

# ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL 7170, LOCATED 140 KM EAST OF WALVIS BAY, ERONGO REGION



## ENVIRONMENTAL SCOPING REPORT

**Prepared for**

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## DOCUMENT DESCRIPTION

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**Project Title:** Proposed exploration activities on EPL 7170 Located 140 km east of Walvis Bay.

**Report type:** Environmental Scoping Report

**Proponent:** Hope Namibia Mineral Exploration (Pty) Ltd

**Project Location:** Walvis bay District, Erongo region

**EAP:** Joseph Kondja Amushila

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## **LIST OF ACRONYMS**

BID:	Background Information Document
DWNP:	Directorate of Wildlife and National Parks
DWSSC:	Directorate of Water Supply and Sanitation Coordination
EAP:	Environmental Assessment Practitioner
ECC:	Environmental Clearance Certificate
EIA:	Environmental Impact Assessment
EMA:	Environmental Management Act
EMP:	Environmental Management Plan
EPL:	Exclusive Prospective Licence
GDP:	Gross Domestic Product
HWC:	Human-Wildlife Conflicts
I&APs:	Interested and Affected Parties
IUCN:	International Union for Conservation of Nature
IWRM:	Integrated Water Resources Management
MAWLR:	Ministry of Agriculture, Water and Land Reform
MEFT:	Ministry of Environment, Forestry and Tourism
MME:	Ministry of Mines and Energy
MoHSS:	Ministry of Health and Social Services
NBRI:	National Botanical Research Institute
NEPL:	Non-Exclusive Prospective Licence
NGO:	Non-Governmental Organizations
NNP:	Namib Naukluft Park
PPP:	Public Participation Process
QDS:	Quarter Degree Square
ToR:	Terms of Reference

## **EXECUTIVE SUMMARY**

Hope Namibia Mineral Exploration (Pty) Ltd, hereinafter referred to as the proponent, has acquired mineral rights under the Exclusive Prospective Licence (EPL) 7170 since 23 October 2020, with the expiry date of 22 October 2023. Bezant Resources Plc, an AIM-listed company, through its subsidiary Hepburn Resources Pty Ltd, holds a 70% interest in the licence and acts as an exploration operator.

Over the years, there have been various exploration campaigns targeting mineralization associated with the Matchless Amphibolite, in the vicinity of the EPL. However, no data is known for the specific area underlying EPL 7170. The proponent is prepared to commence with the exploration activities on the property. The proponent will also invest more in analysing samples to get a better understanding of mineralisation on the complex and to attempt its quantification as resource. These planned activities are subject to tenement renewal outcome, availability of funds and market conditions for the projected licence tenure.

According to the Environmental Management Act No. 07 of 2007 and Environmental Impact Assessment Regulations of February 2012, an Environmental Clearance Certificate (ECC) is required for any activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining act), 1992 as well as any other forms of mining or extraction of any natural resources whether regulated by law or not.

This report constitutes an Environmental Scoping report which details a description of the historic and ongoing exploration activities. It also provides a description of the receiving environment in terms of the biophysical aspects of climate, water, vegetation, geography, topography, and the socio-economic environments. The report is to be read in conjunction with the Environmental Management Plan (EMP) appended to this report. Given the diversity of habitats as well as the archaeological and geological peculiarity of the area, specialist studies were conducted to establish the ecological, archaeological and geological settings of the area.

# 1. INTRODUCTION

## 1.1 Background

The proponent is applying for a two-year renewal of its' Exclusive Exploration Licence (EPL 7170) to allow the proposed exploration activities on the tenement. The proposed prospecting and exploration activities will enable the proponent to delineate mineral deposits of the targeted commodities, as part of the resource development for mining purposes.

The EPL is located about 140 km east of Walvis Bay, Erongo region, and covers approximately 13,996.2557 hectares. The EPL is situated within the Namib Naukluft Park (NNP) and is sandwiched by EPL 6605 also owned by Hope Namibia Mineral Exploration (Pty) Ltd and EPL 5796 and ML 246 owned by another Bezzant Subsidiary Hope and Gorob Mining (Pty) Ltd. (Figure 1). The EPL area is in within the vicinity of the historical Hope and Gorob copper mines which were the first copper deposit to be mined on a large scale in Namibia (1840's) and terminated around 1922.

The EPL 7170 is registered for the following commodity groups: *base and rare metals, dimension stones, industrial minerals, and precious metals*. The Proponent has interests in prospecting, exploration, mapping, mining, surveying, and exploration drilling, and has identified an opportunity and/or intends to commence with slightly intrusive exploration activities along the Matchless Amphibolite Belt and more specifically the Kuiseb Formation.

In terms of the Environmental Management Act of 2007 and the Minerals (Prospecting and Mining) Act 33 of 1992, the proponent needs to apply for the Environmental Clearance Certificate (ECC) for the proposed exploration activities. The EIA study was conducted in a systematic approach, as outlined in the EIA Regulations of February 2012. The objective of the EIA is to identify the potential impacts associated with the exploration activities and to provide mitigation measures and ensure that potential impacts to the environment are managed effectively and that positive impacts are enhanced.



## 1.2 Terms of Reference

The Terms of Reference (ToR) are aligned with the requirements of the Environmental Management Act 7 of 2007 and its 2012 Regulations. The consultant is therefore required to.

- i. Identify, investigate and evaluate all potential impacts of the exploration activities on the physical environment, social, cultural and economic environment.
- ii. Review relevant and applicable legislations
- iii. Consult relevant stakeholders and potential Interested and Affected Parties (I&APs)
- iv. Prepare an Environmental Scoping report.
- v. Compile an Environmental Management Plan.
- vi. Submit the Environmental Scoping Report and Environmental Management Plan (EMP) to MEFT as per EMA Regulations of 2012.

## 1.3 Environmental Assessment Practitioner (EAP)

Green Gain Consultants cc has designated a team of consultant who are qualified EAP in terms of Section VII of the EIA Regulations of February 2012.

<b>Lead EAP</b>	<b>Mr. Joseph Kondja Amushila</b>
<b>Qualifications</b>	<ul style="list-style-type: none"> <li>• Master of Science in Environmental Management (University of the Free State, South Africa)</li> <li>• Bachelor Honours Degree in Agriculture (Polytechnic of Namibia)</li> <li>• Bachelor's degree in agriculture (Polytechnic of Namibia)</li> <li>• National Diploma in Agriculture (University of Namibia)</li> </ul>
<b>Experience</b>	10 years' experience in Environmental consulting industry, most of which includes Strategic Environmental Assessment (SEA), Environmental Impact Assessment, Environmental Management Plans (EMPs) and Specialist studies.
<b>Other team members</b>	<b>Ms. Justina Nghihangwa</b> Environmental Health Specialist Qualifications: B. Honours Environmental Health, Mr. Sc. Health Science (NUST)

## **2. METHODOLOGY**

The study was conducted in a multidisciplinary approach as outlined in the EIA Regulations (Government Notice No. 30 of 2012). The methods used in the collection of information and assessment are explained below.

### **2.1 Field inspection and baseline data collection**

The consultant conducted a field inspection at the proposed exploration target site. During the field inspection, the consultant conducted a walk-through-survey across the site to record various plants and animal species observed. Information from previous studies and surveys were reviewed.

The data collected during the site visit and from secondary sources can be summarized as follows:

- A list of all plant species observed at the site. This was verified with Quarter Degree Square (QDS) from the National Herbarium of Namibia (WIND) of the National Botanical Research Institute (NBRI).
- Description and composition of the diverse habitats and plant communities observed on site.
- A list of all mammals, reptiles and amphibians directly or indirectly observed at the site.
- Maps of sensitive areas identified in the field and delineated on satellite imagery of the site.
- GPS coordinates of significant point-location biodiversity features.
- Photographs of various habitats, environments and biodiversity features present.

### **2.2 Specialist study**

Given the sensitivity of the area and the types of vegetation, an Ecological specialist study was conducted as part of the EIA. The findings of this study are incorporated in this EIA. Information on the ecological setting of the area was collected from sources the existing information and site observation. The conservation status of the species in the list was extracted from the database of the Ministry of Agriculture, Water and Land Reform (MAWLR) and the Red Data Book Namibian Plants. Information on fauna were obtained from direct observation and counter checked with important sources such as the Birds in Namibia, IUCN Red list of Threatened species of Namibia, and other relevant reports.

### **2.3 Legal and policy review**

Relevant legislations were reviewed, and their applicability are outlined in Section 5 of this document.

## 2.4 Public and stakeholder consultation

The study was subjected to a public participation process (PPP) as defined in the Environmental Management Act 7 of 2007 and EIA Regulations of February 2012. The process that was followed is summarized below.

### 2.4.1 Consultations of stakeholders

The project was formally introduced to key stakeholders such as Government Ministries, Regional and Conservation organisation. The aim of these consultations was to ensure that all relevant stakeholders are aware of the development and to obtain consent and input. The full list of stakeholders consulted is appended as part of the Proof of Consultation (Appendix A)

### 2.4.2 Consultations of I&APs

Potential IAPs were invited to register through newspaper advertisements that were published in two (2) local newspapers: New Era, and Confidante, for 29 September and 06 October 2023. Public notices were also placed at public places in Walvis Bay and around the EPL site.

**ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPL 7170, ERONGO REGION**

Notice is hereby given to all Interested and Affected Parties (I&APs), that an application for an Environmental Clearance Certificate will be submitted to the Ministry of Environment, Forestry and Tourism (MEFT) for the following activities.

**Project title:** Proposed exploration activities on EPL 7170  
**Project location:** Walvis Bay District, Erongo region  
**Proponent:** Hope Namibia Mineral Exploration (Pty) Ltd.  
**Description:** The proponent intends to commence with slightly intrusive exploration activities on EPL 7170 for base metal and precious metal deposits hosted within the Matchless Amphibolite Belt and more specifically the Kuiseb Formation. The EPL is located about 100km southeast of Walvis Bay in the Namib-Naukluft Park, Erongo region. It covers approximately 13996.3ha, however, certain sensitive areas have been identified and will be avoided.

I&APs are hereby invited to register, request the Background Information Document (BID) and submit comments/input to [eia@greengain.com.na](mailto:eia@greengain.com.na) or [jkondja@gmail.com](mailto:jkondja@gmail.com).

**The last day to submit input is 19 October 2023.**  
**The need for a public meeting will be communicated to all registered I&APs**


**For more information contact:**   
**+264 81 142 2927**

Figure 1: Copy of Public Notice

### 2.4.3 Consultative meeting

A consultative meeting was held on Friday, 20 October 2023 at Gobabeb Research Centre, at 10:30. During the meeting, participants were introduced to the project and informed on the purpose of the study and the purpose of the consultation and their rights towards the study.

### 3. DESCRIPTION OF THE PROPOSED ACTIVITIES

#### 3.1 Locality

The EPL7170 is located about 140 km east of Walvis Bay, Erongo region and is accessible via the C14 road to Windhoek.

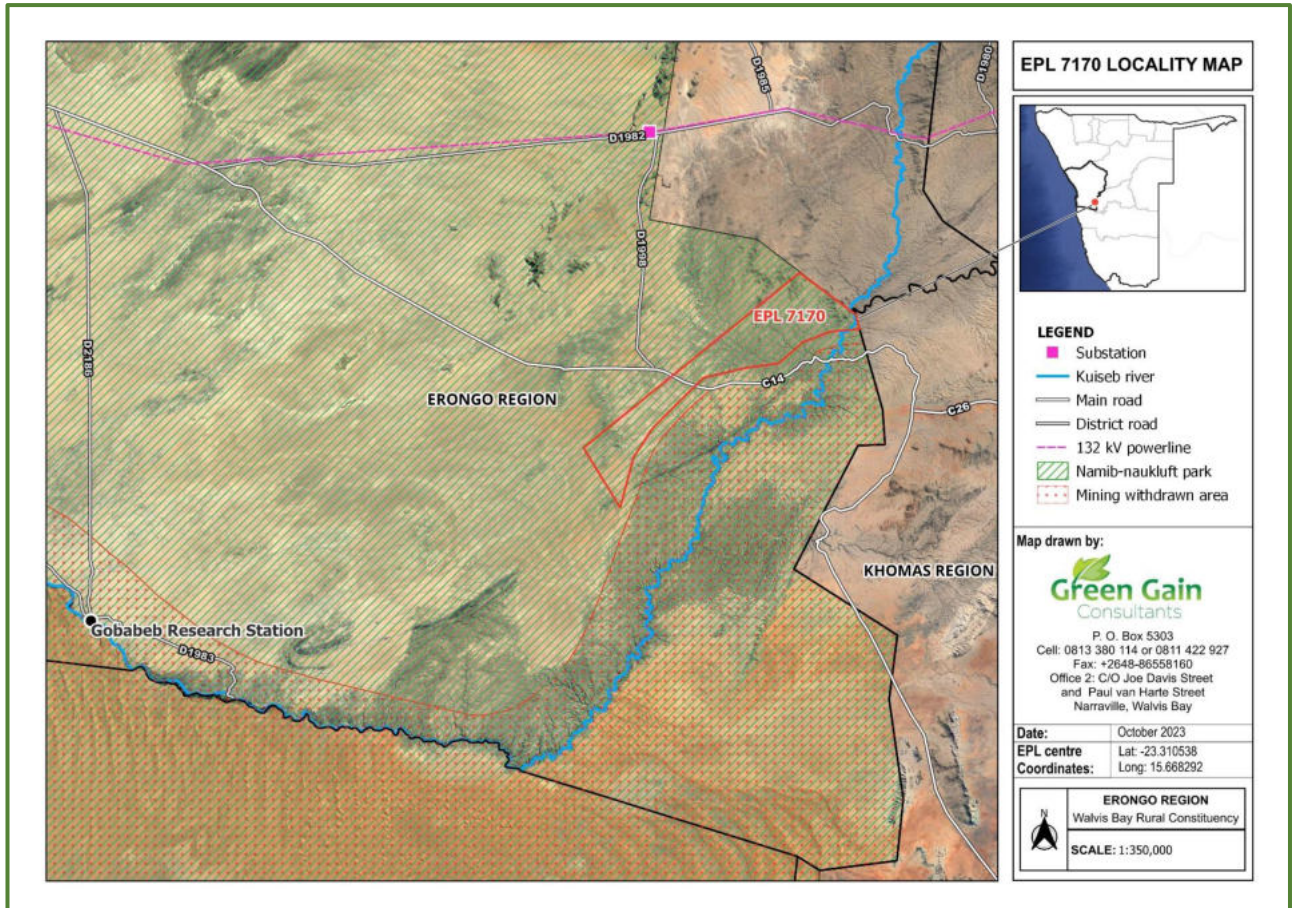


Figure 2: Locality map

### 3.2 Land use context

The EPL is situated within the Namib Naukluft Park and is sandwiched by EPL 6605 also owned by Hope Namibia Mineral Exploration (Pty) Ltd and EPL 5796 and ML 246 owned by another Bezzant Subsidiary Hope and Gorob Mining (Pty) Ltd

