Environmental Scoping Report for Prospecting and Exploration Activities on EPL 8097, Erongo Region

Environmental Scoping Report

For

Theresia Jeaneth Aochamus

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LIST OF ACRONYMS

AIDS	Acquired immune deficiency syndrome
CRR	Comments and response report
dB	Decibels
DESR	Draft Environmental Scoping Report
EA	Environmental Assessment
EAP	Environmental Assessment Practitioner
EAR	Environmental Assessment Report
ECC	Environmental Clearance Certificate
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment

EMA	Environmental Management Act
EMP	Environmental Management Plan
FESR	Final Environmental Scoping Report
GTZ	Gesellschaft für Technische Zusammenarbeit
HIV	Human immunodeficiency virus
I&AP	Interested and Affected Party
IUCN	International Union for Conservation of Nature
MAWF	Ministry of Agriculture Water and Forestry
MET	Ministry of Environment and Tourism
MET: DEA	Ministry of Environment and Tourism: Department of Environmental Affairs
MME	Ministry of Mines and Energy
PPP	Public participation process
p/km^2	People per square kilometre
SADC	Southern African Development Community
USAID	United States Agency for International Development

1. |PURPOSE OF THIS DOCUMENT

The purpose of this Environmental Scoping Report (DESR) is to inform the decision-making of the Environmental Commissioner when considering the application for an environmental clearance certificate for this activity. It is a supporting document to the application. It is a culmination of the environmental impact assessment process and informs the accompanying Environmental Management Plan (EMP).

2. |BACKGROUND INFORMATION

The proponent, Theresia Jeaneth Aochamus, has obtained a Notice of Preparedness to Grant Exclusive Prospecting Licence over EPL 8097. The minerals of interest are Base and Rare Metals; Dimension Stones; Industrial Minerals; and Precious Metals. Exploration is a range of activities to help determine if there are minerals under the ground. The objective of the planned prospecting and exploration activities is to identify geological features and lithostratigraphic units within the concession area, and to define the mineral deposits, in order to determine whether these deposits are economically viable. If the exploration process identifies minerals that can be commercially extracted, then mining in the future is possible.

The activities will include both invasive and non-invasive exploration. The proponent will employ a phased exploration approach consisting of three distinct phases i.e., the Pre-Development Phase, Operational and Maintenance Phase, and the Decommissioning and Rehabilitation Phase.

The pre-development phase involves literature and map reviews, as well as fieldwork to determine targets for detailed investigation. The operational and maintenance phase is the phase during which the exploration program will commence. The target areas within the EPLs' boundaries identified during the pre-development phase will undergo rigorous examination. Soil and rock grab sampling is the preferred technique for the planned exploration work, and diamond drilling may be considered depending on outcome of initial operations. Numerous shallow trenches might be considered when and if the grab samples return anomalous values for the target minerals. No explosives will be used during the exploration phase.

The proponent appointed Environam Consultants Trading cc (ECT) to undertake the Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the activities from the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs (MET: DEA) the competent authority is the Ministry of Mines and Energy.

The process will be undertaken in terms of the gazetted Namibian Government Notice No. 30 Environmental Impact Assessment Regulations (herein referred to as EIA Regulations) of the Environmental Management Act (No 7 of 2007) (herein referred to as the EMA). The EIA process will investigate if there are any potential significant bio-physical and socio-economic impacts associated with the proposed development and related infrastructure.

The EIA process also provides an opportunity for the public and key stakeholders to provide comments and participate in the process. Additionally, it will serve the purpose of informing the proponent's decision-making, that of the Ministry of Environment, Forestry and Tourism as well as that of the Ministry of Mines and Energy.

2.1. Project Location

The EPL 8097 is situated at about 47 km northwest of Omatjete settlement and 65 km southeast of Khorixas. The EPL is accessible off the D3712 road, which passes adjacent the EPL to the east.

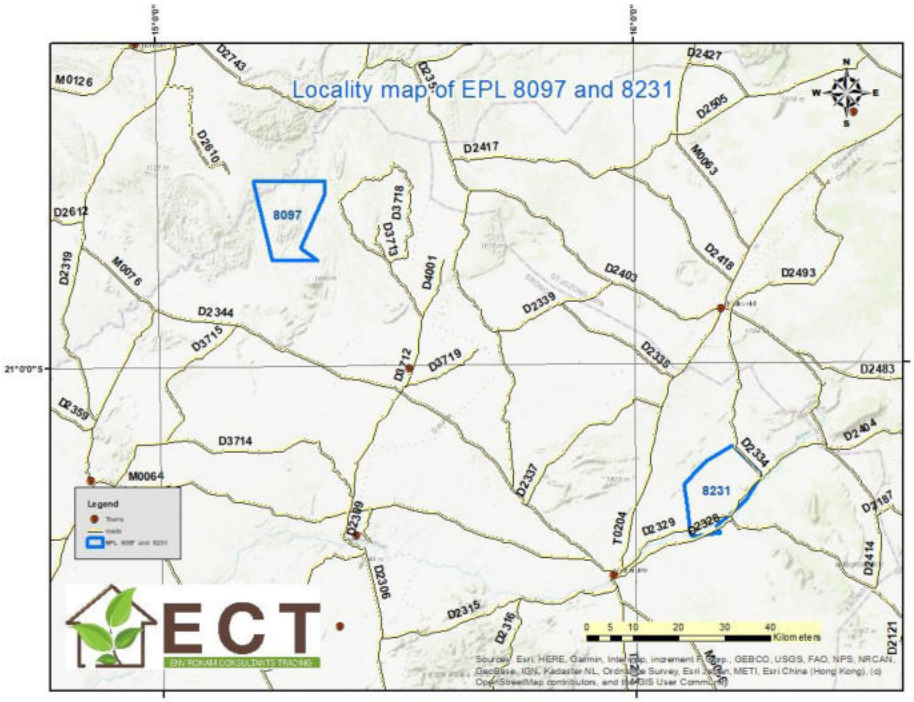

Figure 1: Locality map of EPL 8097

3. TERMS OF REFERENCE AND SCOPE OF PROJECT

The scope of this project is limited to conducting an environmental impact assessment and applying for an Environmental Clearance Certificate for Prospecting and Exploration Activities on EPL 8097, Erongo Region, as

indicated in section 2 above. This includes consultations with client; site investigations and analysis; stakeholder consultations; impact analysis; mitigation formulation; report writing; and draft Environmental Management Plan.

3.2. Assumptions and Limitations

In undertaking this investigation and compiling the Environmental Scoping Report, the following assumptions and limitations apply:

- Assumes the information provided by the proponent is accurate and discloses all information available.

Content of Environmental Scoping Report

In terms of Section 8 of the gazetted EIA Regulations certain aspects must be included in a Scoping Report. **Table 1** below delineate, for the purpose of ease reference, where this content is found in this Environmental Scoping Report.

Table 1: Contents of the Scoping / Environmental Assessment Report

Section	Description	Section of ESR/ Annexure
8 (a)	The curriculum vitae of the EAPs who prepared the report;	Refer to **Annexure E**
8 (b)	A description of the proposed activity;	Refer to Chapter 6
8 (c)	A description of the site on which the activity is to be undertaken and the location of the activity on the site;	Refer to Chapter 2
8 (d)	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Refer to Chapter 5
8 (e)	An identification of laws and guidelines that have been considered in the preparation of the scoping report;	Refer to Chapter 4
8 (f)	Details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including	Refer to Chapter 7

Section	Description	Section of ESR/ Annexure
	(i) the steps that were taken to notify potentially interested and affected parties of the proposed application	Refer to Chapter 7
	(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	Refer to **Annexures A** and **B** for site notices and advertisements respectively.
	(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application;	Refer to **Annexure D**
	(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	Refer to **Annexure D**
8 (g)	A description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Refer to Chapter 5
8 (h)	A description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Refer to Chapter 8
8 (i)	Terms of reference for the detailed assessment;	Refer to Chapter 3
8 (j)	An environmental management plan	Refer to **Annexure F**

4. |LEGAL, POLICY AND INSTITUTIONAL FRAMEWORK

The principle environmental regulatory agency in Namibia is the Office of the Environmental Commissioner within the Directorate of Environmental Affairs of the Ministry of Environmental and Tourism. Most of the policies and legislative instruments have their basis in two clauses of the Namibian Constitution, i.e. Article 91 (c) and Article 95 (I); however, good environmental management finds recourse in multiple legal instruments. **Table 2** below provides a summary of the legal framework considered to be relevant to this development and the environmental assessment process:

Table 2: Legislation applicable to the proposed development

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
The Constitution of the Republic of Namibia as Amended	Article 91 (c) provides for duty to guard against "the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia." Article 95(l) deals with the "maintenance of ecosystems, essential ecological processes and biological diversity" and sustainable use of the country's natural resources.	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	Section 2 outlines the objective of the Act and the means to achieve that. Section 3 details the principle of Environmental Management	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate.	**Activity 3.1** The construction of facilities for any process or activities which requires a licence, right or other form of authorisation, and the renewal of a licence, right or other form

