

Environmental and Social Scoping Assessment for



Environmental Clearance Certificate (ECC) Application: The Greenfield and Brownfield Exploration Activities on Exclusive Prospecting License (EPL) EPL No. 8787 near Warmbad Area, Karas Region - Namibia

| | |
|--|---|
| ENVIRONMENTAL ASSESSMENT PRACTITIONER | OMAVI Geotechnical & Environmental Services P.O Box 1642, Windhoek Email: info@omavi.com.na Tel: +264814786303 |
| PROPONENT | Tokai Investments cc P.O Box 26377 Windhoek, Namibia |
| ECC APPLICATION NO. | APP-000748 |
| SUBMITTED ON | January 2023 |
| DOCUMENT VERSION | FINAL for MEFT Evaluation |
| Copyright: | <i>This report and the information it contains is subject to copyright and may not be reproduced or copied in whole or part without written consent of the authors.</i> |
| Disclaimer: | <i>The data and information contained in this report is based on information provided by the project proponent, and is deemed to be correct. OMAVI shall not be held liable for any incorrect information/ data provided by the project proponent</i> |

Table of Contents

| | | |
|-------|---|----|
| 1 | INTRODUCTION | 1 |
| 1.1 | General Overview | 1 |
| 1.2 | Why is the Environmental and Social Scoping Assessment (ESSA) needed? ... | 1 |
| 1.3 | About the Project Proponent | 3 |
| 1.4 | About the Environmental Assessment Practitioner | 3 |
| 1.5 | Need and Desirability of the Project..... | 4 |
| 2 | PROJECT BACKGROUND AND description OF CURRENT + PLANNED ACTIVITIES..... | 4 |
| 2.1 | Project Location..... | 4 |
| 2.2 | Project Background and Description of Activities | 6 |
| 2.2.1 | Desktop Review and Study..... | 7 |
| 2.2.2 | Site Reconnaissance, Stream/ Soil/ Grab Sampling and Mapping | 8 |
| 2.2.3 | Geophysical surveys | 9 |
| 2.2.4 | Intrusive Exploration..... | 9 |
| 2.2.5 | Project Input Infrastructure and Equipment | 9 |
| 3 | PROJECT ALTERNATIVES | 11 |
| 3.1.1 | Limitations to the Project Alternatives | 11 |
| 3.1.2 | Project Locality Alternatives | 12 |
| 3.1.3 | Exploration Technologies and Supporting Services | 12 |
| 3.1.4 | No-Go Alternative | 14 |
| 4 | APPLICABLE REGULATORY FRAMEWORK | 15 |
| 4.1 | National Legislation..... | 15 |
| 5 | DESCRIPTION OF THE RECEIVING ENVIRONMENT | 26 |
| 5.1 | Physical Environment | 26 |
| 5.1.1 | Climatic Conditions..... | 26 |
| 5.1.2 | Geology..... | 28 |
| 5.1.3 | Water Resources: Surface Water and Groundwater | 30 |
| 5.1.4 | Topography, Landscape and Soils | 31 |
| 5.1.5 | Air Quality and Wind | 33 |
| 5.2 | Biological Environment | 34 |
| 5.2.1 | Biodiversity..... | 34 |
| 5.3 | Socio-Economic Aspects | 37 |
| 5.3.1 | Demographic Aspects | 37 |
| 5.3.2 | Education and Employment | 38 |
| 5.3.3 | Economic Activities | 38 |
| 5.3.4 | Land Use | 38 |
| 5.3.5 | Infrastructure & Utilities..... | 38 |
| 5.3.6 | Archaeology and Heritage Aspect | 39 |
| 6 | PUBLIC CONSULTATION PROCESS | 43 |

| | | |
|-----|--|----|
| 6.1 | Registered Interested and Affected Parties (I&APs) | 43 |
| 6.2 | Summary of Activities Undertaken | 44 |
| 7 | IMPACT IDENTIFICATION AND ASSESSMENT | 46 |
| 7.1 | Key impacts Identified | 46 |
| 7.2 | Impact Assessment Methodology | 46 |
| 7.3 | Assessment of Impacts..... | 48 |
| 8 | CONCLUSIONS..... | 70 |
| 8.1 | Conclusions and Recommendations | 70 |
| 9 | REFERENCES..... | 71 |