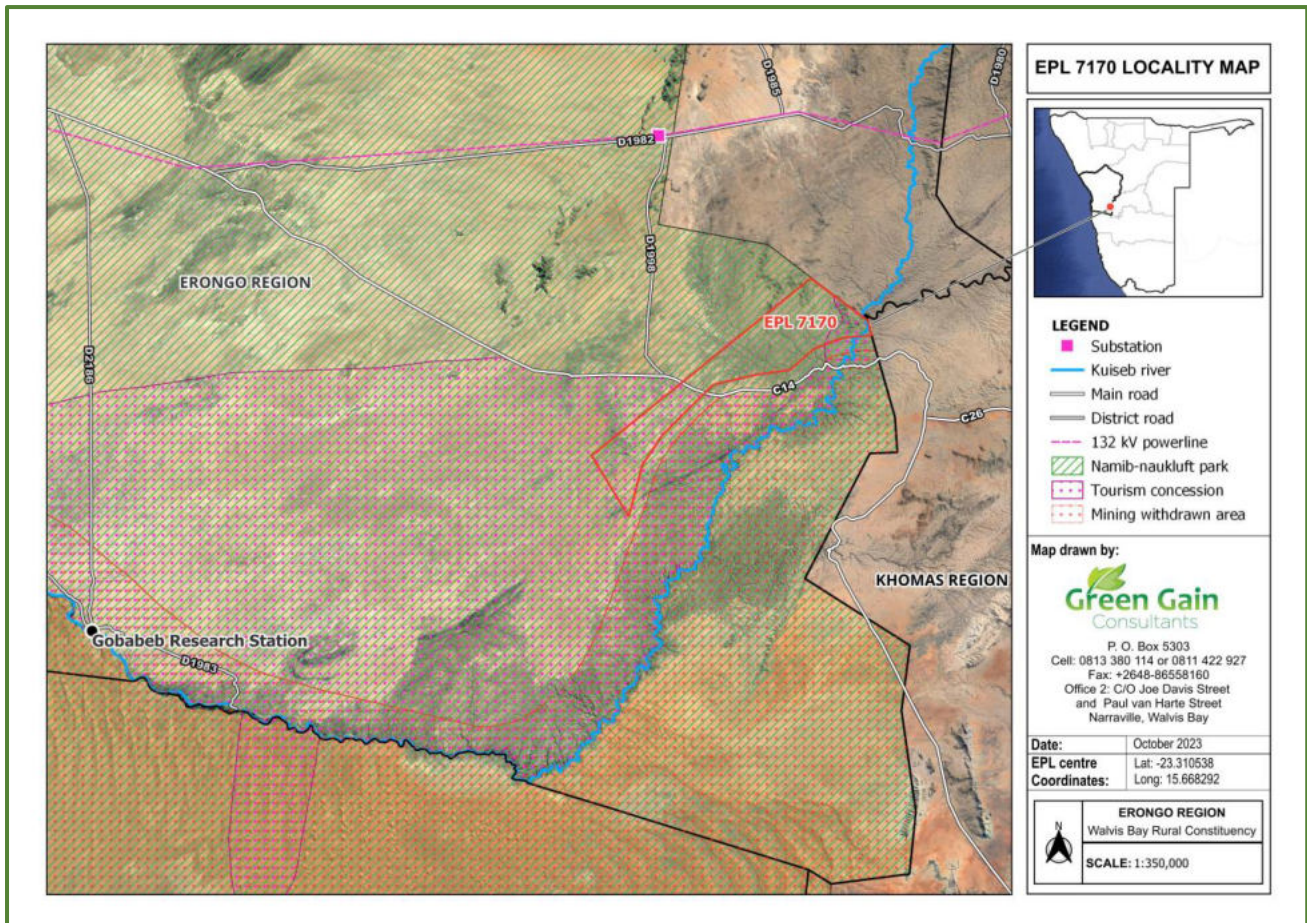


Figure 3: Existing Concession area within the EPL area

As depicted in Figure 3, the western part of the EPL area overlaps with the Gobabeb Tourism Concession area.

### 3.3 Historic exploration activities

The EPL 7170 is located within the vicinity of the historical Hope and Gorob copper mines which were the first copper deposit to be mined on a large scale in Namibia (1840's) and terminated around 1922 (Figure 5).

Over the years, there have been various exploration campaigns targeting mineralization associated with the Matchless Amphibolite, in the area under review. The most relevant work was conducted after 1957 by Rand Mines (1957 to 1958), a joint venture between Nord Mining and SA Vendome (1970 to 1973), B&O Minerals (a Southwest African arm of JCI, Ltd – 1973 to 1986) and Goldfields Namibia (1995 to 1997) all conducted work in the vicinity of the proposed project. However, no data is known for the specific area underlying EPL7170. Nevertheless, it is understood that geophysical surveying by Nord Mining and SA Vendome did cover part or all of the area underlying EPL7170.

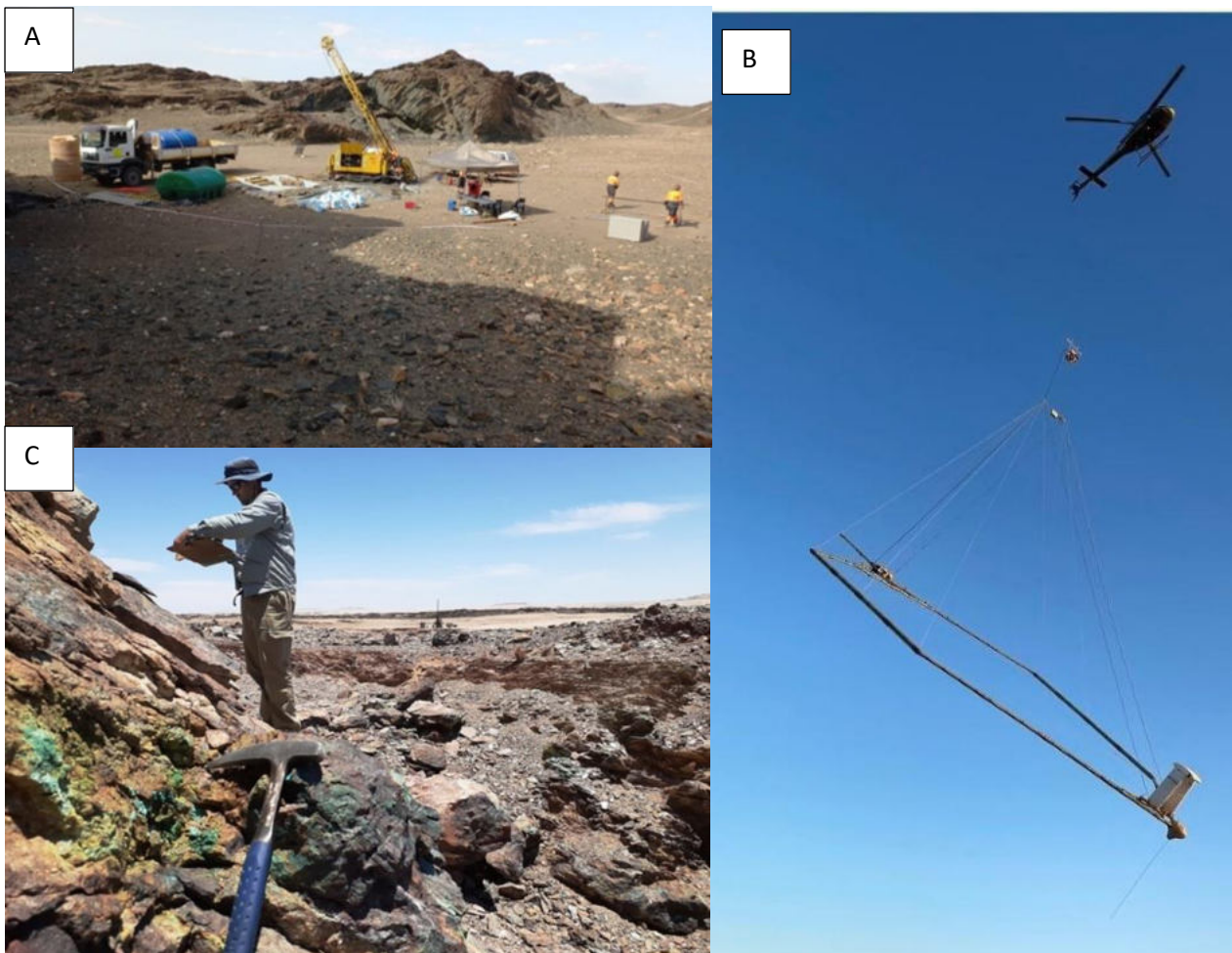


Figure 4: Previous exploration activities on the tenement

### 3.4 Target area

The targeted mineral deposits belong to the so-called " matchless belt Cu-Zn- sulfide deposits" and had been explored by drilling and by geophysical methods in 2008 at Hope. Apart from primary sulfides at the Hope mine stope, malachite and other secondary copper minerals were also found in the old open cut works of the Gorob mine. Minerals mentioned from the above deposits are: Atacamite, Azurite, Bornite, Chalcopyrite, Chalcocite, Cuprite, Limonite, Malachite, Pyrite, Staurolite, Vésignéite and Volborthite.

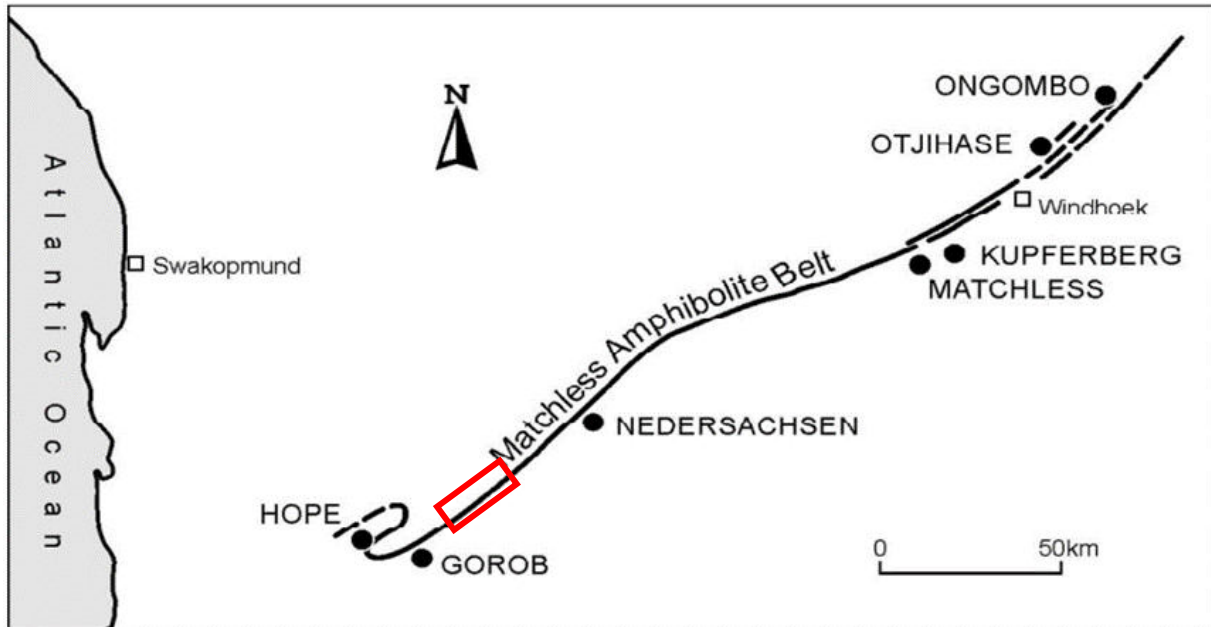


Figure 5: Target area

## 3.5 Proposed exploration programme

### 3.5.1 Activities

The proposed prospecting and exploration activities methods are divided into two (2) categories:

i). Phase 1: Non-invasive techniques

- Desktop study of existing data to identify potential prospecting and exploration targets. subject to review at each stage of the programme:
- satellite data and imagery investigation.
- Geological mapping.

ii). Phase 2: Slightly invasive techniques

- Airborne Geophysics (Figure 4 B)
- Ground base Geophysics (Figure 6 A)
- Diamond core drilling (Figure 6 B)



Figure 6: Proposed exploration techniques



### **3.5.2 Exploration team**

The on-site, in-house team will consist of a geologist and six labourers, all will be local (Namibians). Specialized services such as geophysics, drilling etc will utilize contractor. Additional expertise will be accessed through a network of consultants.