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	GN 30 provides the regulations governing the environmental assessment (EA) process.	of authorisation, in terms of the Minerals (Prospecting and Mining Act), 1992. **Activity 3.2** Other forms of mining or extraction of any natural resources whether regulated by law or not. **Activity 3.3** Resource extraction, manipulation, conservation and related activities.
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	The EA process should incorporate the aspects outlined in the guidelines.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	Care should be taken that the development does not lead to the degradation of the natural beauty of the area.
Water Resources Management Act 11 of 2013	To provide for the management, protection, development, use and conservation of water resources.	The pollution of water resources should be avoided during the operation of the development.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
The Ministry of Environment, Forestry and Tourism (MEFT) Policy on HIV & AIDS	MEFT has developed a policy on HIV and AIDS. In addition it has also initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.	The proponent and its contractor have to adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with construction projects has shown that a significant risk is created when construction workers interact with local communities.
Minerals (Prospecting and Mining) Act 33 of 1992	This Act deals with the granting of access to mineral resources.	Compliance to this instrument is critical.
Labour Act no 11 of 2007	Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.	Given the employment opportunities presented by the development, compliance with the labour law is essential.
Public Health Act no 36 of 1919	Section 119 prohibits persons from causing nuisance.	Owner, contractors and employees have to comply with these legal requirements.
Nature Conservation Ordinance no 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants have to be managed within the legal confines.
Atmospheric Pollution Prevention Ordinance (No. 11 of 1976).	The Ordinance objective is to provide for the prevention of the pollution of the atmosphere, and for matters incidental thereto.	All activities on the site will have to take due consideration of the provisions of this legislation.
Roads Ordinance 17 of 1972	This Ordinance consolidates the laws relating to roads.	The provisions of this legislation have to be taken into consideration in as far as access to the development site is concerned.
Roads Authority Act, 1999	Section 16(5) of this Act places a duty on the Roads Authority to ensure a safe road system.	Some functions of the Roads Ordinance 17 of 1972 have been assigned to the Roads Authority.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Petroleum Products and Energy Act of 1990	This Act regulates the on-site storage of fuel amongst others	The storage of fuel for the use of machinery should adhere to the relevant legislation.

This EIA process will be undertaken in accordance with the EIA Regulations. A Flow Diagram (refer to **Figure 3** below) provides an outline of the EIA process to be followed.

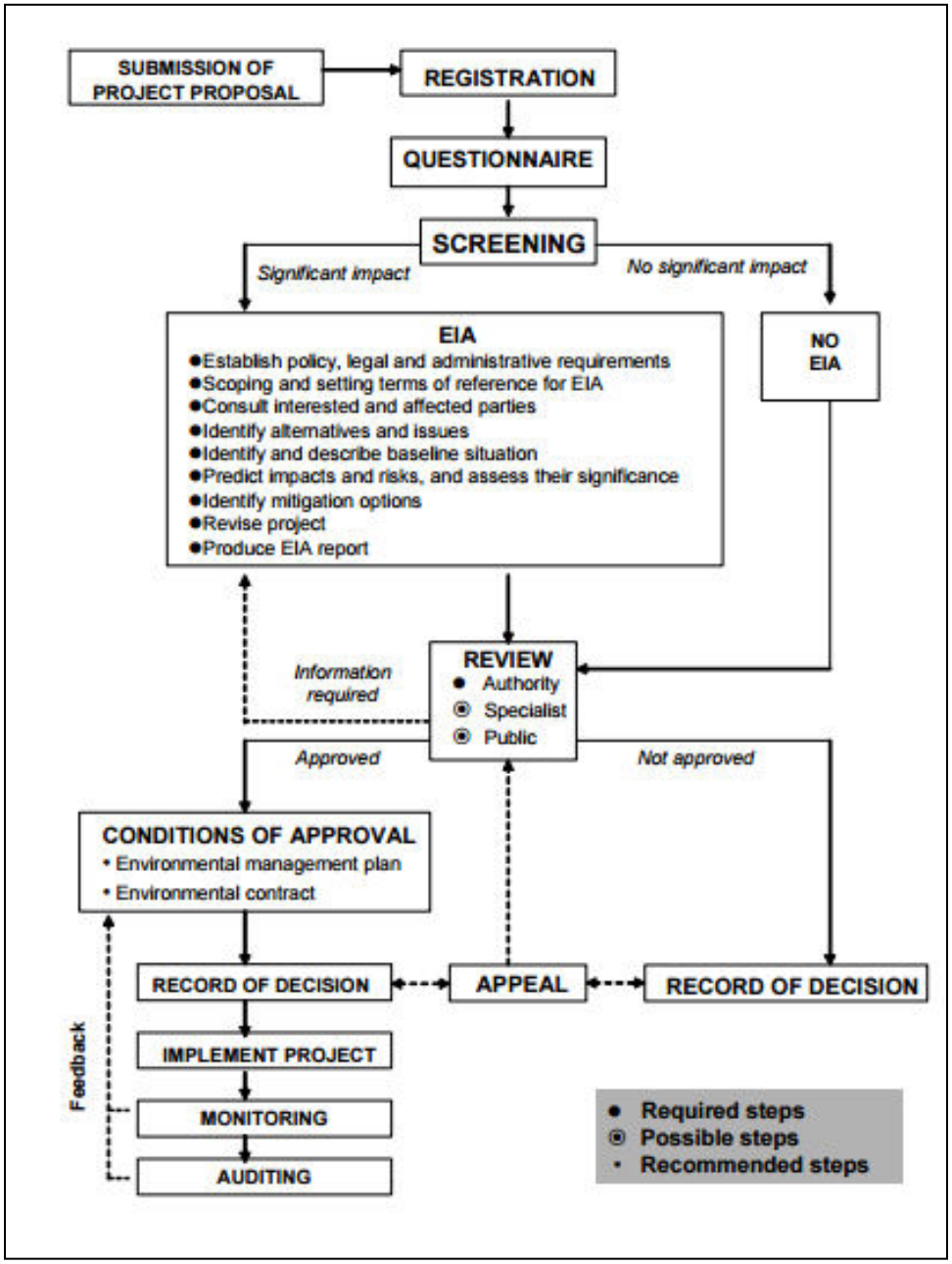

Figure 2: EIA Flowchart for Namibia (SELH, 2012)

5. |ENVIRONMENTAL BASELINE DESCRIPTION:

5.1. SOCIAL ENVIRONMENT

5.1.1.Socio-Economic Context

The EPL 8097 is situated at about 47 km northwest of Omatjete settlement and 65 km southeast of Khorixas. The EPL area is situated in a semi-arid farming region and have a homogenous farming pattern, which is mostly stock-raising. It also combines communal farming with commercial farming. The Farms include Kwaggaspan and Okotjize. The needs for production and marketing are therefore very similar and the farming community has a distinct mutual interest around industrial farming. EPL 8097 encompasses a spectrum of valuable resources, including Base and Rare Metals, Dimension Stone, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear Fuel Minerals, Precious Metals, Precious Stones, and Semi-Precious Stones. Various mining operations occur within this region at places such as Navachab and on a smaller scale at places surrounding the EPL area.

5.1.2.Archaeological and Heritage Context

A Heritage Impact Assessment (HIA) was commissioned for this environmental assessment. The HIA was conducted by Mr. Manfred !Gaeb. Archaeological investigations within and adjacent to EPL 8097 have revealed evidence of human occupation spanning over one million years. Surface scatters of crude stone implements from the mid-Pleistocene era have been found near major drainage lines. Late Pleistocene remains include well-fashioned bifacial stone hand axes, which later gave way to a complex toolkit of smaller artifacts that could be attached to wooden spear shafts and scraper tool handles using vegetable resin mount ant.

The Late Pleistocene brought significant environmental changes to the both Erongo and Kunene region, including the establishment of the drainage systems. While regions to the south were abandoned due to extreme aridity, the regions sustained continuous occupation for approximately 12,000 years. Early to mid-Holocene human occupation emphasized rock shelter sites along the escarpment, serving as hunting outlets.

Over the past 2000 years, the introduction of livestock, ceramics, metallurgy, and domestic crops has shaped the way of life in northern Namibia. The region's climatic instability and aridity have led to a predominantly semi-nomadic pastoralist way of life. Arid conditions worsened between 1300 and 1800 AD, leading some Ovaherero populations to migrate to central parts of Namibia, resulting in a genocidal war under German colonial administration.

Archaeological research in Namibia's arid environment relies on surface deposits, which provide insights into human behavioral organization at large spatial scales. Research highlights that human groups employed local stone with subtle shifts in procurement and exploitation patterns between MSA and LSA. Activities were concentrated around ephemeral riverbeds, indicating successful resource exploitation strategies in the desert environment. Such findings underscore the adaptive flexibility of Pleistocene populations in Africa, posing intriguing questions for future exploration.