List of Figures

| | | |
|--------------|--|----|
| Figure 1-1: | The status of the EPL on the Mining Cadastre Portal (source: https://maps.landfolio.com/Namibia/ | 3 |
| Figure 2-1: | Locality and layout boundaries of EPL 8787..... | 5 |
| Figure 2-2: | Locality map with farms covered by EPL 8787. | 5 |
| Figure 5-1: | The average temperature chart for Warmbad Area (source: Meteoblue, 2023)..... | 27 |
| Figure 5-2: | The Yearly rainfall and rainy days as well as average rainfall charts for Warmbad Area (source: Meteoblue, 2023) | 28 |
| Figure 5-3: | The regional and local geology, mineral occurrences, and structures underlying the license area (Data source: Geological Survey of Namibia) | 29 |
| Figure 5-4: | The geological conditions of the EPL and immediate surroundings | 30 |
| Figure 5-5: | The hydrological and hydrogeological conditions of the EPL and surroundings..... | 31 |
| Figure 5-6: | The topographic and landscape map of the EPL and surroundings..... | 32 |
| Figure 5-7: | The topographic view of some visited areas of the EPL | 32 |
| Figure 5-8: | The dominant soil map on the EPL | 33 |
| Figure 5-9: | The light-brown and grey sandy gravel soils on some visited areas of the EPL | 33 |
| Figure 5-10: | The wind rose and wind speed chart of the project area (Meteoblue, 2023) | 34 |
| Figure 5-11: | The Comparison of number of species in each major group of organisms, as represented in the OFRB (A), with their total number of species known from Namibia (B) (Irish, 2008)..... | 35 |
| Figure 5-12: | The wildlife observed within the EPL in January 2023 | 36 |
| Figure 5-13: | The vegetation map of the EPL area..... | 36 |
| Figure 5-14: | The vegetation types within the EPL area | 37 |
| Figure 5-15: | The archaeology and heritage map of the EPL area..... | 40 |
| Figure 5-16: | All the recorded heritage resources in the surveyed areas of EPL 8787 (TARO Archaeology & Heritage Consultants, 2023) | 42 |

List of Tables

| | |
|--|----|
| Table 2-1: The GPS corner coordinates of EPL 8787 | 6 |
| Table 3-1: Service infrastructure alternatives considered for exploration on the EPL ... | 13 |
| Table 4-1. Applicable legislation (laws and regulations), policies and guidelines to the project | 16 |
| Table 6-1. Summary of key issues and concerns raised in relation to activities on EPL 8787 | 45 |
| Table 7-1: Impact Screening Criteria | 47 |
| Table 7-2: Impact Rating Criteria | 48 |
| Table 7-3: Assessment of the potential impacts stemming from the proposed exploration activities..... | 49 |

List of Appendices / Attachments

Appendix A: Copy of the ECC Application submitted to MEFT

Appendix B: CV OF EAP

Appendix C: Consent Letters/ Documentation from Relevant Authorities (MME and National Heritage Council)

Appendix D: Proof of Consultation (Notices, Adverts, Stakeholder List, and Meetings)

Appendix E: Original Formats of Issues, Concerns and Comments as Received From the I&APs

Appendix F: Comments and Responses Trail

Appendix G: Confirmation of Screening Notice Received (through Email) in terms of Assessment Procedures (Section 35 (1)(A)(B) of the Environmental Management Act, No. 7 of 2007)