The on-site team will reside in their private homes (between Kharabes to Homeb). Where accommodation is required, this can be sourced from Gobabeb Research Station (GRS) and or outside the NNP, towards Solitaire on private Guest farms.

### **3.5.3 Resources utilization**

Water is sourced from an amalgamation of sources. Gobabeb, a water borehole at Gorob and possibly from private property, eastward, outside of the NNP, towards Solitaire. Water will only be required once diamond core drilling is undertaken. In the order of 3 000 l is required per day. First stage of physical drilling is in the order of 45days – 135 000l. The second stage of drilling, will be in the order of six months later, consisting of in the order of 90 days of physical drilling – 270 000 l.

### **3.5.4 Waste Management**

Exploration activities produce different types of waste such as waste rocks and general waste e.g., litter etc. General waste will be collected and disposed of at the nearest disposal site. There will also be a radiation monitoring of waste and hydrogeological drilling to monitor the composition of groundwater and aquifer levels.

### **3.5.5 Rehabilitation**

Progressive rehabilitation programme will be undertaken concurrent with the exploration activities and will include the followings.

- Refilling and levelling of trenches
- Removal waste, scraps and contaminated soil from spills and leaks
- Flattening of abandoned roads
- Re-vegetation of the disturbed area with local adapting species under the supervision of the MEFT (NBRI and/or NNNP), where possible.
- Dust and Erosion control measures
- On completion of operations or if exploration activities cease for certain reasons, all infrastructure, equipment, plant, temporary housing, and other items used must be removed from the site.

## **4. DESCRIPTION OF THE AFFECTED ENVIRONMENT**

Below is the baseline of the affected environment which entails a description of various environmental receptors that are likely to be affected by the proposed exploration activities. This includes both the socio-cultural-economic and biophysical aspects. The impacts on socio-cultural-economic aspects will affect a greater geographical area e.g., constituency, regional and national. On the other hand, the baseline study area chosen for physical and ecological data collection is mainly the area which is in the direct zone of influence of the exploration activities, its process facilities and supporting infrastructures.

### **4.1 Socio-economic environment**

#### **4.1.1 About the area**

The Namib Naukluft National Park is the country's largest conservation area and covers almost 50 000 km<sup>2</sup> and protects some of the most varied and extraordinary ecosystems in Namibia. It is home to the flat plains of Ganab, the spectacular Naukluft mountains and the largest dunes in the world.

#### **4.1.2 Archaeology and Palaeontology**

Most of the NNP is currently uninhabited, thus there are no dwellings around the area. However, some studies have noted a human presence in the area since Early Stone Age man (*Homo erectus*) leaving behind stone hand axes as evidence of occupation. It is believed that supported small clans of strandlopers, who lived off fish, birds, and other marine life, while the interior served as occasional hunting grounds for San and seasonal grazing land for nomadic pastoralists. Moreover, the Naukluft has also been inhabited in the more recent past, for example by resistance fighter Hendrik Witbooi, who sought protection here with his Oorlam troops after a battle against the German colonial power.

To date, there about 300 Topnaar people lives within the borders of the park, inhabiting 13 small villages along the lower Kuiseb River where they raise livestock and harvest !nara melons.

The full Archaeological and Heritage Impact study was conducted by TARO Archaeological & Heritage Consultants. This was conducted according to the existing National Heritage Act, No. 27 of 2004 and National Heritage Guidelines for Heritage Impact Assessment of 2021, Environmental Management Act, No 7 of 2007, and other relevant legislations. The report was submitted to the National Heritage Council (NHC)) in request for a consent letter.

## **4.2 Biophysical environment**

### **4.2.1 Climate and meteorology**

#### ❖ Climate

The NNP area is the most arid lands in Africa south of the Sahara with the annual rainfall below the 100 mm median isohyet and much of it below the 50 mm isohyet. The annual rainfall is very variable from year to year and area to area with an annual coefficient of variation ranging typically from 80% to over 100%. Temperatures are generally moderate (average minimum and maximum temperatures during the coldest and hottest months respectively).

The area is frequent by fog, about 125 days per year on the coast dropping to about 40 days per year 80 km inland. The fog bank tends to persist offshore and rolls inland during the evening, occasionally reaching up to 50 km inland. The mountain ranges and inselbergs tend to attract more fog and it persists for longer over the higher ground because of the delayed dissipation of the inversion layer at altitude. As the winds pick up during the day, the inversion layer decays and the temperature differential between land and sea decreases, which causes the fog to dissipate as the day progresses.

The most prevailing winds are southerly to south-westerly winds which persist throughout the year, occasionally giving way to very strong north-easterly 'Berg' winds during the winter months. Calm conditions are rare, especially near the coast. Pomona has the distinction of having the highest wind velocities in southern Africa, with constant daily winds in summer ranging in velocity from 30 to 80 kph (8-22 m/s). Given that the erosion threshold for sand mobilisation is 4.4 m/s, sandstorms are a frequent occurrence (MEFT, 2013).

The NNP falls within the Southern Namib hyper-arid Desert and Coastal Biomes. These biomes contain a number of different vegetation types and offers a diversity of habitats (mountain slopes, gorges, plateaus, and dry riverbeds).

## 4.2.2 Flora and fauna

According to the NNP zoning map (**Figure 8:**), much of the EPL area falls under Category 2 (Areas of medium sensitivity).

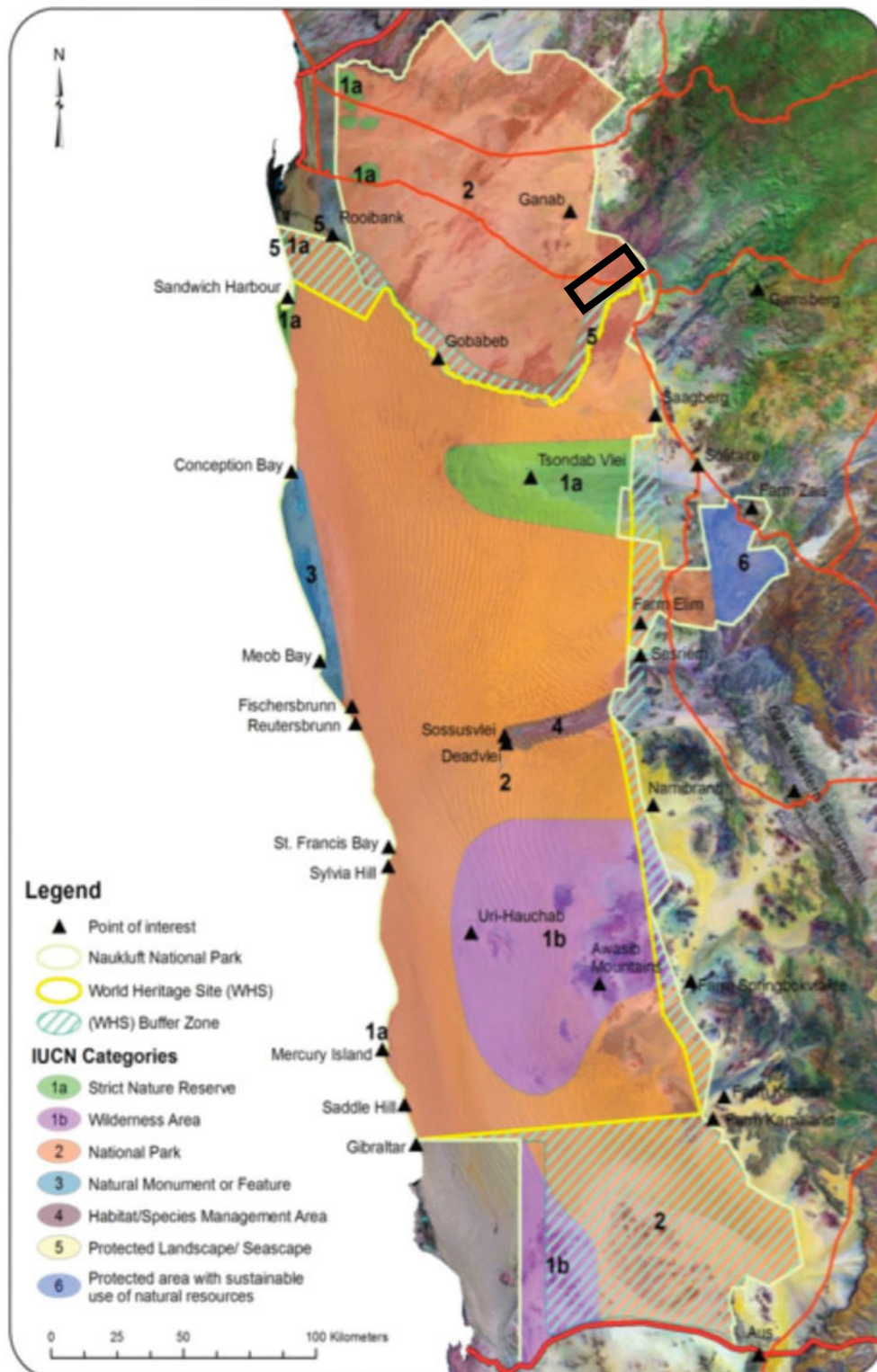


Figure 7: NNP zoning map

- **Local occurring flora.**

The local occurring vegetation observed during the site screening include succulent dwarf shrubs & bushes and herbaceous grass species such as *Commiphora Saxicola*, *Euphorbia ingens*, *Pteronia pomonae*, *zygophyllum*, *Ectadium latifolium*, *Salsola dwarf*, *Aloidendron dichotomum*. Other species such as *Anna tree/Anna boom*, *Combretum imberbe* (Lead wood), and *Acai erioloba* forms part of the riparian vegetation.

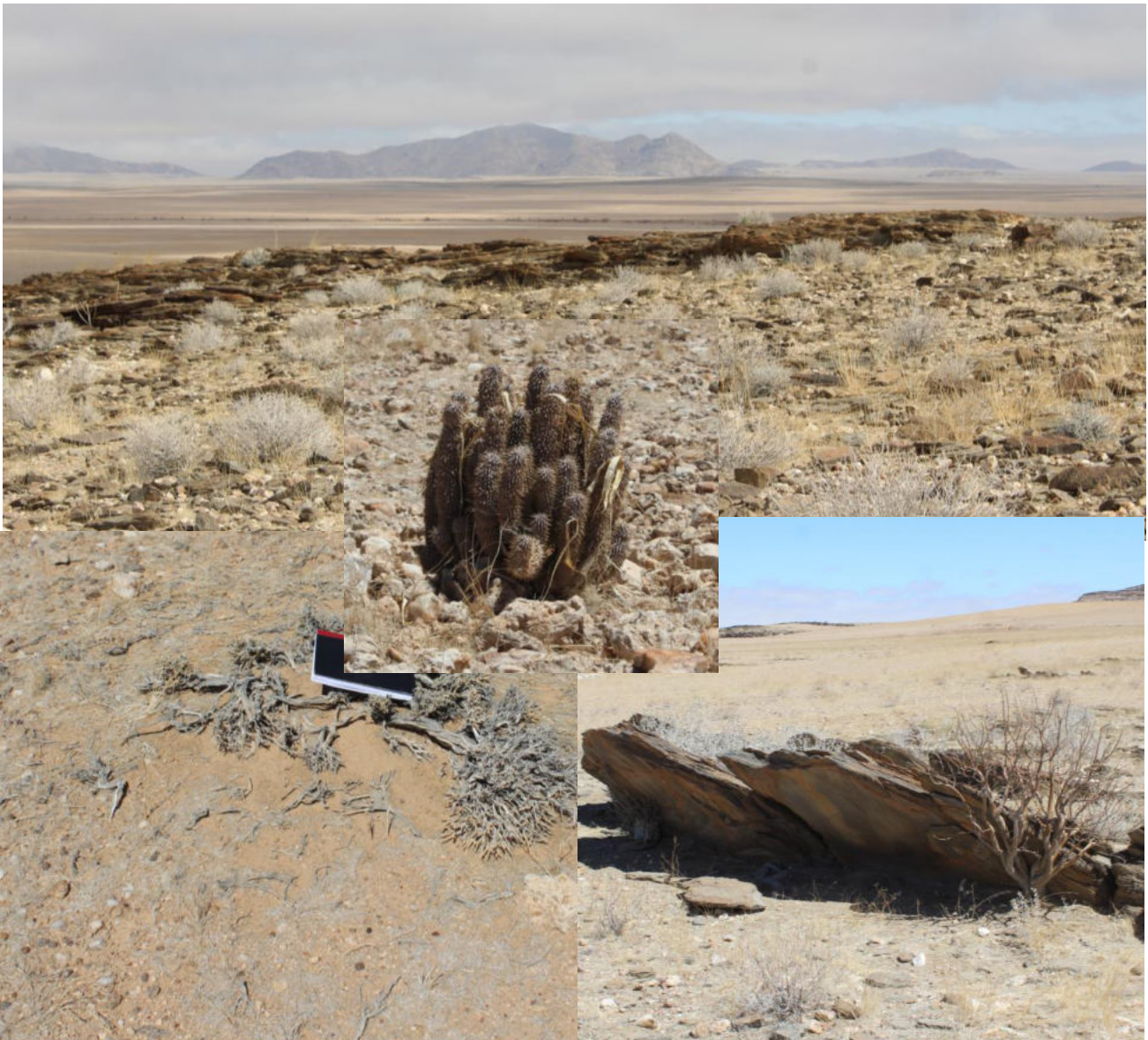


Figure 8 Flora on site

According NBRI, most of the species that are known to occur on the area are endemic are five protected flora species such as *Aloe hereroensis*, *Faidherbia albida*, *Maerua schinzii Pax*, *Moringa ovalifolia*, *Sterculia Africana*. There is also *Eremiolirion amboense* which is rare and near threatened. NBRI also recommended that species of concern be fully identified and that they be cordoned off or relocated if found in the target areas.