The HIA identified some archaeological finds on EPL 8097 that are depicted in the pictures below:

Burial site on EPL 8097

Rock Painting on Marble at EPL 8097

Rock Art of painted hands at EPL 8097

Rock Art picture of engraved and painted giraffe

Burial site close to area of EPL 8097

Old water well in close proximity of EPL 8097

Artifact manufacturing sites

Old water well closed to EPL 8097

Rock painting detailing resources

Old dam ruins of area close to EPL 8097

5.2. BIO-PHYSICAL ENVIRONMENT

5.2.1. Climate

Climate has a major influence on the exploration activities proposed on the EPL. Understanding of climatic conditions helps to determine the appropriate and/or inappropriate times to conduct exploration activities.

5.2.1.1 Rainfall

In the EPL area, rainfall is expected between January and April. February experiences the highest rainfall at an average of about 172.5 mm, and little or no rainfall is expected between May and December. Figure 3 below shows a 12-month average rainfall record for the project area.

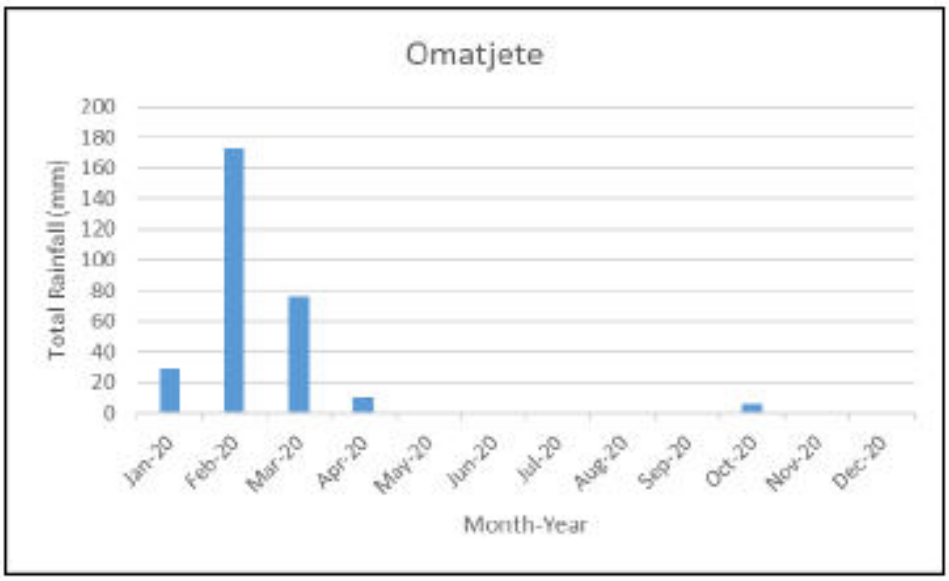

Figure 3: Average rainfall graph for the project area (SASSCAL, 2024)

5.2.1.2 Temperature

The project area experiences high temperatures in December at an average of 24.5 °C and low temperature at an average of 11.6 °C in June. Figure 3 below shows the temperature graph.

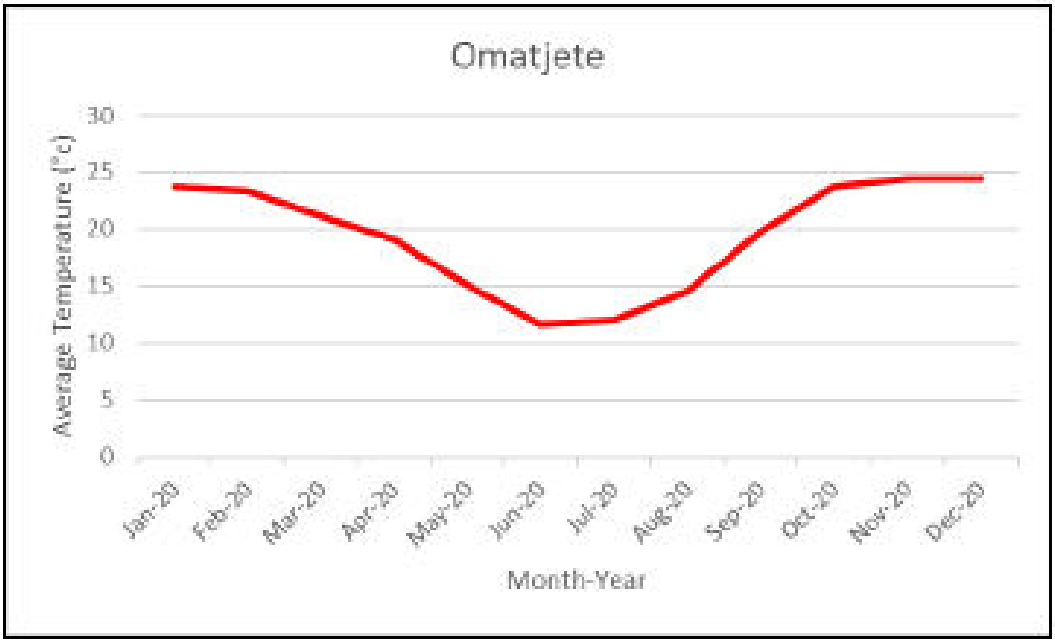

Figure 4: A graph showing monthly average temperature patterns for the project area source: (SASSCAL, 2024).

5.2.2.Topography, Geology and Hydrogeology

The EPL 7327 is located within the central-western plain. These plains were largely formed by erosion cutting back into higher ground and carving out the catchment areas of several major rivers. The Khan, Omaruru, Swakop and Ugab rivers are the most prominent of these. Much of the area lies between 500 and 1000 m above sea level, and consists of metamorphic rocks that were forced up out of the sea during the formation of the Gondwana continent some 550 million years ago, (Mendelsohn, 2003).

The EPL lies within the Damaran Supergroup. Around the EPL there are mixtures of metamorphic and intrusive or plutonic rocks, tracks known as migmatitic terranes, crystalline moderately to high metamorphosed rocks of unknown origin with or without intrusions. This classification is inherently prone to variable interpretation, as other compilers which might distinguish some packages by their metamorphic or gneissic protoliths, and the associated age ranges may be more variable (EDS, 2021).

The EPL is covered by two soil types, namely: Lithic Leptosols and the Eutric Regosols. The Lithic Leptosols typically form in actively eroding landscape, especially in the hilly or undulating areas that cover much of the EPL. These course-textured soils are characterized by their limited depth caused by the presence of a continuous hard – rock, highly calcareous or cemented layer within 30 cm of the surface. The Lithic Leptosols are the shallowest soil to be found in Namibia and they often contain much gravel. The Eutric Regosols are medium and fine textured soils of actively eroding landscapes, the thin layers lying directly above the rock surface from which they formed. Although not as shallow as the Lithic Leptosols, these soils never reach a depth of more than 50 cm, (Mendelsohn, 2003**).**

In terms of rivers (surface water/ hydrology), the Ugab and Ozongombo river cross the EPL. With regards to groundwater (hydrogeology), the EPL is mainly covered by the rock bodies with little groundwater potential. The little potential is attributed to the type of rocks units underlying the EPL and their non-fractured/faulted nature limit the storage, transmission and flow of groundwater. Therefore, the rocks are not good aquifers. The EPL lie in an area of high level of sensitivity to groundwater drought (EDS, 2021).

5.2.2.Terrestrial Ecology

5.2.2.1 General Flora and Fauna Description

The project location is generally characterized by a vegetation structure of mainly low shrubs and trees. The trees and shrubs known, and/or expected to occur in the general area (derived from Tree Atlas of Namibia, Curtis & Mannheimer 2005) are presented in Table 3 below. Species indicated are known from the quarter-degree square distribution principle used and don't necessarily occur throughout the entire area. It is estimated that at least 63 species of trees and shrubs occur in the general EPL area.

Fourteen species of trees and shrubs (22.2%) expected to occur in the general EPL area are classified as protected species by Forest Act No. 12 of 2001, 1 species as near-endemic, 1 Endemic and 1 Least Concern under the International Union for Conservation of Nature. All the trees with some kind of conservation and/or protected status are viewed as important in the general development area.

Species composition and diversity are likely to be affected by the river on site (Ugab River). It is expected to be identified that species composition and abundance are high along the riverside compared to other parts of the project area. With a low vegetation cover of approximately 13.9%, the area displays relatively medium-low levels of diversity, see Figure 5 for vegetation cover map.

