management (Effluent, Solid and Hydrocarbons)

Impact Event	Waste generation and disposal	Phase
Desired mitigation outcome	The objective of the mitigation in respect to waste generation is to ensure that the best scenic value and integrity of the affected environment maintained and or enhanced by reducing chances of littering through proper use of waste management facilities.	
Proposed Mitigation Measures	<ul style="list-style-type: none"> Environmental awareness is an important aspect of environmental management, therefore all project staff and service providers must be educated of the environmental compliance requirements and urged to comply accordingly on induction with the project site. Given that lodging is recommended to be at existing camp-sites and or lodges, this aspect shall be managed as part of the current property owners compliance requirements In the field, hydrocarbon waste shall be contained (in spill kits) and stored in appropriate heavy-duty plastic cabbage , transported to the nearest waste-oil recycling / solid waste disposal facility in Omaruru or Usakos Towns A sufficient number of spill kits shall be acquired and strategically placed, particularly near every sampling site to ensure that timely response to any potential fuel and lubricant spills is conducted (should the project require any sampling activities to be undertaken). These shall include an on-site used oil disposal bin(s) Equally, effluent waste shall be managed in compliance with the lodging host’s requirements, although during any sampling activities – temporary dry-pit toilet facility must be provided at every site. 	All
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

Table 20. Environmental Impact: Human Health and Safety

Impact Event	Prevention and mitigation of any health and safety hazards / risks	Phase
Desired mitigation outcome	The objective of the mitigation in respect to health and safety hazards is to ensure that the health, safety and protection of both the project staff and community receive priority in terms of budgetary provision and compliance	
Proposed Mitigation Measures	<ul style="list-style-type: none"> Strict compliance with the EMP is recommended in respect to managing incidental events; Carry sufficient First Aid equipment to ensure that minor injuries reduces need to access local health facility and therefore minimizing potential strain on local services Strict compliance with national health protocols as and when directive are issued in respect to any disease outbreak and or recurring pandemics such as HIV / AIDS and Corvid-19 Strict ban on use of any toxic substances within and during the working environment must be prohibited 	All
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

Table 21: Impact on the Social Environment – Air and Noise Pollution

Impact Event	Disturbances to the social environment	Phase
Desired mitigation outcome	The objective of the mitigation in respect to ambient air quality and sense of place / noise and chance is to ensure that all possible receptors are identified and practical measures are put in place to reduce these impacts and or respond with appropriate mitigation to complaints	
Proposed Mitigation Measures	<ul style="list-style-type: none"> • Strict compliance with the EMP is recommended in respect to managing incidental events; • Noise complaint register must be kept and maintained regularly with mitigation measures adopted accordingly. • All excessive noise generating activities must be strictly carried out during the day between 08h00 (am) and 17h00 (pm) week days only. • Conditions of the Environmental Clearance Certificate and Surface-use Agreement (with the relevant Traditional Authority and Town) must be accordingly adhere to. • As much as possible, it is recommended that vehicles with the most minimum footprint are used such as smallest excavator and or portable drill rig (drawn on a trailer). 	
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

Table 22: Impact on the Social Environment – Culture, Heritage and Scenic values

Impact Event	Disturbances to the heritage and scenic value of the environment	Phase
Desired mitigation outcome	The objective of the mitigation in respect to impacts on cultural and archaeological heritage integrity is to ensure that at all times, project staff are vigilant of the potential to intrude, disturb and or damage important artifacts and therefore must avoid wandering onto any protected and or sensitive known or identified site.	
Proposed Mitigation Measures	<ul style="list-style-type: none"> • Strict compliance with the EMP is recommended in respect to managing incidental events • Contractors working on the site should be made aware that under the National Heritage Act, 2004 (Act No. 27 of 2004) any items protected under the definition of heritage found in the course of development should be reported to the National Heritage Council <ul style="list-style-type: none"> • The chance finds procedure as outlined in the EMP must be implemented at all times, and. • Detailed field survey should be carried out if suspected archaeological resources or major natural cavities / shelters have been unearthed during the proposed construction and operation and test mining operations. 	
Responsibility	Beauna Mining and Enviro-Leap Consulting (On contract basis)	