- **Local occurring fauna and their habitats.**

The NNP area provides a sanctuary to a variety of wildlife, avifauna, which includes endangered on near threatened species as presented in Table 1 below. Information on the fauna species known to occur onsite were obtained from the NNP Management Plans and MEFT reports. The site visit was also conducted to explore the different habitats, animal corridors and settlements as presented in Figure 9 below.

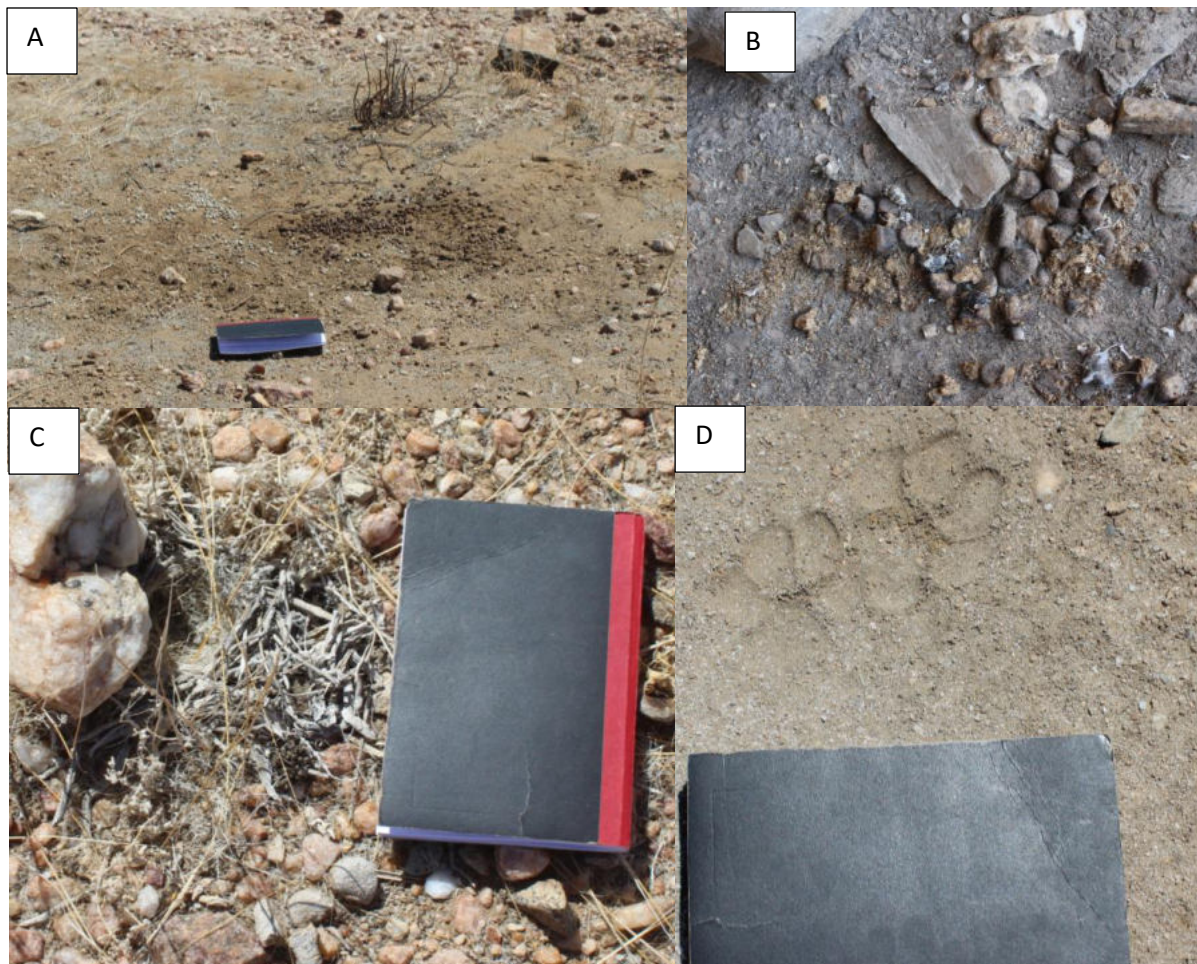


Figure 9: Proof of animal presence in the area

A – Zebra dust bath

B- Zebra dugs

C- Ground bird nest

D- Animal footprint (brown hyena)

The local fauna population is presented in the Table below, it consists of a large number of mammals most of which are protected in the park including Black rhino that was reintroduced to their former range in 2007 and over 200 avifauna species of which some habitat in the mountain pools, desert plains, river washes, and some migrate between these habitats.

**Table 1: Locally occurring fauna.**

Main category	Types
<b>Mammals</b>	Leopard, Kudu, Oryx, Ostrich, Springbok, Steenbok, Jackal, Klipspringer. Brown hyaena Hartmann's mountain zebra, Giraffe, Gemsbok Caracal Cheetah
<b>Reptiles</b>	Snakes, Geckos, Lizards Chameleons, Tortoise
<b>Amphibians</b>	<i>Pyxicephalus adspersus</i> (near threatened but is widely spread across Namibia)
<b>Birds</b>	Owls, Swift birds Rüppell's parrot, Rosy-faced lovebirds Monteiro's hornbills. Raptors Black eagle, Black-breasted snake-eagle, Booted eagle, Lanner falcon.
<b>Ground burrowing and small animals</b>	Squirrels, Rats & Mice, Rodents, Insects and Scorpions etc.

### 4.2.3 Hydrogeological setting

The geology of the EPL area is dominated by massive mica schists of the Kuiseb Formation of the Pan-African Damara Orogen. No mineralization or mineral occurrences are known within EPL7170. However, the EPL is underlain by the Matchless Amphibole belt, which hosts copper (Cu) and gold (Au) mineralization at places along the belt. To broaden the management process, the country is divided into twelve hydrogeological regions based mainly on geological structure and groundwater flow as presented in Figure 10 below.

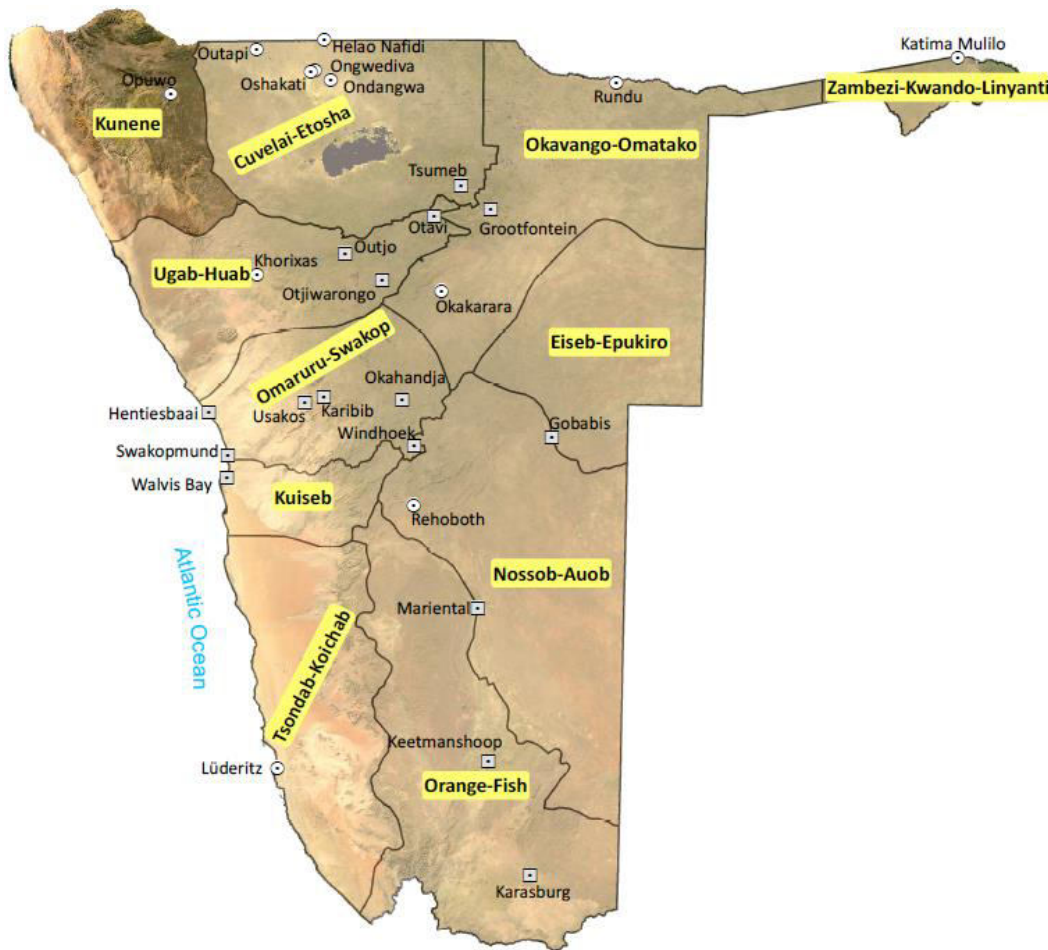


Figure 10: Hydro-geological map of Namibia (Source: IWRM, 2010)

The NNP is located in the middle of the Kuiseb River Basin with Kuiseb River as the main feature flowing westward towards the Atlantic Ocean. Groundwater is the main source of water in the NNP area with approximately 300 farm dams on the upper basin (IWRM, 20210).



## 5. LEGISLATIVE FRAMEWORK

### 5.1 Environmental management requirements

The Environmental Management Act No.7 of 2007 and the Environmental Assessment Policy for Sustainable Development and Environmental Conservation (1995) set the guiding policy/legal framework for environmental management in Namibia. The proposed activities trigger activities listed under the EMA Regulations of 2012, thus cannot be undertaken without an EIA being conducted and an ECC being obtained. The proposed exploration activities on EPL7170 will trigger the following listed activities.

- **Section 2: Waste management, treatment, handling and disposal.**
  - 2.1 The construction of facilities for waste site treatment or waste and disposal of waste
  - 2.2 Any activity entailing a scheduled process referred to in the atmospheric pollution prevention Ordinance of 1976.
  - 2.3 The import, processing, use and recycling, temporary storage, transportation, or export of waste.
  
- **Section 3: Mining and quarrying activities**
  - 3.1 The construction of facilities for any process or activities which requires a license, right or other form of authorization, and the renewal of a license, right or other form of authorization, in terms of the Minerals (Prospecting and Mining act), 1992.
  
  - 3.2 Other forms of mining or extraction of any natural resources whether regulated by law or not.
  - 3.3 Resource extraction, manipulation, conservation, and related activities.
  
  - 3.5 The extraction of peat.
  
- **Water resource developments**
  - 8.1 The abstraction of ground or surface water for industrial or commercial purposes.
  
- **Hazardous substance treatment, handling, and storage**
  - 9.1 The manufacturing, storage, handling, or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.
  
  - 9.4 The storage and handling of dangerous goods, including petrol, diesel, liquid petroleum gas or paraffin, in containers with a combined capacity of more than 30 cubic meters at any one location.

## 5.2 Mineral rights in Namibia

The Minerals (Prospecting and Mining) Act 33 of 1992 provides the overarching legal control of rights related to reconnaissance, prospecting, mining sale/disposal in Namibia, the following mining rights are applicable (Source: MME, 2010).

- **Non-Exclusive Prospecting Licence (NEPL):** This is a gateway licence to pegging mining claims but does not permit the holder exclusive rights for any specific mineral group e.g., semi-precious stones or area of mining.
- **Exclusive Prospective Licence (EPL) (Section 67 -76)** An EPL is meant for detailed investigations such as geological mapping, ground geophysics, geochemical sampling, trenching, drilling, bulk sampling, trial mining, etc. It is the most common type of mineral license issued by the Ministry of Mines and Energy. In fact, more than 70% of the workload which the Mining Commissioner's office undertakes due to licensing related activities emanate from EPLs and EPL applications.
- **Mining Claim (MC):** gives rights to prospect and mine. It must be registered within 21 days from the date on which such claim is pegged. Procedures for the application of MCs are detailed on Section 16-45 of the Minerals (Prospecting and Mining) Act 33 of 1992.
- **Mining License (ML) (Section 90-101)** After a successful exploration program, an EPL holder may want to start mining activities. In this case, an EPL Holder may to apply for a mining license. Depending on the deposit size and the scale of production, a mining license may be issued for a period not longer than twenty-five (25) years. The annual fee depends on the projected annual turnover.
- **Reconnaissance Licence (RL) Section 58-66** A reconnaissance license is used to conduct regional investigations such as airborne geophysical surveys and analysis of satellite images. Usually, it covers a large area e.g. 1 million Ha. A RL issued for six (6) months after which, the holder of a RL should ideally be in a position to apply for an Exclusive Prospecting Licence within the area previously covered by the RL. The application fee for a RL depends on the size of the area (N\$500/quarter of a degree square).
- **Mineral Deposit Retention License (MDRL) (Section 77 -89)** After conducting exploration under an EPL, the EPL holder may find a deposit but there could be certain circumstances that prevent such EPL holder from taking the project to mining. These circumstances include: the commodity price, lack of infrastructure or poor extraction technologies at the time.