LIST OF ABBREVIATIONS

| | |
|------------------|--|
| DEAF | Department of Environmental Affairs and Forestry |
| ESSA | Environmental and Social Scoping Assessment |
| EIA | Environmental Impact Assessment |
| EMRP | Environmental Management & Rehabilitation Plan |
| EMA | Environmental Management Act |
| ECC | Environmental Clearance Certificate |
| I&APs | Interested and Affected Parties |
| MAWLR | Ministry of Agriculture, Water & Land Reform |
| MEFT | Ministry of Environment, Forestry and Tourism |
| MLIEC | Ministry of Labour, Industrial Relations and Employment Creation |
| MME | Ministry of Mines and Energy |
| MWT | Ministry of Works and Transport |
| SWM | Solid Waste Management |

1 INTRODUCTION

1.1 General Overview

This Environmental Scoping Assessment (ESA) report is prepared to support the application for Environmental Clearance Certificate (ECC) for the proposed mineral prospecting activities on Exclusive Prospecting License (EPL) 8787 south of Warmbad in the //Karas Region. The report provides perspective on the envisaged exploration approach and techniques, the receiving environment, how the different exploration techniques would interact with the receiving environment, and what positive and adverse impacts those activities will potentially trigger. Alternatives are considered in regard to various aspects (such as location, the technology to be used, etc.), and the various impacts identified to be of significance are systematically assessed.

For completeness, this report should be read and evaluated with all attachments highlighted above as well as the accompanying Environmental Management and Rehabilitation Plan (EMP).

1.2 Why is the Environmental and Social Scoping Assessment (ESSA) needed?

In terms of the Environmental Management Act (EMA) of 2007 and the Environmental Impact Assessment Regulations of 2012, all mineral prospecting activities are classified as listed activities which may not be undertaken without a valid Environmental Clearance Certificate (ECC) issued by the office of the Environmental Commissioner. The provision of such listed activities in the EMA is as follows:

Mining and quarrying activities

- **Activity 3.1 (Mining and Quarrying Activities):** *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. This bears relevance to the concerned project because the planned activities may entail the installation and construction of temporary exploration camps, access tracks as well as temporary working platforms.*
- **Activity 3.2 (Mining and Quarrying Activities):** *Other forms of mining or extraction of any natural resource whether regulated by law or not. This bears relevance to the concerned project because soil and rock material will be*

extracted from within the license area's footprint in the form of soil and rock samples for geochemical testing, rock core, geotechnical testing, etc.

- **Activity 3.3 (Mining and Quarrying Activities):** *Resource extraction, manipulation, conservation, and related activities. This bears relevance to the concerned project because mineral resources will be extracted from within the license area over the prospecting stage duration for drilling, trenching, pitting and testing purposes.*
- **Activity 8.1 (Water Resources Development):** *The abstraction of ground or surface water for industrial or commercial purposes. This bears relevance to the concerned project because surface water would be abstracted from existing water supply sources such as the Orange River for exploration drilling, to meet domestic water requirements for the exploration camps, and to supplement any drilling and metallurgical test work for latter stages of the prospecting phase.*
- **Activity 10.1 (Infrastructure development):** *The construction of public roads and motor vehicle tracks. This bears relevance to the concerned project because access tracks for vehicles and drilling rigs may be created where existing tracks cannot be utilized.*

To support the application for an ECC, an Environmental Scoping Assessment (ESA) study must be carried out to understand how the planned project activities will interact with the current and future biophysical and socio-economic environment, and what positive and negative impacts those activities may trigger in the environment. After the ESA study a project specific EMP shall be compiled which provides the necessary and appropriate impact management measures for all significant impacts which could be generated by the project. The two reports shall then be submitted to the Department of Environmental Affairs and Forestry (DEAF) for scrutiny to allow the DEAF to make an informed and knowledge-based decision on the issuance of an ECC. The issuance of the ECC will then enable the Ministry of Mines and Energy (MME) to decide on the granting of EPL-8787 to the Proponent, as the status of the EPL application on the Mining Cadastre indicates 'pending ECC'- Figure 1-1.