Table 23: Impact on the Economic Aspect

Impact Event	Disturbances on social and economic aspects	Phase
Desired mitigation outcome	The objective of the mitigation in respect to economic impacts relating to the proposed activity, is to ensure that potential negative economic impacts on other and existing land-use are prevented, reduced and or mitigated and the positive ones enhanced.	
Proposed Mitigation Measures	<ul style="list-style-type: none"> • It is critical that timely and continuous communication and dissemination of information with the local community is ensured to alleviate potential sense of social marginalization, drive gender equality and enhance the understanding and perception of the benefits associated with Beaufort Mining 's activities • To enhance the positive impacts relating to marginal net benefits for the micro-economy (local residence of Omaruru or Usakos Towns Settlement and the region at large) and national economy at larger, legislative provisions to Affirmative Action and Labour Welfare must be observed • It is strictly recommended that Beaufort Mining negotiates and signs a Surface Use Agreement detailing aspects of conduct and benefit distribution with all key stakeholder i.e. Traditional Authority, Park and other Operators or support institutions e.g. NGOs / CSOs) 	All
Responsibility	Beaufort Mining and Enviro-Leap Consulting (On contract basis)	

Table 24: Site Closure and Rehabilitation

Impact Event	Disturbances on social and economic aspects	Phase
Desired mitigation outcome	The Proponent will commit to establishing a rehabilitation plan as part of the mine closure plan. A conceptual Plant closure plan with costing is under development must be compiled by Beaufort Mining in association with Enviro-Leap and forms part of the environmental compliance and monitoring programme.	
Proposed Mitigation Measures	<ul style="list-style-type: none"> • Beaufort Mining shall submit regular (bi-annual or annual Environmental Reports) to the relevant Ministry stating the construction and operation activities and environmental performance of the project. • Staff of the MET or Ministry of Mines and Energy may at any time inspect the construction and operation area. Internal and external monitoring should involve InterContinental Mining's safety and environmental officer and members of the MEFT. • Should the decision be taken that the project is not economically viable the area will be rehabilitated. The rehabilitation measures that are set out in the Rehabilitation Plan (to be compiled and approved by MEFT) are binding to all personnel on site including the crew and contractors. 	Closure
Responsibility	Beaufort Mining and Enviro-Leap Consulting (On contract basis)	

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- Sarine Galaxy Operator
- Laser Sewing Machine Operator
- Senior Planner and Marker
- Stock Clerk
- Auto Polisher and Polishing Trainer
- Brutter

Qualifications and Requirements:

- Minimum of a Grade 10 or 12 certificate
- 5-10 years of experience in production management
- 4-5 years of experience with the Dialt Automatic machines
- 4-5 years of experience with the use of Sarine and Marking machines
- 4-5 years of experience operating Laser sewing machines
- 4-5 years of experience with the Bruting machine
- 4-5 years of experience with Stock System management

- Demonstrated ability in polishing round and fancy shapes to a Triple EX level
- Must obtain police clearance as a mandatory precondition
- Traits such as trustworthiness and a self-driven nature are highly valued

Please email your current CV, previous employer's reference letter, certified copies of identification, highest qualifications, and police clearance to jobs@tatediamonds.com. Please note that we will not accept hand-delivered applications.



NOTICE FOR PUBLIC PARTICIPATION ENVIRONMENTAL IMPACT ASSESSMENT

Environam Consultants Trading (ECT) hereby gives notice to all potential interested and affected Parties (I&APs) that an application will be made to the Environmental Commissioner in terms of the Environmental Management Act (No 7 of 2007) and the Environmental Impact Assessment Regulations (GN 30 of 6 February 2012) for the following:

PROJECT NAME: The Construction, Operation, Maintenance and Decommissioning of the Proposed Walvis Bay Independence Beach Promenade

PROJECT LOCATION: Along Independence Beachfront, Walvis Bay

PROJECT DESCRIPTION: The proposed project will include the following components:

- A multifunction walkway about 1.3km with a width of 3 to 4meter.
- The walkway will be complemented by a variety of greeneries in the form of lawn/grass, palm trees, succulents, and canopy trees.
- Two functional nodes.
- Different associated infrastructure such as open air gym, trading areas, ablution facility, beach sport facilities etc.

PROPOSER: Municipality of Walvis Bay

PUBLIC MEETING: Public consultation meetings will be held on 15 March 2024 at the following venue and time:

- 10:00-12:00 at Independence Beach, Walvis Bay

REGISTRATION OF I&APs AND SUBMISSION OF COMMENTS: All I&APs are hereby invited to register and submit their comments, concerns or questions in writing to:

Email: colin@environam.com
 Mobile: 081 458 4297

Before or on 22 March 2024.