### 5.3 Applicable national legislations

One of the most important components of an environmental assessment process is the review of applicable and relevant legislations. Below is a review of relevant legislations and applicable provisions in respect of the proposed exploration activities.

**Table 2: Applicable National Legislation**

LEGISLATION	PROVISIONS APPLICABLE TO SSMs ACTIVITIES	IMPLEMENTING AGENCY
Namibian Constitution	The legislative and regulatory foundation for protection and management of the environment and its natural resources is governed by the Namibian Constitution. Article 95(i) of the constitution clearly emphasizes the promotion of the welfare of the people, whereby <i>the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future.</i>	<b>GRN of Namibia</b>
Environmental Management Act of 07 of 2007	The purpose of this Act is to promote the sustainable management of the environment and the use of natural resources by establishing principles for decision-making on matters affecting the environment; to provide for a process of assessment and control of projects which may have significant effects on the environment; and to provide for incidental matters. The Act also provides procedures for adequate public participation during the environmental assessment process for the interested and affected parties to voice and register their opinions and concern about the proposed project.	<b>Ministry of Environment, Forestry and Tourism</b>
National Forestry Act of 2001	Provide for the establishment of a Forestry Council and the appointment of certain officials; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires; to repeal the Preservation of Bees and Honey Proclamation, 1923 (Proclamation No.1 of 1923), Preservation of Trees and Forests Ordinance, 1952 (Ordinance No. 37 of 1952) and the Forest Act, 1968 (Act No. 72 of 1968) and to deal with incidental matters  Deforestation of natural forests has important implications for soil erosion, biodiversity loss and global warming. <i>This Forest Act 12 of 2001 requires that tree species and any vegetation within 100m from a watercourse may not be</i>	<b>Ministry of Environment, Forestry and Tourism</b>

	<p><i>removed without a permit (S22 (1)).</i></p> <p>The Act also prohibits the removal of and transport of various protected plant species. The Act further requires any project activity that will result in clearance of certain forests to obtain a forest permit beforehand.</p>	
Public Health and Environmental Act of 2015	<p>Section 119 of this Act prohibits the existence of a nuisance on any land owned or occupied. The term nuisance is important for the purpose of this EIA, as it is specified, where relevant in Section 122 as follows:</p> <ul style="list-style-type: none"> <li>a) any dwelling or premises which is or are of such construction as to be injurious or dangerous to health or which is or are liable to favour the spread of any infectious disease.</li> <li>b) any dung pit, slop tank, ash pit or manure heap so foul or in such a state or so constructed as to be offensive or to be injurious or dangerous to health.</li> <li>c) any area of land kept or permitted to remain in such a state as to be offensive, or liable to cause any infectious, communicable, or preventable disease or injury or danger to health; or</li> <li>d) Any other condition whatever which is offensive, injurious, or dangerous to health.</li> </ul> <p>Furthermore, in terms of Section 8 of the Public Health Proclamation 16 of 1936, where a Regional authority is of the opinion that a nuisance is seriously offensive or a serious menace to health, it may serve a notice on the owner or occupant of the nuisance to immediately remove the nuisance. Failure to abide by this provision is an offence.</p>	<b>Ministry of Health and Social Services</b>
Minerals (Prospecting and Mining) Act 33 of 1992	<p>To provide for the reconnaissance, prospecting, and mining for, and disposal of, and the exercise of control over, minerals in Namibia; and to provide for matters incidental thereto.</p> <p><i>Part 1: Rights in relation to the minerals</i></p> <p>Subject to any right conferred under any provision of this Act, any right in relation to the reconnaissance or prospecting for, and the mining and sale or disposal of, and the exercise of control over, any mineral or group of minerals vests, notwithstanding any right of ownership of any person in relation to any</p>	<b>Ministry of Mines and Energy</b>

land in, on or under which any such mineral or group of minerals is found, in the State.

Also deals with prohibition on carrying on certain operations without licence, and transfer of certain licences or grant, cession, or assignment of interests in such licences, and joinder of persons as joint holders of such licences or interests.

*Part VI: Rights of holders of non-exclusive prospecting licences.*

(a) to carry on prospecting operations on any land for any mineral or group of minerals.

(b) to remove any mineral or group of minerals other than a controlled mineral or sample of such mineral or group of minerals, for any purpose other than she or disposal, from any place where it was found or incidentally won in the course of prospecting operations referred to in paragraph (a) to any place within Namibia.

(c) with the permission of the Commissioner previously obtained generally or in every case in writing and subject to such conditions as may be determined by the Commissioner or subject to be conditions of an exemption granted under section 137 –

**Section 109 (1): Minerals Ancillary Rights.** The holder of NEPL or MC may obtain rights.

a). to enter upon land to carry on operations authorized by such licence on such land.

(b) to erect or construct accessory works on any land for purposes of such operations.

(c) to obtain a supply of water or any other substance in connection with such operations.

(d) to dispose of water or any other substance obtained during such operations.

(e) To do anything else in order to exercise any right conferred upon him or her by such licence.

<p>Pollution Control and Waste Management Bill of 1999</p>	<p>This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. The bill provide framework for a multitude administration on pollution control and waste management in the country. Each authority identified by the bill shall play its respective roles.</p> <p><u>In addition, the National Solid Waste Management Strategy</u></p> <p>The Ministry of Environment and Tourism (MET) has recognised the urgent need to improve solid waste management in Namibia. This National Solid Waste Management Strategy is important to ensure that the future directions, regulations, funding and action plans to improve solid waste management are properly co-ordinated and consistent with national policy, and to facilitate co-operation between stakeholders.</p>	<p><b>Ministry of Environment, Forestry and Tourism</b></p>
<p>Atmospheric Pollution Prevention Ordinance No. 11 of 1976</p>	<p>This Ordinance generally provides for the prevention of the pollution of the atmosphere and for matters incidental thereto. The Ordinance deals with administrative appointments and their functions; the control of noxious or offensive gases; atmospheric pollution by smoke, dust control, motor vehicle emissions; and general provisions.</p> <p>Part IV of this ordinance deals with dust control. The Ordinance is clear in requiring that any person carrying out an industrial process which is liable to cause a nuisance to persons residing in the vicinity or to cause dust pollution to the atmosphere, shall take the prescribed steps or, where no steps have been prescribed, to adopt the best practicable means for preventing such dust from becoming dispersed and causing a nuisance.</p> <p>Of applicability to the proposed activities, is dust generated by vehicles or equipment as well as dust generated during excavation. The risk of dust generation is high at the envisaged site. This deals with air pollution as it affects occupational health and safety, and no consideration is given to the natural environment.</p>	<p><b>Ministry of Environment, Forestry and Tourism</b></p>
<p>Soil conservation Act 76 of 1969</p>	<p>The objectives of the Soil conservation Act 76, 1969 are to make provision for the combating and prevention of soil erosion, and for the conservation, protection and improvement of the soil, the vegetation and the sources and resources of the water supplies.</p>	<p><b>Ministry of Agriculture, Water and Land Reform</b></p>

	<p>Part II, deals with soil conservation works and it further states that in section 4(1) The Minister may by means of a direction order the owner of land to construct the soil conservation works referred to in such direction either on land belonging to such owner or on land belonging to another person, in such manner and within such period as may be mentioned in such direction, if the Minister is of the opinion that the construction of such soil conservation works is necessary in order to achieve any object of this Act in respect of the land belonging to such owner.</p> <p>Of relevance is the fact that the area has very little disturbances. The proponent should ensure that when new areas will be mined, all the topsoil should be stored separately to ensure the seedbeds are conserved and can be used when rehabilitation of the area is conducted after exploration has been completed.</p>	
Hazardous Substance Ordinance 14 of 1974	<p>This Ordinance provides for the control of toxic substance and thus also relevant for pollution control. It covers for the manufacturing, sale, use, disposal, dumping, importing, and exporting of hazardous waste.</p> <p>Of relevance to the proponent are the use of Blasting Abrasives and any other substance or mixture of substances classified under Group I Group II or Group III of hazardous substances.</p> <p>The sale of Group I, and use, operation, application, and installation of Group III hazardous substances are subjected to the provisions of subsection (2).</p>	<b>Ministry of Environment, Forestry and Tourism</b>
Water Resources Management Act 24 of 2004	<p>The Water Resources Management Act (Act 24 of 2004) governs the quality of both fresh- and seawater used for industrial purposes. Restrictions imposed on users are as follows: Any water used for industrial purposes must be purified to standards prescribed by the Minister. Purified or treated effluent must be returned to the source from which it was originally drawn. This may, however, be changed subject to ministerial intervention.</p> <p>Part 9-10 deals with the Water Supply and Licensing of Water Abstraction. The Ministry of Agriculture, Water and Land Reform has the overall responsibility to regulate, control, manage and regulate water resources and to supply water to rural areas through its Directorate of Water Supply and Sanitation Coordination (DWSSC). The Namibia Water Cooperation (NamWater) is responsible for bulk water supply from primary water sources (dams, aquifers, rivers etc.) to</p>	<b>Ministry of Agriculture, Water and Land Reform</b>

	<p>communities whereas private consumers (commercial farmers, mines, tourism operators etc.) have private boreholes for water abstraction.</p> <p>Abstraction of water for domestic use. Section 38 (1) Subject to subsection (3), a person who abstracts water from a water resource for own domestic use is exempted from the requirement for a licence to abstract and use water.</p> <p>Part 13 (70) of the WRA states that no person shall discharge or cause to discharge any substance industrial effluent or any other liquid or substance other than soil water or wastewater or unpolluted water for the purpose of testing the function of the drainage installation or any part thereof during or upon completion construction.</p> <p>Any occupier of a premise from which industrial effluent is discharge into a public sewer, shall: provide overflow detection devices, pre-treatment where necessary to comply with regulations and ensure that no prohibited discharges enter public sewer systems.</p> <p>Since connection to public sewer is not an option in this case, The proponent, shall before occupation make provision for a conservancy tank or a septic tank and absorption field on site. Sanitary systems must be constructed and located in such a way as to prevent a causation of any nuisance or unhygienic or offensive conditions.</p> <p>Sewage or other prohibited discharges should not enter storm water drains or roads. The occupier of any premises shall provide for facilities necessary to prevent any discharge, leakage or escape of such liquids onto any street or any premises or into any storm water drains or watercourse. No person shall cause or permit any storm water to enter any drainage installation on any premises. Inspections may be carried out at any time by the Department for Water Affairs (or a nominee). The Secretary has the power to suspend or restrict operations which may be causing water pollution and to impose certain conditions on the offender.</p>	
<p>Petroleum Products and Energy Act 13 of 1990</p>	<p>Regulations made under the Petroleum Products and Energy Act 13 of 1990 states that: A license or certificate is required for purposes of storing or keeping fuel in a quantity of 200 liters or less in any container kept at a</p>	<p><b>Ministry of Mines and Energy</b></p>



	<p>place within a local Authority area or fuel in a quantity of 600 liters or less in any container kept at a place outside a local authority area.</p> <p>These regulations apply, in the case of an above-ground tank, to a storage tank with a capacity of 2,200litres or more and in the case of all below-ground tank, to a capacity with a capacity of 4,560 liters or more. Every license-holder or certificate holder shall about any replacement or installation of a storage tank, or a remaining storage tank, which this regulation applies, and which is in the possession of such license-holder or certificate holder, annually not later than 28 February, duly complete Form PP/10 as set out in Annexure B and shall submit such form together with the information requested therein by the Ministry of Mines and Energy.</p>	
National Heritage Act 27 of 2004	<p>The National Heritage Act 27 of 2004 provide provisions for the protection and conservation of places and objects of national heritage significance, and to register places and objects under that framework. The proponent must ensure that should any archaeological objects defined in the Act be found while exploration operations are ongoing, it will be communicated to the National Heritage Act.</p> <p>Cultural heritage is defined as “<i>monuments, [as] architectural works (...), cave dwellings and combinations of features, (...) [but also] sites, as works of man or the combined works of nature and man, and areas including archaeological sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view.</i>” Natural heritage is “<i>natural features (...), geological and physiographical (...) [and] natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation and natural beauty.</i>”</p> <p>Heritage sites, whether included in UNESCO list (World Heritage Site, WHS), are composed of cultural and natural elements of aesthetic and scientific value.</p> <p>Natural and cultural capital are of great scientific, aesthetic and tourism value. Multiple groups of users compete for these assets and resources. They have different interests at stake, and this leads to conflicts over use of resources.</p>	<b>National Heritage Council (NHC)</b>