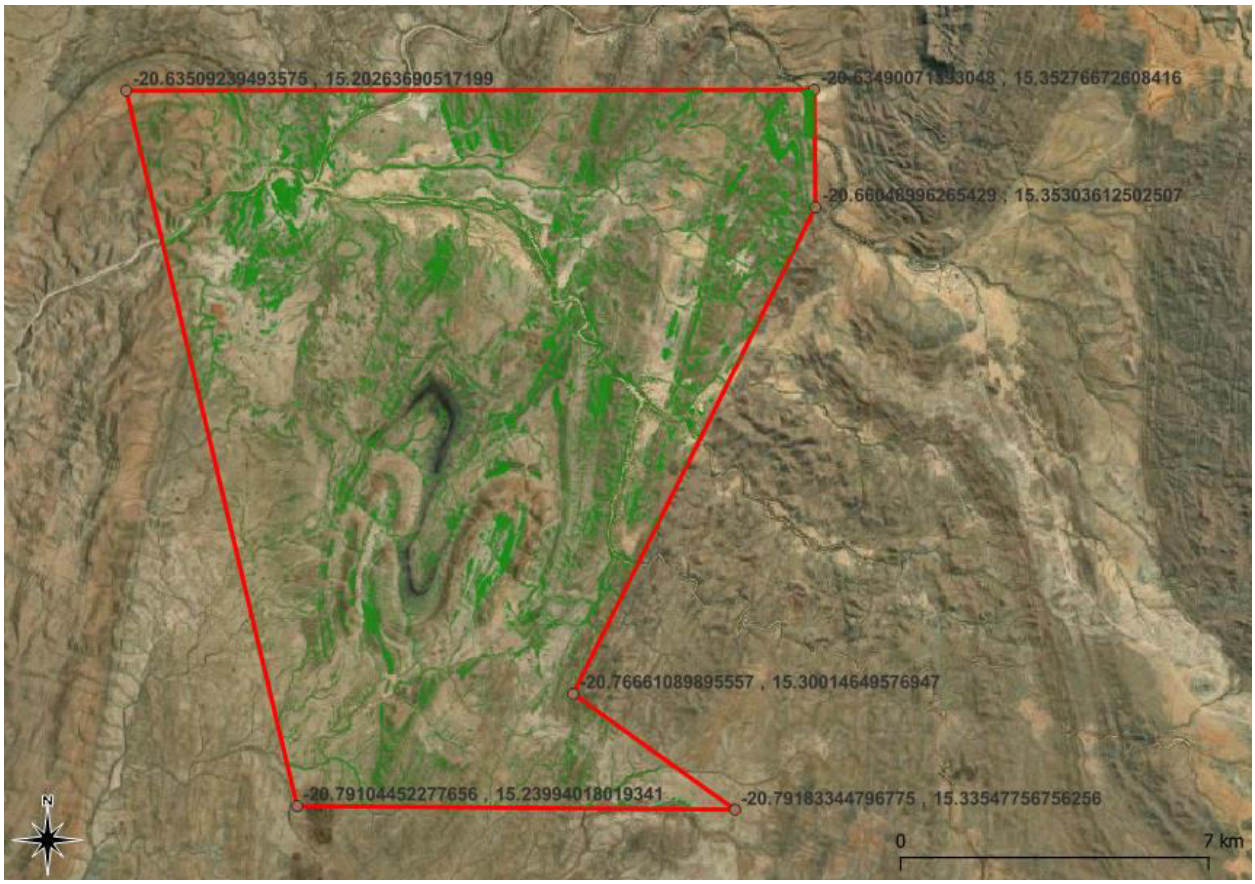

Figure 5: vegetation Cover Map

Table 3 below provides a list of plant species expected to occur within the site boundary of this proposed project. This table further highlights the national and international conservation status of some species.

Table 3: Generated plant list expected to occur within the project grind (Tree and shrub diversity *expected)*.

Plant species	**Namibian conservation status**	**International Status (IUCN)**
Acacia erioloba	Forestry protected	
Acacia erubescens		
Acacia karroo		

Plant species	**Namibian conservation status**	**International Status (IUCN)**
Acacia mellifera subsp. detinens		
Acacia reficiens		
Acacia Senegal		
Acacia tortilis		
Adenolobus garipensis		
Albizia anthelmintica	Forestry protected	
Azima tetracantha		
Boscia albitrunca	Forestry protected	
Boscia foetida		
Cadaba schroeppelii		
Catophractes alexandri		
Colophospermum mopane	Forestry protected	
Combretum apiculatum		
Combretum imberbe	Forestry protected	
Commiphora glandulosa		

Plant species	**Namibian conservation status**	**International Status (IUCN)**
Commiphora glaucescens		Near-Endemic
Commiphora namaensis	Forestry protected	
Commiphora pyracanthoides		
Commiphora saxicola	Forestry protected	Endemic
Commiphora wildii	Forestry protected	
Cordia sinensis		
Croton gratissimus		
Cryptolepis decidua		
Dichrostachys cinerea		
Diospyros lycioides		
Ehretia namibiensis		
Elephantorrhiza suffruticosa		
Euclea pseudebenus		
Euphorbia guerichiana		
Euphorbia virosa		
Faidherbia albida	Forestry protected	

Plant species	**Namibian conservation status**	**International Status (IUCN)**
Gossypium anomalum		
Grewia bicolor		
Grewia flava		
Grewia flavescens		
Grewia tenax		
Grewia villosa		
Gymnosporia senegalensis		
Leucosphaera bainesii		
Lycium bosciifolium		
Maerua parvifolia		
Maerua schinzii	Forestry protected	Least Concern
Manuleopsis dinteri		
Montinia caryophyllacea		
Moringa ovalifolia	Forestry protected	
Mundulea sericea		
Otoptera burchellii		

Plant species	Namibian conservation status	International Status (IUCN)
Pachypodium lealii		
Parkinsonia africana		
Pechuel-Loeschea leubnitziae		
Phaeoptilum spinosum		
Prosopis spp.		
Rhus marlothii		
Salvadora persica		
Sesamothamnus guerichii		
Sterculia africana	Forestry protected	
Tamarix usneoides	Forestry protected	
Terminalia prunioides		
Tinnea rhodesiana		
Ziziphus mucronata	Forestry protected	

These vegetation types contribute to the ecological diversity of the project area and provide habitat for a range of wildlife, including antelopes, birds, reptiles, and small mammals. In terms of fauna, the general distribution of

species in Namibia is higher in the areas receiving higher rainfall which have more wetlands and forest habitats not commonly found elsewhere in the country (Mendelsohn, 2003). Natural aquatic communities are not present in the region as a result of the absence of surface water flow due to the high infiltration rates, and the ephemeral river system in the area.

Large herds of herbivores are seldom encountered, but single sightings of kudu and oryx are common. Other species encountered in the area include springbok, zebra, warthog, black saddled jackals and ground squirrels. Although rare, sightings of the following do occur: bat-eared fox, cheetah, caracal, common wild cat, brown hyenas, aardwolf, honey badger, striped polecat, common genet, aardvark, klipspringer and steenbok.

5.3. SURROUNDING LAND USE

EPL 8097 lies completely within communal settlements. Cattle and sheep farming are the general farming practises in the area. The settlements found within EPL 8097 as well as those found near the EPL are listed in Table 5 below.

Table 4: Farms within and nearby the EPL area

Settlements within EPL 8097	Settlements near EPL 8097
Omauwa	Orusewa
Okapereke	Okotjize
Otjomukona	Otjingore

5.4. PHYSICAL ENVIRONMENT

Water for the exploration activities will be obtained from boreholes and/or off-site sources in the vicinity or any other approved water sources. Any new groundwater sources will be subject to obtaining a water abstraction permit from the relevant authorities. Power supply during the exploration stage will be provided from diesel-generators. The access road will be graded as required.

6. |PROJECT DESCRIPTION:

6.1. PROJECT DEVELEOPMENT

Exploration and prospecting for minerals are the first steps in the development and eventual mining of any potential mine. Exploration results that are successful may lead to the development of a mine in order to extract the target mineral, and ultimately to the closure of the mine. The exploration project activities commence following the

issuance of the Environmental Clearance Certificate (ECC) by the Environmental Commissioner. It is anticipated that the exploration phase will last approximately three years. It is intended that the planned exploration activities will entail the delineation of mineral deposits and the determination of whether they provide economically viable resources for mining. Three main phases are involved in the development of the project: the Pre-Development Phase, the Exploration Phase, and the Decommissioning and Rehabilitation Phase.

6.1.1 Pre-development Phase (Prospecting)

Following the issuance of an ECC, the exploration program is initiated by analyzing existing reports and constructing composite stratigraphic and lithological-geochemical maps of the targeted areas in order to identify potential lithostratigraphic packages. As part of the literature review, fieldwork (lithological mapping and sampling of soil and rock) will be conducted to verify the results of the desktop study. As of this point, there are no physical disturbances required.

To define target areas for test drilling, the Proponent must conduct detailed geological mapping, rock sampling on the surface, and soil geochemical surveys, accompanied, where necessary, by geophysical surveys. In the subsequent phase of exploration, refined geological maps are used to select target areas for further detailed exploration, such as drilling.

6.1.2 Operational and Maintenance (Exploration: Drilling, Sampling and Analysis) Phase

As part of the operational phase of the exploration program, target areas are selected and verified and detailed exploration works are carried out. It has been stated by the Proponent that both invasive and non-invasive exploration activities are expected to be conducted upon issuance of an ECC. An example of non-invasive activities would be geological field mapping and ground-based surveys, whereas invasive activities would include soil and rock sampling, trenching, drilling, and bulk sampling. For this exploration program, reverse circulation (RC) drilling is the preferred drilling technique. In RC drilling, a rotating tungsten-steel bit is driven by a pneumatic hammer. Rock chips are collected as part of this technique, resulting in an uncontaminated large volume sample. Compared to other techniques such as diamond drilling, it is relatively quicker and more cost-effective. During advanced stages of exploration, diamond drilling may be considered if large quantities of sample material will be required for analysis and to carry out processing trials. In addition to obtaining structural geological data, diamond drilling may also be used for this purpose.