City of Windhoek
 Web: www.windhoek.namibia | Tel: 061 250 2000



PUBLIC NOTICE

PERMANENT CLOSURE OF PORTION A OF ERF 1092 (STREET) AUASBLUCK EXTENSION 1 AS A "STREET"

Notice is hereby given in terms of Sections 50(1)(a)(ii) and 50(3)(b) of the Local Authorities Act of 1992 (Act 25 of 1992), as amended, that the City of Windhoek proposes to permanently close the undermentioned portion as indicated on the locality plan, which lies for inspection during office hours of the office of Urban Policy, Room 513, Municipal Offices, Independence Avenue.

PERMANENT CLOSURE OF PORTION A OF ERF 1092 (STREET) AUASBLUCK EXTENSION 1 AS A "STREET"

Objections to the proposed closure are to be served to the Harmonic Town Planning Offices, P.O. Box 5216, Windhoek, and the Chief Executive Office, City of Windhoek, P.O. Box 59, Windhoek, within 14 days after the appearance of this notice in accordance with Section 50(3)(b) of the Local Authorities Act of 1992 (Act 25 of 1992).

**E. ARNO
 MANAGER: URBAN POLICY
 DEPARTMENT OF URBAN & TRANSPORT PLANNING**

Issued by Office of the Chief Executive Officer
 Corporate Communications, Marketing and Public Participation

City of Windhoek
 Web: www.windhoek.namibia | Tel: 061 250 2000



PUBLIC NOTICE

PERMANENT CLOSURE OF PORTIONS C AND D OF JASON HAMUTENYA NDADI STREET, AUASBLUCK EXTENSION 1 AS "STREETS"

Notice is hereby given in terms of Sections 50(1)(a)(ii) and 50(3)(b) of the Local Authorities Act of 1992 (Act 25 of 1992), as amended, that the City of Windhoek proposes to permanently close the undermentioned portion as indicated on the locality plan, which lies for inspection during office hours of the office of Urban Policy, Room 513, Municipal Offices, Independence Avenue.

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**E. ARNO
 MANAGER: URBAN POLICY
 DEPARTMENT OF URBAN & TRANSPORT PLANNING**

Issued by Office of the Chief Executive Officer
 Corporate Communications, Marketing and Public Participation

CALL FOR REGISTRATION AS INTERESTED AND AFFECTED PARTIES ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED THE CONSTRUCTION AND OPERATION OF COPPER PROCESSING / EXTRACTION PLANT NEAR SEFONTEIN, IN THE KUNENE REGION

1. PROJECT SITE AND DESCRIPTION

Beama Mining (Pty) Ltd. (the Proponent), intends to obtain an environmental clearance certificate for the proposed construction and operation of a copper processing (extraction) North-east Sefontein, in the Sefontein Conservancy. The key component of the proposed activity entails the fencing off, construction of the proposed plant, and operations thereof i.e. extraction of copper from its mineral ore using the process of three steps; Leaching, Solvent Extraction Plant and Electrowinning.

2. PUBLIC PARTICIPATION PROCESS

Enviro-Leap Consulting invites all Interested and Affected Party (I & AP) to register and receive Environmental Assessment (BID, Scoping and EMP) documents relating to the proposed project for their comments and input.

3. COMMENTS AND QUERIES

Interested and Affected Parties are herewith request to register by writing to us at the address below no later than **22 March 2024**.

Please register and direct all comments, queries to:
 Mr. Lawrence Tjatindi, Environmental Assessment Practitioner
 Email: esp.trigen@gmail.com