<p>Labour Act 11 of 2007</p>	<p>To establish a comprehensive labour law for all employers and employees; to entrench fundamental labour rights and protections. Regulate basic terms and conditions of employment; ensure the health, safety, and welfare of employees; to protect employees from unfair labour practices; to regulate the registration of trade unions and employers' organisations; to regulate collective labour relations; to provide or the systematic prevention and resolution of labour disputes.</p> <p>Some of the notable Sections under this Act are.</p> <p>Health and Safety Procedures Section 17 (1) The employer shall prepare any health and safety procedure referred to in sub regulation (1) in consultation with the work-place safety committee concerned.</p> <p>Section 21. (1) Any person who intends to commence any mining operation shall give 30 days' notice of such intention to the Minister.</p> <p>Section 22. (1) In the event of an accident or dangerous occurrence in or in connection with a workplace, including a mine, or if an employee dies, or suffers a serious injury because of such an accident or dangerous occurrence, the employer shall notify and report such accident to the Chief Inspector of Labour of the area.</p> <p>Notification of Occupational Diseases, Section 23. If a medical practitioner finds that any person is suffering from any occupational disease listed in Annexure A.2(1), or of any other disease that he or she believes was caused by that person's current or past employment, he or she shall immediately and in the form of Form OD. 1, report this fact to the Chief Medical Officer of Occupational Health and Safety.</p> <p>It shall be an unfair dismissal, or unfair disciplinary action, in terms of section 45 by an employer if such employer terminates the services of, or takes disciplinary action against, such employee, if such employee has contracted an occupational disease listed in Annexure A.2 (1), or any other disease, because of his or her past or present employment with such employer.</p>	<p><b>Ministry of Labour and Employment Creation</b></p>
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	<p>Section 210, states that an employer shall ensure that an employee wears or uses, to the satisfaction of an inspector, suitable and adequate personal protective equipment. All employment issues should be handled in accordance with relevant Sections of the Labour Act.</p>	
Human Wildlife Conflicts Policy	<p>The policy defines Human Wildlife Conflicts as Human “conflicts between wild animals and humans. This ranges from the destruction of crops and water installations to loss of livestock, homes and in some cases loss of human lives. Human Wildlife Conflict occurs throughout Namibia on communal as well as freehold land and involves a variety of species. The main problems occur on the land where the most elephants and predators are found outside protected areas and where people are least able economically to bear the costs of damage and losses.</p> <p>The Policy objectives is to manage human wildlife conflict in a way that recognizes the rights and development needs of local communities, recognizes the need to promote biodiversity conservation, promotes self-reliance and ensures that decision-making is quick, efficient, and based on the best available information.</p> <p>The Revised National Policy on Human Wildlife Conflict Management is based on several fundamental principles as stated under Section 5.1 to 5.13.</p>	<b>Ministry of Environment Forestry and Tourism</b>
Nature Conservation Act 5 of 1996	<p>The Act provides amendments to various Sections of the Nature Conservation Ordinance of 1975. One such amendments was the requirements to be complied with for the recognition of conservancy committees and the declaration of conservancies, and any restrictions and conditions to which a conservancy committee shall be subject.</p> <p>The Act provides for and promote the maintenance of ecosystems, essential ecological processes, and Namibia biodiversity and to promote the mutually beneficial co-existence of humans with wildlife as well as to give effect to Namibia’s international obligations to legal instruments such as the Convention on Biological Diversity.</p> <p>The Act also recognizes that biodiversity must be maintained, and where necessary, rehabilitated and that essential ecological processes and life support systems must be maintained.</p> <p>According to Section 17(l) of the Nature Conservation ordinance 4 of 1975, The Minister shall control, manage and maintain game parks and nature reserves. (2) The Minister may within a game park or a nature reserve</p>	<b>Ministry of Environment Forestry and Tourism</b>

	<p><b>(b) take such steps as will ensure the safety of the animal and plant life and fisheries in the game park or nature reserve and the conservation of the game park or nature reserve and the animals, vegetation and fish therein in a natural state;</b></p> <p><b>(c) reserve areas as breeding places for animals or fish or nurseries for trees, shrubs, plants and flowers and set aside zones for such purposes as it may deem necessary or desirable;</b></p>	
<p>Explosives Act 1956 Act 26 of 1956</p>	<p>Provides for authorization of certain group of explosives, manufacture, storage, use and licensing of explosives.</p> <p><u>Authorized explosives in Namibia</u>  <i>gunpowder, nitro-glycerine, dynamite, guncotton, blasting powders, fulminate of mercury or of other metals, coloured fires, and every other substance, whether like those herein mentioned or not, which is used or manufactured with a view to produce a practical effect by explosion or a pyrotechnic effect.</i></p> <p>Most of the products listed here are old fashioned and have been replaced with modern generation products such as emulsions, watergels and cartridge products.</p> <p><u>Prohibition of storage or possession of unauthorized explosives save in accordance with section three.</u>  Section (1) states that No person shall keep, store or be in possession of any unauthorized explosive unless it has been manufactured as provided by sub-section (1) of section three and is kept, stored or possessed in such manner and in such quantities as have been approved in writing by an inspector.</p> <p><u>Prohibition of storage of authorized explosives except in licensed premises</u>  No person shall keep, store or be in possession of, any authorized explosive in or on any premises unless authorized thereto by a permit issued by an inspector and the explosive be kept in quantities not exceeding 500 kilograms in weight and be stored in an isolated place approved by an inspector and under conditions prescribed in writing by an inspector.</p> <p><u>Licence necessary to deal in explosives.</u>  (1) No person, other than the manufacturer, shall sell or deal in any explosive unless he is in possession of a licence granted under the regulations, which</p>	<p><b>Ministry of Safety and Security</b></p>

	shall be in addition to any other licence which may be required in terms of any other law.	
Controlled Wildlife Products and Trade Act 9 of 2008	<p>Aim: To provide for the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; and to provide for incidental matters. Of relevance to the proposed activities are.</p> <p>Section 4: Possession of and dealing with controlled wildlife products.  (1) Any person who -  (a) possesses any controlled wildlife product the possession of which is unlawful in terms of Schedule 1.  (b) deals in any controlled wildlife product if the dealing therein is unlawful in terms of Schedule 1.  (c) manufactures anything from a controlled wildlife product if such manufacture is unlawful in terms of Schedule 1., commits an offence unless he or she has been issued with a permit contemplated in subsection (3) authorising the act in question and unless he or she complies with the conditions specified in the permit.</p> <p>SCHEDULE 1: CONTROLLED WILDLIFE PRODUCTS (Section 1).  Subject to paragraph 2 and 3 no person may possess, manufacture any object from, deal in, import into, or export from Namibia any tusk, horn, head, ear, trunk, skin, tail or foot or any part thereof, of any elephant or rhinoceros, or any part of any species or other specimen mentioned in Appendix I unless the action in question is authorised by a permit.</p>	<b>MEFT Directorate of Scientific Services (DSS)</b>
Management Plan Namib Naukluft National Park	<ul style="list-style-type: none"> <li>-Management of natural resources</li> <li>-Regional conservation, park neighbourhood, and resident relations</li> <li>-Establish land use zonation</li> <li>-Tourism Development Areas (TDA)</li> </ul>	<b>MEFT Directorate of Wildlife and National Parks (NNNP)</b>

## **5.4 Legislation of international significance**

### **a) Convention on wetlands and biological diversity**

The Convention on Wetlands of International Importance, especially as Waterfowl Habitat of 1971 (Ramsar) aims primarily to prevent the loss of wetlands, to promote the wise use of these, and to give special protection to listed wetlands. The Convention stresses a habitat-type approach rather than a species-specific approach.

The primary goal of the Convention on Biological Diversity of 1992 is the conservation of biodiversity. The causes of threats to biodiversity should be anticipated and prevented, and the precautionary principle should be applied. Parties to the convention are obliged to:

- Establish a network of protected areas.
- Create buffer areas adjacent to these protected areas using environmentally sound and sustainable development practices; and
- Rehabilitate degraded habitats and populations of species.

### **b) Convention on Combat Desertification (CBD)**

The convention recognized that the conservation of biological diversity is “a common concern of humankind” and is an integral part of the development process. The agreement covers all ecosystems, species, and genetic resources. It links traditional conservation efforts to the economic goal of using biological resources sustainably. It sets principles for the fair and equitable sharing of the benefits arising from the use of genetic resources, notably those destined for commercial use.

#### **The objectives of the CBD are:**

- The conservation of biological diversity,
- The sustainable use of its components and
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, considering all rights over those resources and to technologies, and by appropriate funding.

Conservation of species and ecosystem to combat the increasing rate of loss of biological diversity is one of Namibia’s challenges due to a heavy reliance on natural resources and ecosystem goods and services. In the interest of the welfare of the people, the state has adopted policies aimed at maintaining ecosystems, ecological processes, and biodiversity for the benefit of present and future generations. Direct impact on biodiversity is minimal but a precautionary approach is necessary to ensure those disturbances are avoided.

## 6. ASSESSMENT OF ENVIRONMENTAL IMPACTS

### 6.1 Rating of environmental impacts

A summary of the potential impacts associated with the proposed exploration activities are presented in this chapter, as well as the suggested mitigation measures required to ensure impacts are managed effectively. Within the accepted broad definition of the term “environment” that applies to Environmental Impact Assessments, it is required to assess potential impacts of both socio-economic and biophysical aspects.

**Table 3: Assessment criteria**

CRITERIA		DESCRIPTION			
<b>EXTENT</b>	<b>National (4)</b> The whole country	<b>Regional (3)</b> Erongo region and neighbouring regions	<b>Local (2)</b> Within a radius of 2 km of the exploration site	<b>Site (1)</b> Within the exploration site	
<b>DURATION</b>	<b>Permanent (4)</b> Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	<b>Long-term (3)</b> The impact will continue/last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter.	<b>Medium-term (2)</b> The impact will last for the period of the operation phase, where after it will be entirely negated	<b>Short-term (1)</b> The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the operation phase	
<b>INTENSITY</b>	<b>Very High (4)</b> Natural, cultural, and social functions and processes are altered to extent that they permanently cease	<b>High (3)</b> Natural, cultural, and social functions and processes are altered to extent that they temporarily cease	<b>Moderate (2)</b> Affected environment is altered, but natural, cultural, and social functions and processes continue albeit in a modified way	<b>Low (1)</b> Impact affects the environment in such a way that natural, cultural, and social functions and processes are not affected	
<b>PROBABILITY</b>	<b>Definite (4)</b> Impact will certainly occur	<b>Highly Probable (3)</b> Most likely that the impact will occur	<b>Possible (2)</b> The impact may occur	<b>Improbable (1)</b> Likelihood of the impact materialising is very low	
<b>SIGNIFICANCE</b>	Is determined through a synthesis of impact characteristics. Significance is also an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.				

**Table 4: Impacts significance rating**

<b>Low impact</b>	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction, or operating procedure.
<b>Moderate impact</b>	Mitigation is possible with additional design and construction inputs.
<b>High impact</b>	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
<b>Very high impact</b>	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a “very high impact” is likely to be a fatal flaw.
<b>Type</b>	Denotes the perceived effect of the impact on the affected area.
<b>Positive (+)</b>	Beneficial impact
<b>Negative (-)</b>	Deleterious or adverse impact.
<b>Neutral (/)</b>	Impact is neither beneficial nor adverse
It is important to note that the status of an impact is assigned based on the status quo should the project not proceed. Therefore, not all negative impacts are equally significant.	
<p><b>Significance Rating Scale</b></p> <p>Points 1-4    Insignificant/low impact</p> <p>Points 5-8    Significant /Moderate</p> <p>Points 9-12    Very significant/High impact</p> <p>Points 13-16    Highly significant /Very high impact</p>	



## 6.2 Anticipated biophysical impacts.

Below are possible negative impacts of the proposed exploration activities on the biophysical environment. The significance of each impact has been rated before and after mitigations measures.

### ➤ Impact to flora

The proposed exploration activities i.e., drilling and excavation will cause loss of vegetation through vegetation clearance, trampling, generation of fugitive dust, soil disturbance. These impacts will be expected to be less during the less invasive programme and sever during the more invasive phase i.e., drilling.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	2	2	2	2	8	6

### Mitigation measures

- Appoint a Botanist to conduct a search rescue mission within the target area with abundance of species of concerns as listed on Appendix A. This should be done in collaboration MEFT.
- Areas with high abundance of species of concerns should be considered as No-go zones and must be avoided at all costs.
- Implement the Search and Rescuer Plan (SRP) as outlined in the Ecological study
- Disturbances should be limited to the mine footprint area.
- Existing track roads should be used as far as possible. Creation of new access roads (if need be) should be done in consultation with MEFT-TKSNP Lüderitz office
- Fireplaces should be secured and must be under control
- Ensure progressive rehabilitation of the disturbed area

### ➤ Disturbance to the local fauna

Potential impacts to the local fauna will result from habitat fragmentation, driving, generation of nuisance such as noise, dust, vibration etc. Un-rehabilitated excavations may also pose risk of falling in and unsightly for animals. The interaction of wildlife and the exploration team could also pose threat of human-wildlife conflicts (HWC).

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	2	5	3

### Mitigation measures

Poaching of both small and large wildlife is prohibited and is a punishable act. Rehabilitation of the disturbed areas should be encouraged as far as possible. Adhere to the minimum driving speed of 40km/hr within the park. The possession of and dealing with controlled wildlife products is prohibited under the Controlled Wildlife Products and Trade Act 9 of 2008. All human-wildlife conflicts should be reported to MEFT and should be handled in accordance with the HWC policy.