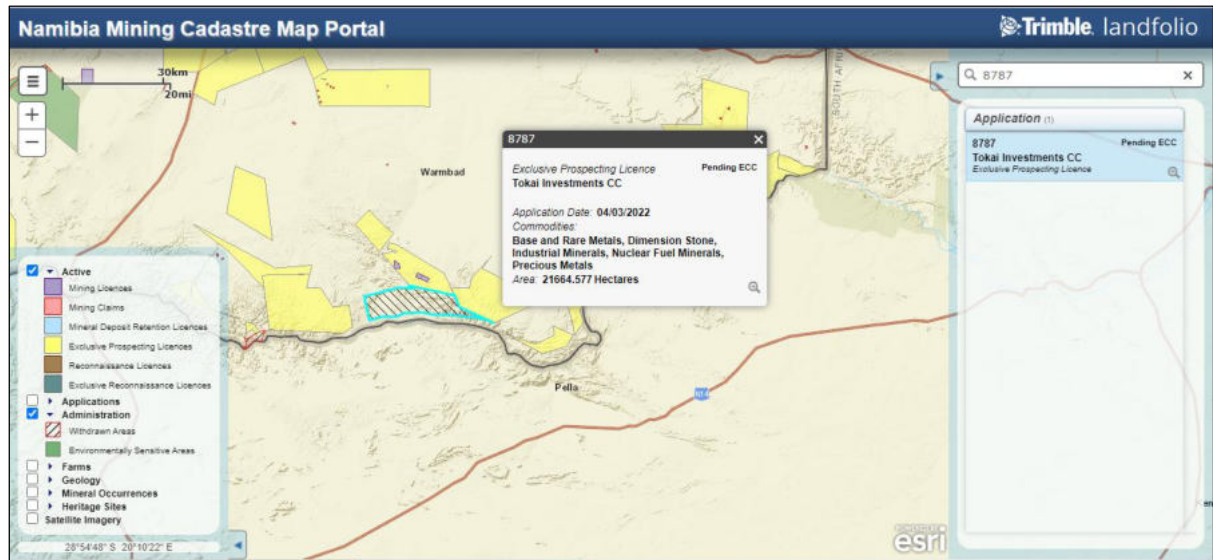


Figure 1-1: The status of the EPL on the Mining Cadastre Portal (source: <https://maps.landfolio.com/Namibia/>)

1.3 About the Project Proponent

Tokai Investments is the sole holder of EPL 8787 and will work directly with a reputable third-party partner who may provide the necessary technical support in the implementation of the planned exploration activities.

1.4 About the Environmental Assessment Practitioner

OMAVI Geotechnical & Environmental Services was appointed by the license holder to undertake an Environmental Scoping Assessment (ESA) and prepare the project-specific Environmental Management Plan (EMP) for the proposed non-invasive and invasive prospecting activities, in accordance with the Environmental Management Act of 2007 and its 2012 EIA regulations. OMAVI Geotechnical & Environmental Services is a specialist environmental consulting entity, with considerable industry experience in environmental compliance and environment management of exploration and mining projects. Our team of scientists possesses the right set of interpersonal, technical and analytical skills which holistically ensure that we understand, in an integrated manner, how a set of planned activities would interact with the biophysical, socio-economic and political landscape within which such activities are envisioned to take place.

At OMAVI we are grounded in the idea that a balance between socio-economic development and environmental protection can be achieved through proactive and integrated planning whereby project activities are designed, planned and implemented with due consideration to minimize adverse environmental and socio-economic impacts, as well as with closure and rehabilitation principles in mind.

1.5 Need and Desirability of the Project

Mining is Namibia's leading economic sector, and roughly accounts for 10% of Namibia's GDP every year. The proposed prospecting activities on EPL 8787 have potential to yield results which could lead to the development of a mine if economically viable deposits are discovered. If economically viable deposits of nuclear fuel minerals (such as Uranium) and renewable energy critical metals (such as Lithium, Tantalum etc.) are discovered on this property, the Namibian economy would benefit significantly from revenues generated through royalties, license rental levies and taxes to the government, procurement opportunities to local small and medium enterprises, and employment opportunities for the poverty stricken community of Warmbad and the broader Karas Region communities.