ENVIROLEAP CONSULTING cc

10111, 10112, 10113, 10114, 10115, 10116, 10117, 10118, 10119, 10120, 10121, 10122, 10123, 10124, 10125, 10126, 10127, 10128, 10129, 10130, 10131, 10132, 10133, 10134, 10135, 10136, 10137, 10138, 10139, 10140, 10141, 10142, 10143, 10144, 10145, 10146, 10147, 10148, 10149, 10150, 10151, 10152, 10153, 10154, 10155, 10156, 10157, 10158, 10159, 10160, 10161, 10162, 10163, 10164, 10165, 10166, 10167, 10168, 10169, 10170, 10171, 10172, 10173, 10174, 10175, 10176, 10177, 10178, 10179, 10180, 10181, 10182, 10183, 10184, 10185, 10186, 10187, 10188, 10189, 10190, 10191, 10192, 10193, 10194, 10195, 10196, 10197, 10198, 10199, 10200, 10201, 10202, 10203, 10204, 10205, 10206, 10207, 10208, 10209, 10210, 10211, 10212, 10213, 10214, 10215, 10216, 10217, 10218, 10219, 10220, 10221, 10222, 10223, 10224, 10225, 10226, 10227, 10228, 10229, 10230, 10231, 10232, 10233, 10234, 10235, 10236, 10237, 10238, 10239, 10240, 10241, 10242, 10243, 10244, 10245, 10246, 10247, 10248, 10249, 10250, 10251, 10252, 10253, 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Extreme Poverty Still Rampant - Civil Society Groups



 Hertha Ekandjo

Civil society representatives from various regions across Namibia have expressed grave concerns over the enduring levels of poverty and desperation among ordinary citizens despite the potential the country possesses.

These sentiments were echoed in submissions received and compiled by the Institute for Public Policy Research (IPPR) this week, following engagements with the Ministry of Finance.

Stakeholders including the Development Workshop Namibia, Faith Leader Advocacy for Malaria Elimination (FLAME), Namibia Housing Action Group, Shack Dwellers Federation of Namibia, and other concerned entities collectively emphasised the unprecedented nature of poverty and desperation currently experienced nationwide.

"Civil society representatives, who are from the regions and those that travel the country for their work, said that the levels of poverty and desperation among ordinary Namibians is unprecedented since independence," the statement read.

The IPPR said, the absence of comprehensive national surveys since 2017 has left civil society relying on firsthand observations to gauge the extent of poverty and unemployment.

Their consensus underscores a distressing reality: extreme poverty continues to afflict communities across the country.

Last August, civil society organisations convened a consultation meeting with Finance Minister Ipumbu Shiimi and National Planning Commission Director-General Obeth Kandjoze to address budgetary priorities for the 2023 mid-year budget and subsequent fiscal cycles.

The session, organised by the Civil Society Information Centre (CIVIC) and IPPR, provided an avenue for various stakeholders to present their concerns.

Jessica Brown, representing the Development Workshop Namibia, advocated for enhanced support for the most vulnerable segments of society, including those residing in informal settlements.

She proposed the implementation of a Universal Income Grant as a means to alleviate chronic malnutrition, stimulate economic activity, and mitigate the pervasive hardships faced by individuals on a daily basis.

While the 2024/2025 budget endeavours to address some of these challenges through initiatives such as increased food distribution to marginalised communities and bolstering the Orphan and Vulnerable Children Grant, the realisation of a universal income grant remains elusive.

In this regard, Shiimi revealed the government has pledged to boost the frequency of food distribution to marginalised communities with an allocation of N\$170.0 million, along with allocating N\$284.5 million to ensure comprehensive coverage of the Orphan and Vulnerable Children Grant.

Brown also underscored the looming housing crisis, with over 40% of Namibia's population, particularly 66% of urban dwellers, residing in informal settlements or backyard shacks.

Given the projected urbanisation rate of 4.5% annually, urgent measures are needed to ensure affordable land and housing to stem the proliferation of informal settlements.

"The percentage of the population that is urbanised is projected to rise to almost 60% in 2025, up from 41% in 2001, which suggests that the challenges of capacity for urban development will intensify," said Brown.

According to her, there is an urgent need to make land and housing more affordable to halt the rapid spread of informal settlements.

"Direct funding to local authorities would enable them to subsidise plot prices for serviced land, making it more accessible to a larger portion of the population and allowing individuals to gradually build and invest in their own land," she said.

The Shack Dwellers Federation, as noted by the IPPR, serves as a notable example of what can be achieved, albeit they remain underfunded.

Civil society groups also concur that the sluggish pace in developing and implementing policies in the housing and sanitation sectors is a major concern.

For instance, delays in finalising the revised housing policy and implementation plan, drafted in 2022, were only approved by the Cabinet in November 2023.

Furthermore, there is a shared consensus on the urgent necessity to invest in Early Childhood Development (ECD).