➤ **Visual impacts**

The area is consisting of different landscapes which serve as source of attractions and landmarks in the area. Exploration activities such as excavations, presence of machinery, signage and flagging will lead to many surface disturbances of the natural landscapes, reduce the aesthetic view thus, degrading the sense of the place.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	2	3	2	2	9	7

Mitigation measures

Important local viewpoints and landscape features should be identified and spared from exploration activities as far as possible. Blasting should be carried out by experienced and registered blasting companies only.

➤ **Ecological degradation**

Ecological settings refer to the processes and interconnectedness which support a variety of life and functioning of the natural ecosystem. Ecological settings are vital for sustaining life of trees, wild animals, livestock, and people. The exploration activities are likely to cause fragmentations of the natural habitats, disturb soil profile, pollute the environment, and disrupt ecological processes and the entire ecosystem functioning. Moreover, the exploration activities will likely cause hydrological disturbances and localised flooding if excavations are not properly positioned and left uncovered for a long time.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	2	2	2	2	8	6

Mitigation measures

- ✓ Areas with abundance of species of concerns should be considered as no-go areas and should be avoided.
- ✓ Avoid trampling of highly vegetated areas by making use of existing routes
- ✓ Ensure progressive rehabilitation of the disturbed areas as far as possible.

➤ **Soil erosion and contamination**

Soil disturbances occurs through the removal of topsoil and overburden during the excavation process. De-vegetation of the area due to exploration will increase surface run-off soil and suspended pollutants in nearby streams. Other impacts on soil are the possible contamination from spillage, leaks from machineries.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	2	2	7	5

Mitigation measures

The topsoil should be properly and securely stockpiled and not be mixed with overburdens and should be backfilled after exploration. Soil conservation measures such as berms, gabions should be used on-site to help reduce erosion and any erosion incidence should be contained as soon as possible.

Vehicles and Equipment with oil leaks should be properly maintained. Spillage or leaks should be contained, and contaminated soil should be carefully removed and disposed of at the nearest dumpsite.

➤ **Disturbance to local geology**

The proposed activities are likely to cause unintended disturbances to the local geology and geomorphology.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	2	2	7	5

Mitigation measures

- ✓ The exploration activities should be conducted inline the geological report
- ✓ Blasting should be carried out by experienced and registered companies

➤ **Increased water demand**

Due to the limited availability of freshwater in the area, the proposed activities will increase pressure on the availability of water resources.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	2	5	3

Mitigation measures

- ✓ Water should also be used sparingly and when necessary recycled for other least essential activities such as dust suppression.
- ✓ Drill of borehole(s) in the area is subjected to an Abstraction Permit from the Directorate of Water Supply and Sanitation Coordination (DWSSC).

➤ **Contamination of surface and groundwater sources**

The impacts of excavations may influence the direct loss of stream reserve habitat, cause disturbances of species attached to streambed deposits, reduce light penetration, reduce primary production, and reduce groundwater recharge opportunities.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	1	4	2

### Mitigation measures

Care must be taken when selecting and locating the waste handling facilities. Avoid locating waste facilities in riverbeds or slope areas or area with heavy drainage. All excavations must be rehabilitated upon mine closure and all discharge must be properly disposed as per the Minerals (Mining and Prospecting Act), of 1992 and the Environmental Management Act, of 2007.

#### ➤ **Air pollution**

The major sources of air pollution are fugitive dust from excavations, loading, transportation, hauling of waste rocks, as well as wind erosion of open pits and silt heaps from the processing operation. Exposure to dust is a potential health risk because inhalation of fine dust particles can damage the lungs and lead to chronic obstructive pulmonary disease. Wind can disperse inhalable dust from the project site over settlements and farming areas that are nearby.

Another impact of dust deposition is on the environment. The most obvious effect will be observed on vegetation next to the roads or in the vicinity of the area of operations. Dust covers the surfaces of leaves, blocking stomata, reducing plant photosynthesis thus causing retard growth of local vegetation.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	2	2	1	2	7	5

### Mitigations measures

The area is already prone to strong wind conditions which often carries the exposed dune sand of the local sand plains. However, the proponent should prevent further contribution to dust emission from the operations. The first step to control dust is to identify and monitor all dust emission sources. An inventory for all dust generation sources should be established and mitigation measure from each potential source should be proposed. Proper maintenance of equipment should also be ensured at contractual basis. Visual observations and dust monitoring should be used to identify additional problem areas and quantify dust emissions levels.

Another important part of air quality management is the collection of climate data on wind direction. This is because wind patterns determine the extent and direction of dust plumes. The prevailing wind directions in the area are southerly, south-westerly, and north-easterly. Controlling of dust emission is also a legal requirement in terms of certain legislations as outlined below.

#### Legal compliance aspects

The following compliance standards are applicable to dust emission:

- The Atmospheric Pollution Prevention Act (No 45 of 1965), which is still applicable in Namibia requires that *“any person carrying out an industrial process which is liable to cause a nuisance to persons residing in the vicinity or to cause dust pollution to the atmosphere, shall take the prescribed steps or, where no steps have been prescribed, to adopt the best practicable means for preventing such dust from becoming dispersed and causing a nuisance.”*
- The Namibian Labour Act’s Health & Safety Regulations set the following limits for personal exposure over 8 hours’ time-weighted average:
  - Total particulates of **10 mg/m<sup>3</sup>**.
- The Public Health and Environmental Act 1 of 2015, requires preventing the occurrence of a health nuisance, unhygienic condition, an offensive condition, or any condition which could be harmful or dangerous to the health of a person.

➤ **Land degradation**

Land degradation is one of the most significant impacts associated with land use activities such as exploration activities. Given the limited climatic conditions of the area and sensitivity of the local vegetation, destruction and disturbances to the local fauna can lead to lose of these endemic species that could lead to a situation of land degradation of the area.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<i>Negative</i>	1	1	1	1	4	2

Mitigation measures

- Areas with abundance of species of concerns should be considered as No-go zones and must be avoided at all costs.
- Conduct a search rescue mission within the proposed mine footprint area. This should be done in collaboration with the NBRI prior to the commencement of any activity
- Implement the Search and Rescuer Plan (SRP) as outlined in the Ecological study
- Disturbances should be limited to the mine footprint area.
- Existing track roads should be used as far as possible. Creation of new access roads (if need be) should be done in consultation with MEFT-NNP
- Fireplaces should be secured and must be under control
- Ensure progressive rehabilitation of the disturbed area

➤ **Impact of airborne geophysics survey**

It is understood that the proponent intends to conduct an airborne geophysical survey over the EPL area by means of a helicopter or drone magnetic survey. This will be done using a licenced operators and the survey technique and parameters may be adjusted.

The potential impacts emanating from the proposed aerial magnetic survey will result from the use of low-flying aircraft that can have various impacts on wildlife, particularly in the areas they fly over. These impacts can vary depending on factors like the **type of aircraft, its altitude, frequency of flights, and the sensitivity of the ecosystem** in question. Some of the potential impacts of low-flying aircraft on wildlife are:

- **Disturbance and Stress:** Low-flying aircraft, especially when flying at low altitudes or making repeated passes over an area, can cause significant disturbances to wildlife. This can lead to increased stress levels in animals. In sensitive ecosystems or during critical life stages (such as breeding, nesting, or migration), disturbances can be particularly harmful.
- **Habitat Disruption:** The noise and vibrations from low-flying aircraft can disrupt the natural behaviour of wildlife. Animals may flee the area, abandon nests, or alter their daily routines to avoid the disturbances. These disruptions can affect foraging, breeding, and other essential activities.
- **Nesting and Young:** Low-flying aircraft can pose a threat to nesting birds and their young. Noise and vibrations can cause parents to abandon nests, expose eggs and chicks to predation, or lead to reduced reproductive success.

- **Physical Injury:** Low-flying aircraft can directly injure wildlife, particularly in the case of larger aircraft like helicopters. Collisions with aircraft or aircraft-related structures can harm birds and other wildlife.
- **Habitat Fragmentation:** The presence of low-flying aircraft can lead to habitat fragmentation, which can make it difficult for animals to move between different parts of their range. This can have long-term consequences for wildlife populations.
- **Behavioural Changes:** Wildlife may exhibit altered behaviours in response to low-flying aircraft, such as changes in feeding patterns, altered flight paths, or shifts in activity periods. These changes can impact the fitness and survival of individuals and populations.
- **Shifts in Population Distributions:** Over time, frequent low-level aircraft disturbances may lead to changes in the distribution of wildlife populations. Some species may move away from areas with heavy aircraft traffic, which can lead to population declines in those regions.
- **Long-term Stress and Health Effects:** Prolonged exposure to noise and disturbances from low-flying aircraft can lead to chronic stress in wildlife. Chronic stress can weaken immune systems and affect overall health, potentially making animals more susceptible to diseases and other threats.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	2	1	3	2	8	6

### **Mitigation measures**

As mentioned above, the proponent will make use of the licenced operators who are experienced in conducting similar surveys. It is understood that the similar survey was successfully conducted in the neighbouring EPLs. The approval of the proposed survey will be subjected to the approval of MEFT, and the operator will have to abide to the conditions attached to the permit. Hence, it is recommended for MEFT to establish flight restrictions and flight altitudes in areas with high wildlife sensitivity, particularly during critical times such as breeding, nesting, and migration seasons. There should also be designated no-fly zones and wildlife protection areas where aircraft are prohibited from flying at low altitudes.

In addition to the conditions to be imposed thereof by MEFT, the proponent needs to implement some strategies and practices that can help reduce the impact of aircraft on wildlife:

- *Awareness and Education:*

Promote awareness among pilots, air traffic controllers, and aviation personnel about the potential impacts of low-flying aircraft on wildlife and the importance of responsible flight practices.

- *Flight Planning and Route Optimization*

Encourage flight planners and operators to consider wildlife sensitivity when planning flight routes and scheduling flight times to minimize disturbances. Develop and utilize digital tools and eographic information systems (GIS) to identify wildlife habitats and flight corridors that avoid sensitive areas.

- *Seasonal Restrictions:*

Implement seasonal flight restrictions in areas where wildlife is particularly vulnerable, such as during breeding, nesting, and migration seasons.

- *Alternative Flight Paths:*

Establish alternative flight corridors that divert air traffic away from high-wildlife-impact zones.

- *Noise Mitigation:*

Invest in quieter aircraft technology, such as quieter engines, to reduce noise pollution and its impact on wildlife.

- *Local Engagement:*

Work with local communities, conservation organizations, and aviation stakeholders to develop and implement strategies that balance the needs of aviation and wildlife protection.

- *Communication Protocols:*

Develop communication protocols between aviation personnel and wildlife management authorities (MEFT) to report wildlife-related incidents and coordinate actions to protect wildlife.

- *Habitat Conservation and Restoration:*

Implement habitat conservation and restoration programs to protect and enhance critical wildlife habitats in the proximity of airports and flight paths.

- *Collaboration:*

Foster collaboration between aviation authorities, wildlife conservation organizations, and government agencies to ensure that wildlife considerations are integrated into aviation policies and planning.

### 6.3 Anticipated socio-economic impacts.

The proposed exploration activities are also associated with several negative impacts to the socio-economic environment. Unlike the biophysical impacts, the socio-economic impacts are likely to affect greater geographic area e.g., constituency, regional and national.

➤ **Occupational health and safety**

Employees of the exploration activities are exposed to several occupational health hazards which could result into serious health risks such as injuries, diseases, or death. The exposure to these hazards could be aggravated by risk factors such as the lack of experience & limited knowledge, nature of work and non-compliance to health safety standards. The common hazards include physical, chemical, biological, radiological, agronomical, and behavioural hazards.

➤ **Table 5: Baseline Hazard Assessment of exploration activities**

Occupational Hazard	Hazard type	Potential Risks	Likelihood (1-4)
Dust	Ergonomic	Lung diseases, skin irritation and eye damage	2
Noise	Physical	Insomnia	3
Vibration	Ergonomic	Insomnia	3
Noxious gases	Chemical	Lung diseases, cancer, respiratory diseases etc.	3
Falling rocks	Physical	Injuries, death	1
Flying rocks	Physical	Injuries	1
Heights	Ergonomic	Falling, injuries, death	2
Toxic and hazardous substances	Radiological	Poisoning	2
Explosions	Physical	Fire, damage, injuries, death	1
Heavy loads	Ergonomic	Fatigue	2
Long distances	Physical	Physical fatigue	1
Long working hours	Ergonomic	Physical fatigue, insomnia	2
Poisonous plants	Biological	Poisoning	2
Predators	Biological	Injuries, death	1
Snake bites	Biological	Injuries, death	2
Harsh weather	Physical	Fatigue	4
Conflicts	Behavioural	Injuries	2

**Likelihood scale:** 1-unlikely/improbable, 2 –likely, 3 –most likely, 4 – definite/certainly



### Mitigation measures

The area is isolated and no settlement in the proximity of the target area and the movement of people in the area is also limited.

- Only use explosives listed under the Explosives Act of 1956.
- Use abrasives that can be delivered with water (slurry) to reduce dust.
- Blasting should ONLY be carried out by a registered company/person.
- No major blasting should take place for sites within 1000 m from residential areas.
- Do not keep explosions more than 500kg onsite.
- Explosions must be kept and transported by licenced persons only.
- Explosions must be kept at cool, dry, and well-ventilated magazines.
- Keep people and animal away from the blasting area.