It is anticipated that the exploration period will last between 12 and 18 months. Based on the geology and trenching, drilling, and assay results of the samples collected, a potential mineralization model and exploration targets will be

selected. Exploration activities are planned as a means of delineating mineral deposits and determining whether they are economically viable as mining resources. During the exploration phase, no explosives will be used.
The exploration operations also include the following aspects:

6.1.3 Accessibility to Site

The EPL 8097 is situated at about 47 km northwest of Omatjete settlement and 65 km southeast of Khorixas. The EPL is accessible off the D3712 road, which passes adjacent the EPL to the east.

6.1.4 Material and Equipment

Vehicles and equipment required for the exploration program include two (4X4) vehicles, a truck, water tanks, drill rigs, drilling machines, and a power generator. A designated area near the accommodation site or an area within the EPL area will be designated for the storage of equipment and vehicles.

6.1.5 Services and Infrastructure

Water: Water for the exploration activities will be obtained from boreholes and/or off-site sources in the vicinity or any other approved water sources. Any new groundwater sources will be subject to obtaining a water abstraction permit from the relevant authorities. Estimated monthly water consumptions are at 2000 liters but not exceeding 80 000 liters, which includes water for drinking, sanitation, cooking, dust control, drilling, as well as washing equipment.

Power supply: Power required during the operation phase will be provided from diesel-generators. About 300 litres of diesel will be used per day, a bunded diesel bowser which will be on site, will be filled 2 – 3 times a week by a diesel bowser. When mineable resources are discovered, arrangements will be made with NamPower and/or local municipal sources for possible electricity supply.

In addition to fuel (diesel) for generators and other equipment, drip trays will be readily available on this trailer and monitored to ensure that any accidental fuel spills will be cleaned up as soon as they have been detected. The fuel (diesel) required for exploration equipment will be stored in a tank mounted on a mobile trailer. In order to avoid unnecessary contamination of the ground, fuel can also be stored in jerry cans placed on plastic sheeting.

6.1.7 Waste Management

There will be secure waste bins on site for each type of waste (for example, household waste, hazardous waste, and recyclable waste). The waste will be sorted and collected on a weekly or monthly basis, and will be taken to the nearest certified landfill site based on the amount generated. Prior to using waste management facilities, an

agreement must be reached with different waste management facility operators/owners and authorization or permits must be obtained if hazardous waste will be produced.

In the case of sanitation and human waste, long drop ablution facilities will be used and sewage will be disposed of in accordance with the approved disposal or treatment methods for the product. There will be drip trays and spill control kits on site to ensure that oil/fuel spills and leaks from vehicles and equipment are captured on time and contained properly before they pollute the site.

On-site waste can also be classified as mineral or non-mineral waste:

Mineral waste is a solid product produced during the exploration and concentration of minerals in order to obtain the desired minerals. It is anticipated that mineral waste will be generated throughout the exploration phase of the project. As stipulated in the Environmental Management Plan, this waste will be stripped and disposed of in designated areas.

Non-mineral waste consists primarily of materials that are used in the exploration phase of the project. These include, but are not limited to, empty containers, plastic, etc., and other household waste. Waste will be collected, sorted, and taken to the dumpsite on a weekly or biweekly basis.

6.1.7 Health and safety

Everyone working on the project site will be provided with the appropriate Personal Protective Equipment (PPE). To address potential minor injuries, there will be a minimum of two first aid kits readily available on site.

6.1.10 Safety and Security

The campsite and/or exploration sites will require temporary storage areas for exploration material, equipment, and machinery. There will be 24-hour security provided at the delegated storage sites. To ensure the safety of people and domestic animals, a temporary support fence will be constructed around the storage site.

A minimum of two fire extinguishers will be readily available in vehicles, at work sites and at camps for the purpose of fire management. Safety of on-site workers: All project personnel will be provided with adequate and appropriate Personal Protective Equipment (PPE) while working on the project. The site will be equipped with at least two first aid kits to address any minor injuries that may occur.

6.1.10 Accommodation

The exploration crew will be accommodated in Omatjete, or a campsite will be set up for the exploration crew near the exploration sites. In the event that the accommodation camp is to be set up on a farm, arrangements will be made with the farm owner/s. All exploration activities will take place during the daytime only, and staff will commute from their accommodations to the exploration site(s).

6.1.10 Decommissioning and Rehabilitation Phase

As soon as exploration activities on EPL 8097 are completed, the Proponent will need to implement measures for site rehabilitation. Exploration on the EPL is concluded once the planned exploration activities have been completed, or may be discontinued before the planned closure due to unfavorable economic conditions or unconvincing exploration results. Decommissioning and rehabilitation are primarily supported by a decommissioning and rehabilitation plan that includes aspects related to safety, health, the environment, and contingencies. The Proponent should ensure that the project is completed in a manner that is environmentally friendly and that the site is rehabilitated.

6.2. PERSONNEL

In total 10 employees will be engaged by the proponent, the majority of them are skilled and semi-skilled workers (general labourers and operators) to be employed in the proposed exploration project. Personnel will be engaged on a 3 week on and 1 week off basis. Exploration activities will take place in daytime only, 8 hours per day, 5 days per week.

7. |PUBLIC CONSULTATION PROCESS:

7.2. PUBLIC CONSULTATION PROCESS PHASE 1

As per the requirements of the EIA Regulations (Section 21) a call for public consultation with all I&APs during the EIA process is required. This entails consultation with members of the public and providing them an opportunity to comment on the proposed project. Stakeholder consultation forms an integral component of an ESA investigation and enables comments on the potential environmental impacts associated with the proposed development and to identify additional issues which they feel should be addressed in the ESA.

Decision-making authorities were consulted during the study, and have been engaged throughout the project process. A background information document was availed to all stakeholders who were consulted to raise any environmental or social concerns regarding the development.

Table 5: Table of Public Consultation Activities

ACTIVITY	REMARKS
Placement of site notice/posters in EPL area	See **Annexure A**
Placing advertisements in two newspapers for two consecutive weeks, namely the Windhoek Observer and Confidente	See **Annexure B**
Written notice to affected landowners and adjacent landowners	**See Annexure D**
Written notice to Interested and Affected Parties via Email	See **Annexure D**

The initial phase of the public consultation process commenced on **22 July 2022** to **12 August 2022**.

7.2. PUBLIC CONSULTATION PROCESS PHASE 2

The second phase of the Public Consultation Process involved the lodging of the Draft Environmental Scoping Report (DESR) to all registered I&AP for comment. Registered and potential I&APs were informed of the availability of the DESR for public comment. I&APs were given time until **18 July 2024** to submit comments or raise any issues or concerns they may have with regard to the proposed project.

8. |ENVIRONMENTAL ASSESSMENT PROCESS:

Impact assessments depend on the nature and magnitude of the proposed activity, as well as the type of environmental control envisaged for the particular project. Given the nature of the proposed activity, the identification and assessment of the potential impacts will be based on the type and scale of the various activities associated with the project.

Assessment of the predicted significance of impacts for a proposed development is by its nature, inherently uncertain. To deal with such uncertainty in a uniform manner, standardised and internationally recognised

methodologies have been developed. One such accepted methodology is applied in this study to assess the significance of the potential environmental impacts of the proposed development, outlined as follows **in Table 9.**

Table 6: Impact Assessment Criteria

CRITERIA	CATEGORY
Impact	Description of the expected impact
Nature Describe type of effect	**Positive**: The activity will have a social / economical / environmental benefit. **Neutral**: The activity will have no effect **Negative**: The activity will have a social / economical / environmental harmful effect
Extent Describe the scale of the impact	**Site Specific**: Expanding only as far as the activity itself (onsite) **Small**: restricted to the site's immediate environment within 1 km of the site (limited) **Medium**: Within 5 km of the site (local) **Large**: Beyond 5 km of the site (regional)
Duration Predicts the lifetime of the impact.	**Temporary**: < 1 year (not including construction) **Short-term**: 1 – 5 years **Medium term**: 5 – 15 years **Long-term**: >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) **Permanent**: Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary
Intensity Describe the magnitude (scale/size) of the Impact	**Zero**: Social and/or natural functions and/ or processes remain unaltered **Very low**: Affects the environment in such a way that natural and/or social functions/processes are not affected **Low**: Natural and/or social functions/processes are slightly altered **Medium**: Natural and/or social functions/processes are notably altered in a modified way **High**: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
Probability of occurrence Describe the probability of the Impact actually occurring	**Improbable**: Not at all likely **Probable**: Distinctive possibility **Highly probable**: Most likely to happen **Definite**: Impact will occur regardless of any prevention measures

CRITERIA	CATEGORY
Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge	**Unsure/Low**: Little confidence regarding information available (<40%) **Probable/Med**: Moderate confidence regarding information available (40-80%) **Definite/High**: Great confidence regarding information available (>80%)
Significance Rating The impact on each component is determined by a combination of the above criteria.	**Neutral**: A potential concern which was found to have no impact when evaluated **Very low**: Impacts will be site specific and temporary with no mitigation necessary. **Low**: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures **Medium**: Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. **High**: Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.