The documented benefits of significant ECD investments could significantly enhance educational outcomes overall. Presently, education spending is skewed, with very low expenditure per child in the early years.

In 2016, the Namibia Statistics Agency (NSA) introduced three new poverty lines, designating households with N\$293 per month for food as extremely poor.

The second level of food poverty, for the severely poor, was set at N\$389 per household per month.

"The third poverty line is for all those classified as poor, set at N\$520.8 per household per month. The extreme and severely poor are subsets of this group," stated statistician general Alex Shimuafeni.

These statistics are outlined in the Namibia Household Income and Expenditure Survey for 2015/2016's preliminary indicators.

According to the NSA, Namibia's total population is 2,280,716. Shimuafeni noted an overall reduction in the proportion of the population classified as poor, from 28.7% in 2009/2010 to 18% in 2015/2016.

The severely poor decreased from 15.3% to 11%, while the extremely poor declined from 7.3% to 5.8%.

Regarding income distribution, as measured by the Gini coefficient, a slight reduction of 2.5 percentage points was observed between the 2009/2010 survey and the one for 2015/2016.

CALL FOR REGISTRATION AS INTERESTED AND AFFECTED PARTIES

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED THE CONSTRUCTION AND OPERATION OF COPPER PROCESSING / EXTRACTION PLANT NEAR SESSEFONTEIN, IN THE KUNENE REGION

1. PROJECT SITE AND DESCRIPTION

Beauna Mining (Pty) Ltd. (the Proponent), intends to obtain an environmental clearance certificate for the proposed construction and operation of a copper processing (extraction) North-east Sessefontein, in the Sessefontein Conservancy. The key component of the proposed activity entails the fencing off, construction of the proposed plant, and operators thereof i.e. extraction of copper from its mineral ore using the process of three steps; Leaching, Solvent Extraction Plant and Electrolysis.

2. PUBLIC PARTICIPATION PROCESS

Enviro-Leap Consulting invites all Interested and Affected Party (I & AP) to register and receive Environmental Assessment (EIA), Scoping and EMP documents relating to the proposed project for their comments and input.

3. COMMENTS AND QUERIES

Interested and Affected Parties are herewith request to register by writing to us at the address below no later than **22 March 2024**.

Please register and direct all comments, queries to:
Mr. Lawrence Tjandji, Environmental Assessment Practitioner
Email: esp.tr@gn@gmail.com



ENVIROLEAP CONSULTING cc.

100% Namibia-owned and operated

111 B. Swartkops, Windhoek | 06 6 60 60 60 | www.enviroleap.com

APPENDIX C: CONSENT FROM RELEVANT AUTHORITY

NAMIB DAMAN TRADITIONAL AUTHORITY

Sesfontein
Kunene Region
Namibia

21 August 2023

To: BEAUNA MINING (PTY) LTD
PO BOX 1268
WINDHOEK
NAMIBIA

Att: Mr. JT Malgas

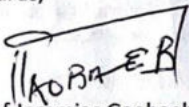
RE: APPLICATION FOR LAND

I am writing in response to your letter of August 17.

We are delighted that your company is considering our constituency to build your factory. I hereby give my consent that the full size of 100 (one hundred) hectares of land, as per your application, be granted unto your organization for the purpose as requested and therefor, looking forward to further engage with your management.

You have my support and that of our community, and we hope that you will provide the much needed job opportunities to the people in our area.

Regards,


Chief Jeremias Gaobaeb



January 2019 – June 2019

Position: Social Policy Consultant – Gender Mainstreaming: Benguela Convention Commission. Responsibilities:

- Conducted and compiled a draft Situation Analysis Report, summarizing the findings of desk review, gender survey through the field mission and interviews
- Compiled a draft Action Plan for BCLME III Project and Gender Policy for BCC
- Hosted and facilitated a situation analysis findings validation workshop
- Produced final Situation Analysis Report, Gender Action Plan for BCLME III Project, including a proposed gender-responsive Project Results Framework with gender-responsive outputs, sex- disaggregated indicators, baseline and targets. Gender Policy for BCC

August 2011 to Dec 2012

Project Coordinator-MCA Agriculture & Environment:

- Managed the Millennium Challenge Accounts Namibia Agriculture and Environment project's activities.
- Co-Developed, implemented and monitored local-level integrated activities and annual work plans for the CBNRM.
- Undertook and provided training and technical support to the targeted conservancies as per the objectives of the CBNRM
- Ensured project compliance with donor requirements through production of and submission of technical reports according to Donor procedures trainings for land management for farmers