### Excavations

Uncovered excavations, pits and trenches from the exploration activities are safety hazards for animal and humans. People and animals are at risk of falling or being trapped into the un-rehabilitated pits and trenches.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	1	2	6	4

### Mitigation measures

- Excavated areas must be backfilled and properly rehabilitated.
- If possible, avoid wildlife migration corridors.
- Sensitive areas should be avoided.

### Nuisance

Nuisances are broadly defined as any condition which is offensive, injurious, or dangerous to health. This impact is subjective based on the public perceived views. It will also depend on the concerned person's perception of what constitutes a nuisance. According to the National Labour Act 11 of 1992, a nuisance is described as noise, dust, vibration, and odour.

Exploration activities that may contribute to nuisance include excavation, backfilling, blasting and the operation of heavy equipment.

Exposure to excessive noise levels can lead to:

- Prevention of sleep, insomnia, and fatigue.
- Decrease in speech reception, communication, distraction, and diminished concentration thus adversely affecting job performance efficiency.
- Chronic psychological disturbance including impaired hearing.
- Irreparable cardiovascular, respiratory, and neuralgic damages in certain extreme cases.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	1	4	2

Mitigation measures

- Large scale blasting should not be conducted at places closer to residential areas, otherwise residents should be informed prior to blasting.
- Noise level at semi-mechanized sites should not exceed 85db (Health and Safety Regulations No.156).
- Provide regular maintenance of all equipment/ machines to reduce noise generation.
- All affected community should be informed in advance.
- Activities should not be carried out during odd hours and should be limited to daylight.

➤ **Possibility of fire outbreaks**

One of the most critical issues is with regards to the use and storage of fuel to be used in the exploration activities. Fuel is regarded as a hazard and if not properly handled, could cause fire outbreaks and damage to properties, especially if stored in large quantity.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	1	4	2

Mitigation measures

Only fuel less than 200 L can be kept onsite in line with the Petroleum Products Regulations of 2000. Fuel should be kept on approved metal containers which are properly sealed. The refuelling of vehicles and machineries onsite should be done on a site with an impervious surface.

➤ **Visual appeal and aesthetics**

Exploration activities generate excessive dust which causes visual intrusion in the area. Structures, temporary housing, and excavated pits may also be visible from the road and not necessarily visually attractive to tourists or visitors to the area.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	2	2	7	5

Mitigation measures

Minimise dust emission activities and ensures dust control measures. Temporary structures should be made of locally available materials and should be comparable to the local landscapes. If lighting is to be used onsite, it should be installed in such a manner that it does not cause annoyance to the local wildlife, residents, and visitors.

➤ **Waste generation**

Exploration activities will generate a variety of waste matrix such as waste rocks, litter, scrap metals, and sewage waste. Improper handling of these waste matrix is likely to cause a range of environmental impacts e.g., contamination of fresh water sources, soil contamination, sedimentation of river streams, pollution of the surrounding environment etc.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	2	2	7	5

Mitigation measures

- ✓ Waste rocks and overburdens should not be placed in riverbeds or on areas with high grazing

- potential. Topsoil should be kept separate to be used as backfilling material
- ✓ General waste generated on site should be gathered, collected regularly and properly dumped at the nearest Municipal or approved disposal site.
- ✓ Hazardous waste e.g., used oil, batteries generated should be collected and transported to specialized waste collectors or to Windhoek or Walvis Bay landfill site for proper dumping.
- ✓ Unwanted and old temporary structures not in use must be removed from the site and disposed of by the responsible person.
- ✓ The camping site must be equipped with Ventilation Improved (VIP) latrines or portable toilets connected to a septic tank. No spillage or discharge of sewage should be allowed in the environment and in case of accidents, corrective actions should be implemented to remedy such spillages.

➤ **Land use effects**

Some land use conflicts between the Proponent, MEFT, Tour operator, Concession operators could occur during operation phase if there is no adherence to the Parks Rules and if there is any inference with each other's operations.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	1	4	2

Mitigation measures

The proposed activities will take place on the area designated for tourism as per the TKSNP land use management plan. Activities have been taking place in this area and no land-use related conflicts have been experienced before. However, the proponent must

- ✓ Ensure adherence to the National Parks Rules and Regulations
- ✓ All human-wildlife conflicts (if occur) should be handled in terms of the Human-Wildlife Policy
- ✓ Maintain good communication with all parties involved through regular meetings.

➤ **Impacts from temporal housing for employees.**

No camping will be allowed within the NNP area. Hence, employees will be accommodated at nearest guest farms or at Gobabeb research station.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	2	2	7	5

Mitigation measures

- ✓ No settlement should be allowed in Park.
- ✓ Movement of people during night hours should be limited within the park.
- ✓ Fireplaces should be at secure sites and the fire should be put out after use.

➤ **Traffic related impacts**

The affected area is frequented by several people such as tourists, MEFT, Researchers etc. Thus, whether the exploration activities exists or not, traffic volumes on the main roads are expected to be there, hence it is not an aspect that can be controlled by the proponent alone. However, the impacts of off-road driving into the exploration areas will cause disturbances to both flora and fauna, thus it should be avoided or controlled.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	1	2	6	4

Mitigation measures

- ✓ All vehicles are required to make use of existing access routes and abide to the speed limit of 40km/hr within the park area.
- ✓ Use existing tracks as far as possible.
- ✓ If there is a need for new access routes it should be done in consultation with the MEFT.

➤ **Occupational safety and health impacts**

Employees are exposed various occupational health during exploration operations. The most common hazards associated with exploration activities are listed under item 3.7 of this document. The exposure to these hazards can be aggravated by certain risks factors such as lack of the experience & limited knowledge, nature of work and non-compliance to health and safety standards.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	1	2	6	4

Mitigations measures

The first step in preventing occupational health safety risks is to identify the potential hazards. To eliminate potential hazards and reduce the likelihood of potential risks the following measures should be implemented.

- All explosives must be transported, stored, and used by an experienced person in accordance with relevant regulations.
- All employees should also register themselves with the Social Security Commission (SSC).
- All employees should be subjected to regular health check-ups at the nearest health centre.
- Employees should be equipped with proper PPE suitable for each job.
- Consider the use of available technologies to reduce the workload.
- Regular inspections by the relevant inspectors such as Labour, Mines and NAMPOL.
- Ensure adherence to hazard exposure limits as listed under the National Labour Act 11 of 2007 as follows.

Potential hazard	Legal exposure limits/daily
Dust	0.1 mg/m <sup>3</sup>
Noise	85dB
Vibration	5 m/s <sup>2</sup>
Working time	8hrs.

➤ **Impacts on archaeology, culture, and heritage.**

It should be noted that the area is home to certain sites that might be of archaeological and historic importance. A full archaeological and heritage impact study was conducted and submitted to the NHC for approval.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	1	1	1	4	2

Mitigation measures

There are no archaeological sites within or in close proximity to the area of interest and the area earmarked for ox-wagon route will be identified by means of a concession to be operated under the auspicious of the MEFT. Hence,

- ✓ The proponent should ensure good communication with MEFT and the Concession operator.
- ✓ Implement mitigation measures outlined in the AHI study and in the EMP.
- ✓ Abide to the conditions set by the NHC.

➤ **Impacts on local tourism.**

The NNP has high tourist potential and there is also a tourism concession within the proximity of the EPL area. Hence, the proposed activities could interfere with the tourism activities or destructions caused by the exploration activities could reduce tourism potential of the area.

Impact Type	Ratings (before mitigation/measures)				Significance	
	Extent	Duration	Intensity	Probability	Without measures	With measures
<b>Negative</b>	1	2	2	1	6	4

Mitigations

- Ensure communication with the concession operator and other stakeholders.
- All vehicles must be driven by authorized drivers and at the limited speed limit (40km/hr)
- Avoid littering along the road and exploration activities.
- Ensure progressive rehabilitation of disturbed areas.
- Ensure limited working hours and avoid working during odd hours
- All vehicles must be labelled and have valid entry permit to the park

## **6.4 Potential positive impacts**

Apart from the identified negative impacts, the proposed exploration activities also provide an array of socio-economic benefits. However, certain enhancement measures should be implemented to fully realize these benefits.

### **6.4.1 Socio-economic benefits**

#### **✓ Employment opportunities**

The exploration activities will create employment opportunities for about 15 employees while more opportunities are expected during the actual mining process. Both activities will also generate indirect job opportunities.

#### **✓ Secondary opportunities**

Exploration and subsequent mining activities will also create indirect employment and business opportunities in areas such as logistic, supplies, consulting etc.

#### **✓ Livelihood**

The proposed activities will generate source of livelihood and economic wellbeing to many families through employment opportunities (both direct and indirect) and income generation.

#### **✓ Foreign Exchange and GDP Contribution**

The envisaged exploration activities have potential to contribute to the mainstream economy through Gross Domestic Product (GDP) and earn foreign exchange through international markets. However, majority of Namibia's mineral resources are sold as raw products and only get processed abroad, the finished products are often not marketed as Namibian products.

### **6.4.2 Enhancement measures**

The proponent should explore possibilities of mineral beneficiation and value addition within the country and discourage export of unprocessed minerals. This will create more opportunities and increase the sector's contribution to the country's GDP.

## 6.5 Summary of identified negative impacts.

Below is a summary of identified potentials impacts and their significance after mitigation measures.

**Table 6: Significance of impacts**

Potential Impacts on Environmental Receptors	Significance of impacts (After mitigations)
<b>A. Impacts on Biophysical environment</b>	
Vegetation losses and destruction	Moderate
Disturbance to Fauna	Moderate
Disturbance to topography and landscapes	Moderate
Ecological degradation and habitat fragmentation	Moderate
Soil erosion and contamination	Moderate
Disturbance to local Geology	Moderate
Increase water demand	Moderate
Contamination to surface and groundwater sources	Moderate
Air pollution	Moderate
Land Degradation	Moderate
<b>B. Impacts on Socio-economic Environment</b>	
Public health and safety	Moderate
Possibility of fire outbreaks	Low
Visual impacts	Moderate
Land use effects	Moderate
Waste Management	Moderate
Impacts of temporary infrastructures	Moderate
Traffic impacts	Low
Occupational Health Impacts	Moderate
Impacts on Archaeological, Culture and Heritage	Low
Impacts on local tourism	Low

## **7. CONCLUSIONS, CONDITIONS AND RECOMMENDATIONS**

### **7.1 Conclusion**

The objective of this EIA study was to establish the baseline of the affected environment, solicit inputs from stakeholders and Interested and Affected Parties in order to define the range of the environmental impact assessments and determine any gap of information that require further studies. It is believed that this objective has been achieved and adequately documented in this report. All possible environment aspects associated with the ongoing exploration activities have been adequately assessed and necessary control measures have been formulated to meet statutory requirements. The following conclusions can be drawn from this EIA study.

- Authorized exploration activities have already taken place at the study area, with minimum disturbances to the environment. Thus, similar exploration activities can be allowed with the same expectations if similar due diligence is observed and EMP is fully implemented.
- The intended exploration activities can be undertaken, and potential impacts thereof can be manageable by implementing the EMP.
- The proponent is already known in the area and has for years been adhering to the NNP Rules and Regulations, thus, the present good relationship between MEFT and the proponent is likely to continue.



## 7.2 Recommendations

To the proponent

- ✓ Acquire all necessary legal documents i.e., permits, required for the exploration process and conduct its activities in line with the Prospecting and Mining Act.
- ✓ Comply with all other legislations as listed in Section of this report.
- ✓ Comply with the Rules and Regulations of the Sperrgebiet National Park
- ✓ Ensure the implementation of the EMP during the life span of the proposed project/activities.
- ✓ Notify the competent authority and regulatory authority of any changes or amendments to the initial proposed exploration methods to be used and affect changes on the EMP.
- ✓ Appoint an Environmental Control Officer to ensure the implementation of the EMP, conduct monitoring and provide biannual environmental reports to the regulatory authority.
- ✓ Appoint a Botanist/Horticulturist to implement the Search and Rescue management Plan.
- ✓ Ensure effective communication with competent authority and/or regulatory authority to ensure a good working relationship at all times.
- ✓ Provide training to all employees (both old and new) and such proof be provided to the MEFT-Sperrgebiet National Park.
- ✓ Adherence to the Sperrgebiet National Park Rules and Regulations should be ensured at all times.

To the competent authority (MME) and regulatory Authority (MEFT)

- ✓ The Minister (MEFT) shall excise the power vested in Section 17 (1) and (2) b & c of the Nature Conservation Ordinance 4 of 1975 in respect of the proposed activities.
- ✓ Establish flight access and altitudes restrictions in areas with high wildlife sensitivity, particularly during critical times such as breeding, nesting, and migration seasons.
- ✓ Approve the findings of the EIA study, ecological study and mitigation measures contained in the EMP.
- ✓ Authorize the issuance of the ECC for the **Proposed exploration activities on EPL 7170 located 140 km east of Walvis Bay to Hope Namibia Mineral Exploration (Pty) Ltd.**
- ✓ When deemed necessary, attach any condition/s to ensure environmental compliance and for the proposed project to meet statutory requirements.

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## **9. APPENDICES**

- 9.1 Appendix A: List of Flora from WIND**
- 9.2 Appendix B: Proof of Consultation**
- 9.3 Appendix C: Consent from NHC**
- 9.4 Appendix D: MEFT-NNP Consent letter**
- 9.5 Appendix E: Environmental Management Plan (EMP)**