*NOTE: Where applicable, the magnitude of the impact has to be related to the relevant standard (threshold value specified and source referenced). The magnitude of impact is based on specialist knowledge of that particular field. For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are described. These criteria are used to ascertain the SIGNIFICANCE of the impact. The decision as to which combination of alternatives and mitigation measures to apply lies with the proponent, and their acceptance and approval ultimately with the relevant environmental authority.

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. Such significance is also informed by the context of the impact, i.e. the character and identity of the receptor of the impact.

9. |MITIGATION HIERACHY:

The mitigation hierarchy is a widely used tool that guides users towards limiting as far as possible the negative impacts on biodiversity from development projects. It emphasises best-practice of avoiding and minimising any negative impacts, and then restoring sites no longer used by a project, before finally considering offsetting residual impacts.

Following the hierarchy is crucial for all development projects aiming to achieve no overall negative impact on biodiversity or on balance, a net gain – also referred to as no net loss and the net positive approach, respectively. It is based on a series of essential, sequential – but iterative – steps taken throughout the project's life cycle in order to limit any negative impacts on biodiversity.

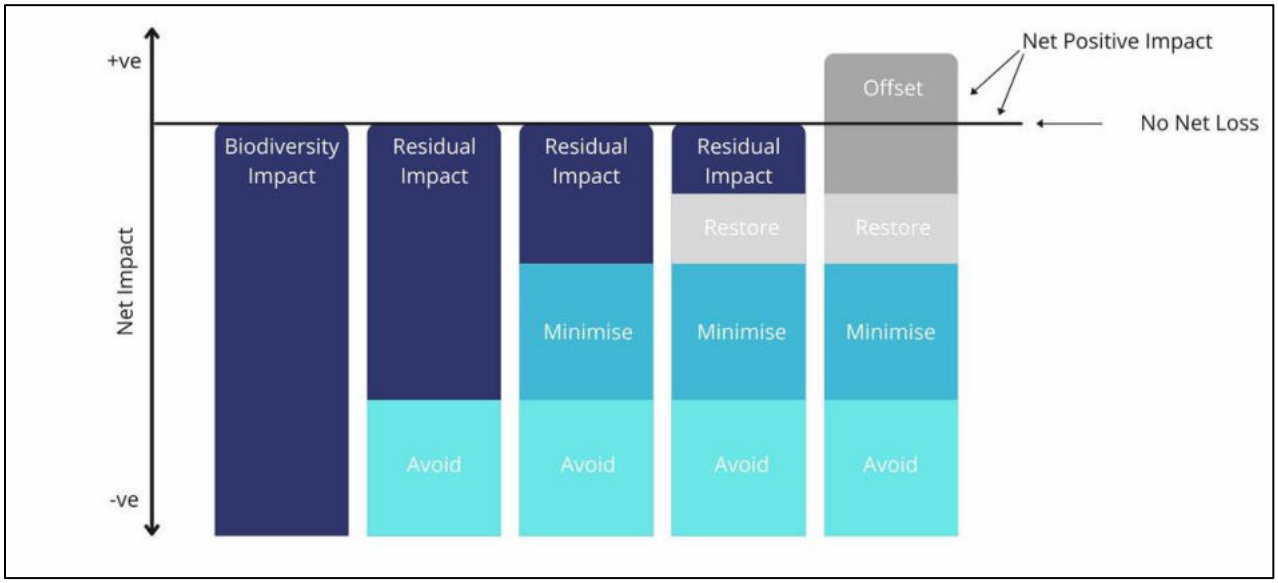

Figure 6: Mitigation Hierarchy

Sequential steps of the mitigation hierarchy

1. Avoidance: the first step of the mitigation hierarchy comprises measures taken to avoid creating impacts from the outset, such as careful spatial placement of infrastructure, or timing construction sensitively to avoid or disturbance. Examples include the placement of roads outside of rare habitats or key species' breeding grounds, or timing of seismic operations when aggregations of whales are not present. Avoidance is often the easiest, cheapest and most effective way of reducing potential negative impacts, but it requires biodiversity to be considered in the early stages of a project.

2. Minimisation: these are measures taken to reduce the duration, intensity and/or extent of impacts that cannot be completely avoided. Effective minimisation can eliminate some negative impacts, such as measures to reduce noise and pollution, designing powerlines to reduce the likelihood of bird electrocutions, or building wildlife crossings on roads.

3. Rehabilitation/restoration: The aim of this step is to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised. Restoration tries to return an area to the original ecosystem that was present before impacts, whereas rehabilitation only aims to restore basic ecological functions and/or ecosystem services – such as through planting trees to stabilise bare soil. Rehabilitation and restoration are frequently needed towards the end of a project's life cycle but may be possible in some areas during operation.

Collectively, avoidance, minimisation and rehabilitation/restoration serve to reduce, as far as possible, the residual impacts that a project has on biodiversity. Typically, however, even after their effective application, additional steps will be required to achieve no overall negative impact or a net gain for biodiversity.

4. Offset: offsetting aims to compensate for any residual, adverse impacts after full implementation of the previous three steps of the mitigation hierarchy. Biodiversity offsets are of two main types: 'restoration offsets' which aim to rehabilitate or restore degraded habitat, and 'averted loss offsets' which aim to reduce or stop biodiversity loss in areas where this is predicted. Offsets are often complex and expensive, so attention to earlier steps in the mitigation hierarchy is usually preferable.

Supporting Conservation Actions: measures taken which have positive – but difficult to quantify – effects on biodiversity. These qualitative outcomes do not fit easily into the mitigation hierarchy, but may provide crucial support to mitigation actions. For example, awareness activities may encourage changes in government policy that are necessary for implementation of novel mitigation, research on threatened species may be essential to designing effective minimisation measures, or capacity building might be necessary for local stakeholders to engage with biodiversity offset implementation

10. |POTENTIAL IMPACTS

This Chapter describes the potential impacts on the biophysical and socio-economic environments, which may occur due to the proposed activities. These include potential impacts which may arise during the planning and design phase, potential construction related impacts (i.e. short to medium term) as well as the operational impacts of the proposed development (i.e. long-term impacts).

The assessment of potential impacts will help to inform and confirm the selection of the preferred project plan and design to be submitted to MET and MME for consideration. Their decision on the environmental acceptability of the proposed project and the setting of conditions of authorisation, should the project be authorised, will be informed by this chapter amongst other information contained in this EA Report.

The baseline and potential impacts that could result from the proposed development are described and assessed with potential mitigation measures recommended. Finally, comment is provided on the potential cumulative impacts which could result should this development, and others like it in the area, be approved.

10.1. PLANNING AND DESIGN PHASE

During the planning and design phase consideration is given to aspects such as surface and groundwater; fauna and flora; infrastructure; access road, traffic, and landowners.

10.1.1 Compliance Requirements

The planned prospecting and exploration activity is listed as a project requiring an environmental assessment as per the listed activities in the National environmental requirements. Conduct an environmental scoping and management plan to comply with the Environmental Management Act (2007) and its regulations of 2012. Identify and address all environmental and social issues. The proposed activities will take place at on EPL 8097. No resettlement of people or communities is expected for the proposed development.

10.1.2 Public Consultation

Consultation with the public forms an integral component of an environmental impact assessment. Initiate participation of Interested and affected parties (I&APs) and develop a database of all stakeholders and I&APs. Inform I&APs and key stakeholders about the proposed development. Identify issues and concerns of key stakeholders and I&APs with regards to the proposed development. Develop a communication structure with stakeholder and I&APs.

10.1.3 Environmental Awareness

Ensure that all persons involved in the project are aware of, and are familiar with the environmental requirements for the project. Develop and implement environmental emergency preparedness procedures.

10.1.4 Health and Safety Aspects

Ensure that all persons involved in the project are aware of, and are familiar with the environmental requirements for the project. Establish personnel protection standards and mandatory safety practices and procedures for the field activities related to Corrective Actions at the site. Establish the lines of communication among contractors and subcontractors involved in work operations for safety and health matters.

Conduct HIV /Aids Awareness Programmes on site for not less than 90% of workers inclusive of all direct and indirect costs. Provide and maintain condom dispenser. Provide and maintain HIVÁIDS awareness posters. Provide information regarding the voluntary testing of construction workers and counselling, support and care.

10.2. OPERATIONAL PHASE

During the construction phase the following potential impacts have been identified: fauna and flora; pressure on the infrastructure; surface and ground water; health, safety and security impacts; air quality; noise, traffic; solid waste management; hazardous substances; and social impact.