February 2004 – March 2009

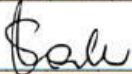
Researcher: Land, Environment and Development Project-Legal Assistance Centre. June 2006 – November 2009

- Assist with desktop and field research on land, environmental and urban housing (informal settlements).
- Assist in the compilation of research questionnaires
- Conduct interviews
- Assist with project administration
- Liaise with stakeholders NGO's, Government Agencies, Farmer's Associations, Ministry of Environment
- Draft research reports

CERTIFICATION

I, the undersigned, Shadrack Tjiramba, hereby certify to the best of my knowledge that the information provided herein correctly describe me, my qualifications and experience.

Date: 20 January 2024

Signature: 



P. O. Box 25874, Windhoek



+264 81 622 9933:



Email eap.trigen@gmail.com

PROFESSIONAL PROFILE

Mr. LAWRENCE TJATINDI
Project Manager and Environmental Practitioner

ID Number :	82110710012	EMAIL:	eap.trigen@gmail.com
Country of Residence :	Namibia	Cell:	+264-81-486-9948
Nationality:	Namibian		

PROFESSIONAL OVERVIEW

Experience Internationally:

Countries worked: Namibia

Languages: English (*fluently written, spoken and read*);
Otjiherero (*fluently spoken, written and read*)
Afrikaans (*well spoken, fairly written and read*)

Languages: Project Management
Tailings Risk and water balance
Waste water treatment technologies
Feasibility studies – Mining Projects
Water Supply and reticulation design

ACADEMIC QUALIFICATIONS:

2009	University of Stellenbosch	Senior Management Development Program (Business School)
2007	University of Cape Town	Bachelor of Science in Chemical Engineering

EMPLOYMENT RECORD:

May 2022 - Current: Enviro-Leap Consulting Cc
Position: Project Management and Environmental Practitioner

- Update stakeholder register and manage engagement plan
- Conduct environmental compliance inspections and audits
- Represent Enviro-Leap at stakeholder engagement meetings
- Coordinate closure and rehabilitation of mining development projects
- Attend site visits for new projects
- Meet with clients to align requirements with Enviro-Leap's output. Compile and review environmental policies and audits

January 2018 – April 2022 (fixed-term 4 plus years)

Position: Senior Engineer – Water and Tailings Risk Management: Dundee Precious Metal Tsumeb Smelter

Responsibilities:

- Waste water treatment and effluent quality compliance monitoring
- Ensure compliance with water abstraction permit
- Internal auditing of Tailings compliance with corporate standards and international good practice
- Operationalization of recommendations from Expert reviews and mandatory audits.
- Ensure tailings operation is in line with design specifications
- Provide specifications that feeds into the tailings design tables

April 2015 – December 2017

Position: Senior Metallurgist – Product Recovery Section: Langer Heinrich Uranium Mine

Responsibilities:

- Technical advisor to the recovery section – Setting metallurgical Operating parameters
- Test work lead for Membrane technology – Nano Filtration, Ultra Filtration, Reverse Osmosis
- Test work lead for Ion exchange separation efficiency – NIMCIX and Fixed Bed ion exchange

August 2010 to July 2014

Position: Technical Metallurgist – Water Management and Tailings Planning: Rössing Uranium Mine

Responsibilities:

- Technical advisor to the tailings management team
- Recommend improvement initiatives for return dam solution
- Formulation of 5 year deposition planning

Position: Process Control Metallurgist

Responsibilities:

- Technical advisor for the recovery section of the refinery

Position: Test work Lead – Pre-feasibility study for heap leaching of low grade Uranium ore

Responsibilities:

- Lead the test work team for the feasibility study for Heap Leaching
- Write up of study findings
- Design test work program for the study

February 2007 – July 2010

Position: Graduate Metallurgist – Sulphuric acid and water treatment plant: Skorpion Zinc mine

- Completed graduate development program
- Junior area metallurgist for the acid and water section of the plant
- Custodian of water balance of the plant
- Metal accountant for the refinery section

CERTIFICATION

I, the undersigned, Shadrack Tjiramba, hereby certify to the best of my knowledge that the information provided herein correctly describe me, my qualifications and experience.

Date: 20 January 2024

Signature: 



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