10.2.1 Fauna and Flora

While some of the vegetation (mainly weedy species and bushes) may have to be cleared or removed for exploration activities, it is recommended that, where feasible, trees found at the project area should be kept and maintained as far as possible. The trees that are to be kept should be clearly marked with “danger tape” or a similar marker to prevent accidental removal, regular inspection of the marking tool should be carried out. The very important trees should be “camped off” to prevent the unintended removal or damage.

10.2.2 Pressure on Infrastructure

During the prospecting and exploration phase there will be an additional demand for basic services such as water, electricity and sewer. The services will be used for both human consumption and for exploration purposes. The risk of stress on the resource, wastage and pollution may occur if no proper management actions are implemented.

10.2.3 Surface and Ground Water

Surface and ground water impacts may be encountered during the prospecting and exploration phase, especially if exploration takes place during the rainy season. The risk of contaminating such water sources can be increased by

spillage and leakages of oils and fuels and any other equipment used during construction; chemical contamination from construction materials such as cement, paint and mechanical fluids.

10.2.4 Health, Safety and Security

Due to a high demand of prospecting and exploration workers during this phase of the project, the deployment of a temporary workforce may be necessary. These types of projects, where prospecting and exploration contractors / workers have the opportunity to interact with the local community, create a significant risk for the development of social conditions and behaviours that contribute to the spread of conditions such as HIV and AIDS. The Ministry of Environment and Tourism has thus initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.

10.2.5 Air Quality

During the prospecting and exploration phase fugitive dust and exhaust gases generated have a potential impact on the air quality of the area and its surroundings. Dust is a major component of air pollution and could negatively affect the health of nearby communities if not mitigated. Dust is generated mainly from the following activities:

- Excavations, drilling and clearing of exploration areas;
- Use of heavy vehicles, machinery and equipment;
- Procurement and transport of materials to the site.

These are however short-term impacts limited to the prospecting and exploration phase of the project.

10.2.6 Noise

Noise is perceived as one of the most undesirable consequences of prospecting and exploration activities. The prospecting and exploration for minerals will result in associated noise impacts. These noise impacts will mainly be associated with exploration machinery, vehicles and equipment. Given that the land use in the area is farming, agriculture and tourism, the inhabitants will be impacted. The impact is however limited to the prospecting and exploration period only.

10.2.7 Traffic

Traffic is expected to increase during the prospecting and exploration phase of the project. A number of trucks, vehicles, equipment and other heavy machinery will be utilised during this phase. Not only will the increase in traffic result in associated noise impacts, it will also impact on the vehicular traffic in the area, in particular along

the D3712 road. The safety of road users needs to be considered. The use of slow moving heavy trucks has the potential to cause traffic jams.

10.2.8 Solid Waste Management

The prospecting and exploration activities will likely generate a reasonable amount of solid waste. An adequate number of refuse receptacles should be placed at strategic location at the project site as well as the workers' camp for the collection of waste, which should be emptied frequently and taken to the designated landfill site. These receptacles should be of a type that can be closed to prevent scavenging by birds and animals. Oils, lubricant etc. will be separately collected and reused where feasible or else removed from site to be recycled.

10.2.9 Storage and Utilisation of Hazardous Substances

Hazardous substances are regarded by the Hazardous Substance Ordinance (No. 14 of 1974) as those substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure in certain circumstances. It covers manufacture, sale, use, disposal and dumping as well as import and export. During the prospecting and exploration period, the on-site use and storage of these types of hazardous substances, such as oils, lubricants, curing compounds, types of solvents, primers, adhesives and diesel, could have a negative impact on the surrounding environment, if these substances spill and enter the environment.

10.2.10 Quality of Life

The proposed prospecting and exploration will serve as an important economic activity that provides jobs. This will have a positive impact on the quality of life of the workers in terms of household incomes, but also the contribution to the regional economy and Gross Domestic Product of the country.

10.2.11 Visual and Sense of Place

The prospecting and exploration activities may be visually prominent from some angles and could thus have an impact on the sense of place of the local community. Lighting at night could be disturbing to the neighbouring communities and fauna.

10.2.12 Social Impacts

Poaching of wildlife, stock theft, alcohol and drug smuggling are some of the risks posed by the deployment of prospecting and exploration workforce. Control of the movement of these workers is imperative to avoid a negative impact in the local community.

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10.4. CLOSURE AND REHABILITATION

Numerous mines in the country have been abandoned after ceasing operations, leaving the government to take over liability for rehabilitation often after substantial environmental damage has been done. It is therefore critical that mines engage in closure planning as early as possible in their operational life (CMN, 2010).

The Chamber of Mines of Namibia has developed the Namibian Mine Closure Framework that provides minimum standards and guidance for mining companies to come up with relevant and practical closure plans. The framework addresses the need to:

- conform to current legislative requirements
- consult with a variety of stakeholders to derive a widely acceptable social, economic and environmental closure outcome
- develop an optimal closure strategy based on envisaged and agreed final post-mining social and environmental conditions
- develop a plan of practical closure actions, incorporating the optimal strategy
- provide all the necessary financial, knowledge and skills resources at implementation of the closure plan
- have a formal relinquishment process in place releasing the mining company from future obligations when closure outcomes have been accepted and achieved.

A National Environment Restoration Fund is being proposed in the Amendments to the Environmental Management Act of 2007. The proponent is advised to contribute to such, pre or post establishment.

11. |ENVIRONMENTAL IMPACT EVALUATION

The Environmental Scoping Assessment sets out potential positive and negative environmental impacts associated with the proposed development. The following assessment methodology will be used to examine each impact identified, see Table 7.

Table 7: Impact Evaluation Criterion (DEAT 2006)

Criteria	Rating (Severity)	
Impact Type	**+VE**	Positive
	0	No Impact
	-VE	Negative
Significance of impact being either	**L**	Low (Little or no impact)
	M	Medium (Manageable impacts).
	H	High (Adverse impact).

Probability:	**Duration:**
5 - Definite/don't know	5 - Permanent
4 - Highly probable	4 - Long-term (impact ceases
3 - Medium probability	3 - Medium-term (5-15 years)
2 - Low probability	2 - Short-term (0-5 years)
1 – Improbable	1 - Immediate
0 – None	
Scale:	**Magnitude:**
5 – International	10 - Very high/don't know
4 – National	8 - High
3 – Regional	6 - Moderate
2 – Local	4 - Low
1 - Site only	2 - Minor
	0 - None

For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are described. These criteria are used to ascertain the SIGNIFICANCE of the impact. The decision as to which combination of alternatives and mitigation measures to apply lies with the proponent, and their acceptance and approval ultimately with the relevant environmental authority.

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. Such significance is also informed by the context of the impact, i.e. the character and identity of the receptor of the impact.

11.1. OPERATIONAL PHASE

11.1.1 Dust Pollution and Air Quality

Dust will be generated during the prospecting and exploration phase and might be worse during the winter months when strong winds occur. Dust problems are expected to be site specific and may pose a slight nuisance to the neighbouring farms and the main access road users. Dust is regarded as a nuisance as it reduces visibility and affects the human health. Excessive air pollution in the form of emissions from prospecting and exploration vehicles and equipment may also deteriorate air quality in the area.

Proposed Mitigation Measures

- Use appropriate dust suppression measures when dust generation is unavoidable, e.g. dampening with water, particularly during prolonged periods of dry weather.
- Prospecting and exploration vehicles to only use designated roads.
- During high wind conditions the exploration contractor must make the decision to cease works until the wind has calmed down.
- Cover any stockpiles with plastic to minimise windblown dust.
- Provide workers with dust masks.
- Ensure construction vehicles are well maintained to prevent excessive emission of smoke.
- Ensure all vehicle, plant and equipment are in good condition.
- Encourage reduction of engine idling

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Dust	-VE	1	2	6	3	L	L

11.1.2 Noise Impact

Noise pollution due to exploration vehicles, equipment and machinery will be generated. An increase of ambient noise levels at the exploration site is expected. Noise generated may impact neighbouring communities and fauna.

Proposed Mitigation Measures

- Inform neighbouring farms and communities of prospecting and exploration activities to commence and provide for continuous communication between the farmers and communities; and contractor(s).
- Limit construction times to acceptable daylight hours.
- Install technology such as silencers on construction machinery.
- Do not allow the use of horns as a general communication tool, but use it only where necessary as a safety measure.
- Ensure proper maintenance is conducted on vehicles to ensure the reduction of noise emission.
- The workers should be equipped with ear protection equipment.
- Audio equipment (if any) should not be played at levels considered intrusive by others.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Noise	-VE	1	1	4	3	L	L

11.1.3 Safety & Security

Safety issues could arise from the prospecting and exploration vehicles, earthmoving equipment and tools that will be used at the project site. This increases the possibility of injuries and the contractor must ensure that all staff members are made aware of the potential risks of injuries on site. Exploration and camp sites usually house material and equipment which may attract criminal activities.

Proposed Mitigation Measures

- Provide suitable emergency and safety signage on site (manufactured of durable, weatherproof material). The signage signs should be placed at strategic locations to ensure awareness.
- Demarcate and barricade any areas which may pose a safety risk (including hazardous substances, deep excavations etc). These notices must be worded in English and the local language.
- Enforce the use of appropriate Personal Protective Equipment (PPE) for the right task or duties at all times.
- Prevent illegal access to the exploration sites by implementing appropriate security measures.
- Equipment housed at the project site must be placed in a way that does not encourage criminal activities.
- Sensitize operators of exploration earthmoving, machinery equipment and tools to switch off engines of vehicles or machinery not being used.

- The contractor is advised to ensure that the team is equipped with first aid kits and that they are available on site, at all times.
- Adequate lighting within and around the exploration site should be erected, when visibility becomes an issue.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Safety & Security	-VE	1	1	4	2	M	L

11.1.4 Traffic

Prospecting and exploration vehicles will access the project site from the main access road. A slight nuisance might be experienced by motorists using this road. This will most likely be caused by slow moving vehicles frequenting the exploration site.

Proposed Mitigation Measures

- Install and maintain official traffic signalling (where necessary) along the main road.
- Speed limit must be adhered to, to minimise accidents.
- Prospecting and exploration vehicles and machinery must be tagged with reflective signs or tapes to maximise visibility and avoid accidents.
- Exploration vehicles should not be allowed to obstruct the road, hence no stopping in the road, wholly or partially, but rather pull off the road or park on the roadside.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Traffic	-VE	1	2	2	2	L	L

11.1.5 Groundwater

Groundwater quality could be impacted through leachate of petroleum, chemical, harmful and hazardous substances. In particular, oil leakages, diesel, lubricants and grease from vehicles, equipment and machinery utilised

during the prospecting and exploration phase may occur. Care must be taken to avoid contamination of soil and groundwater.

Proposed Mitigation Measures

- Prevent spillages of any chemicals and petroleum products (i.e. oils, lubricants, petrol and diesel). Use drip trays, linings or concrete floors when evidence of leaks are observed on vehicles or equipment.
- All fuelling, storage and chemical handling should be conducted on surfaces provided for this purpose. Drip trays, linings or concrete floors must be used when removing oil from machinery.
- Spillage control procedures must be in place according to relevant SANS standards or better. Waste water collection systems should be connected to these systems.
- Portable ablution facilities will be installed, hence adequate containment systems should be erected for these facilities.
- Waste should properly be contained to avoid any leakages and/or spillages, and should regularly be disposed of at a suitable sewage disposal site. Run-off from these toilets due to overflows should be avoided at all cost.
- Proper environmental awareness and remedial response training of operators must be conducted on a regular basis.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Groundwater	-VE	2	2	4	2	M	L

11.1.6 Surface Water

Local drainage is well developed and run-off takes place. The relief of significant small dry river courses (streams) running in the area remain relevant, and contribute well to the drainage of surface run-off in the area. Contaminants in the form of oil leakages, diesel, lubricants and grease from equipment and machinery may occur during the prospecting and exploration phase.

Proposed Mitigation Measures

- Use drip trays, linings or concrete floors when evidence of leaks are observed on exploration vehicles or equipment.
- Any spillage of hazardous substances including fuel, oil, paint or cleaning solvent must be cleaned up immediately, stored and disposed of at a designated disposal facility.
- Prevent discharge of any pollutants, such as chemicals, and hydrocarbons into the nearby water ways and courses.

- Properly secure all portable toilets (if any) to the ground to prevent them toppling due to wind or any other cause.
- Ensure that no spillages occur when the toilets are cleaned or emptied. Prohibit urination on site, other than at designated facilities.
- Stabilise cleared areas as soon as possible to prevent and control surface erosion.
- Proper environmental awareness and remedial response training of operators must be conducted on a regular basis.
- An emergency plan should be in place on how to deal with spillages and leakages during this phase.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Surface water	-VE	2	2	4	2	M	L

11.1.7 Generation of Waste

Waste material will be generated during the prospecting and exploration activities. Waste in the form of rock cuttings, pipe cuttings, electrical cuttings, oil spills or leakages of petroleum products might occur during the exploration phase.

Proposed Mitigation Measures

- Ensure that sufficient weather- and vermin- proof bins / containers are present on site for the disposal of solid waste. Waste and litter generated during this phase must be placed in these disposal bins.
- The Contractor shall institute a waste control and removal system for the site.
- No disposal of /or burying of waste on site should be conducted. No waste should be burned on site.
- Hazardous waste storage is to be clearly marked to indicate the presence of hazardous substances, and the protocols associated with handling of such hazardous wastes shall be known by all relevant staff members.
- Regular inspection and housekeeping procedure monitoring should be maintained at all times.
- Awareness of the hazardous nature of various types of waste should be enforced.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated

Waste Generation	-VE	1	2	6	4	M	L

11.1.8 Heritage Impacts

The assessment of EPL 8097 revealed the presence of various Heritage Resources, including two burial sites on farm Odongontje 42, scattered stone tools, caves, prints on sandstone, and other artifacts on farms such as Omburo West I 50, Omburo West II 43, Omburo Sud 69, and Omburo Nord Ost 69. The Heritage Resources discovered in EPL 8097 contribute significantly to the cultural and historical richness of the region. The Burial Sites, although rated with high significance and vulnerability, are located outside the Exploration Target Area and do not pose an immediate threat to exploration activities.

Proposed Mitigation Measures

- If any further remains or objects with cultural values (e.g. bones, weapons, ancient cutlery, graves etc) are uncovered at the project location or surrounding, it should be barricaded off, and
- The relevant authorities (i.e. the local police and National Heritage Council of Namibia) should be contacted immediately.
- The Chance Find Procedures should then be followed.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Heritage	-VE	1	1	2	2	L	L

11.1.9 Ecological Impacts

The project area is free of sensitive flora and fauna. While some of the vegetation (mainly weedy species and bushes) may have to be cleared or removed for exploration activities.

Proposed Mitigation Measures

- Where feasible, trees found at the project area should be kept and maintained as far as possible.
- Disturbance of areas outside the designated working zone is not allowed.
- No vegetation should be removed outside the designated project area.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Ecology	-VE	1	1	2	2	L	L

11.1.10 Socio-Economic Aspects

Employment opportunities are anticipated to be created during the exploration, both directly through employment of workers and indirectly through suppliers and service providers to the project site.

Proposed Mitigation Measures

- The exploration contractor should be sourced from the area, or region at large (where feasible).
- The exploration workers should be sourced from the area, or region at large (where feasible).
- Suppliers of exploration materials should be sourced from the area, or region at large (where feasible).
- Locally source services required during the exploration process, such as securities, rental of portable toilets, plant hire, etc.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Socio-economic	-VE	1	1	6	4	L	L

Summary of all potential impacts during the prospecting and exploration phase:

In general, impacts are expected to be low to medium, mostly short lived and site specific. Mitigation options recommended in the Environmental Management Plan (EMP) will guide and ensure that the impacts of the prospecting and exploration activities are minimised.

The appointed contractor should be made aware of the content and environmental.

11.2. DECOMMISSIONING PHASE

Develop a closure plan within first 12 months of operation. Closure plan to address issues as per the Namibian Mine Closure Framework. The Environmental Management Plan for this phase will have to be reviewed at the time of decommissioning to cater for changes made to the project.

12. CUMMULATIVE IMPACTS

Possible cumulative impacts associated with the construction phase include an increase in traffic visiting the site. An increase in emissions from these vehicles will be experienced, decreasing the air quality in the area. Wear and tear on the roads could be expected, coupled with increased risks of road traffic incidences.

Impact Evaluation:

Aspect	Impact Type	Scale	Duration	Magnitude	Probability	Significance	
						Unmitigated	Mitigated
Cummulative impacts	-VE	2	2	6	2	L	L

13. ENVIRONMENTAL MANAGEMENT PLAN

The Environmental Management Plan (EMP) provides management options to ensure impacts of the proposed development are minimised. An EMP is an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented, and the positive benefits of the projects are enhanced.

The objectives of the EMP are:

- to include all components of the development;
- to prescribe the best practicable control methods to lessen the environmental impacts associated with the construction of the development;
- to monitor and audit the performance of construction personnel in applying such controls; and
- to ensure that appropriate environmental training is provided to responsible construction personnel.

The EMP acts as a stand-alone document, which can be used during the prospecting and exploration phase. All contractors taking part in the project should be made aware of the contents of the EMP. The EMP is attached as Annexure F.

14. CONCLUSIONS

In general, the planned prospecting and exploration activities would pose limited environmental and social risks. All environmental risks can be minimised and managed through implementing preventative measures and sound management systems. It is recommended that this information be made available to the relevant authorities and stakeholders on a regular basis. The Environmental Management Plan should be used as an on-site tool during this project. Future environmental audits should be carried out to ensure compliance of the EMP and environmental regulations of Namibia. Parties responsible for non-conformances of the EMP will be held responsible for any rehabilitation that may need to be undertaken.

The environmental clearance is valid for 3 years only, as per the environmental management act No.7 of 2007, thus it is the responsibility of the proponent to commission an application for renewal of the permit by submitting an updated ESA/EMP document before it expires.

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