2 PROJECT BACKGROUND AND DESCRIPTION OF CURRENT + PLANNED ACTIVITIES

2.1 Project Location

The EPL area is partly situated in the Karasburg West and partly in the Karasburg East constituency of the Karas Region, approximately 40km directly south of Warmbad along a straight-line trajectory. The license area can be accessed via existing gravel roads such as the D208 and D292. The license covers an area of approximately 21,664.577 Hectares (Ha) and extends over 4 farms, namely:

- Farm Houms Revier No. 133
- Farm Girtis No. 109
- Farm Hartebeestmund No. 108 and
- Farm Kumkum No. 472

The southern boundary of the license area lies along the Orange perennial river.

Locality of the exclusive license area provided is shown on the maps in Figure 2-1 and Figure 2-2.

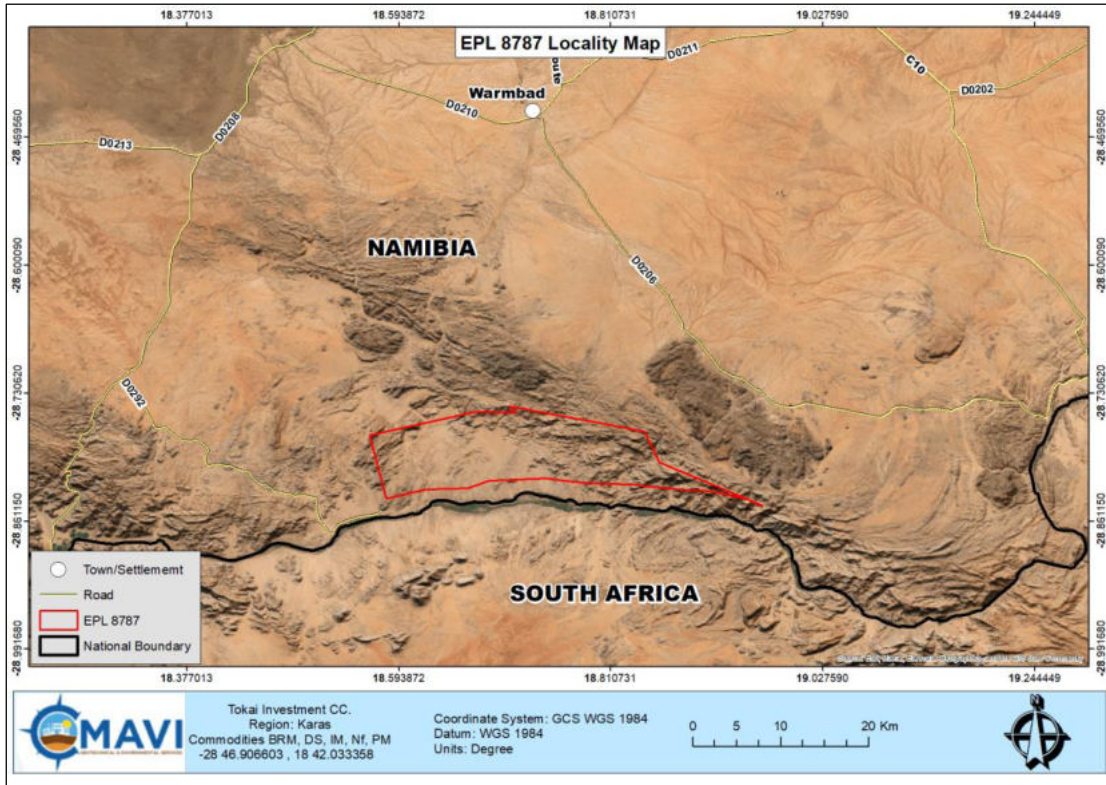


Figure 2-1: Locality and layout boundaries of EPL 8787.

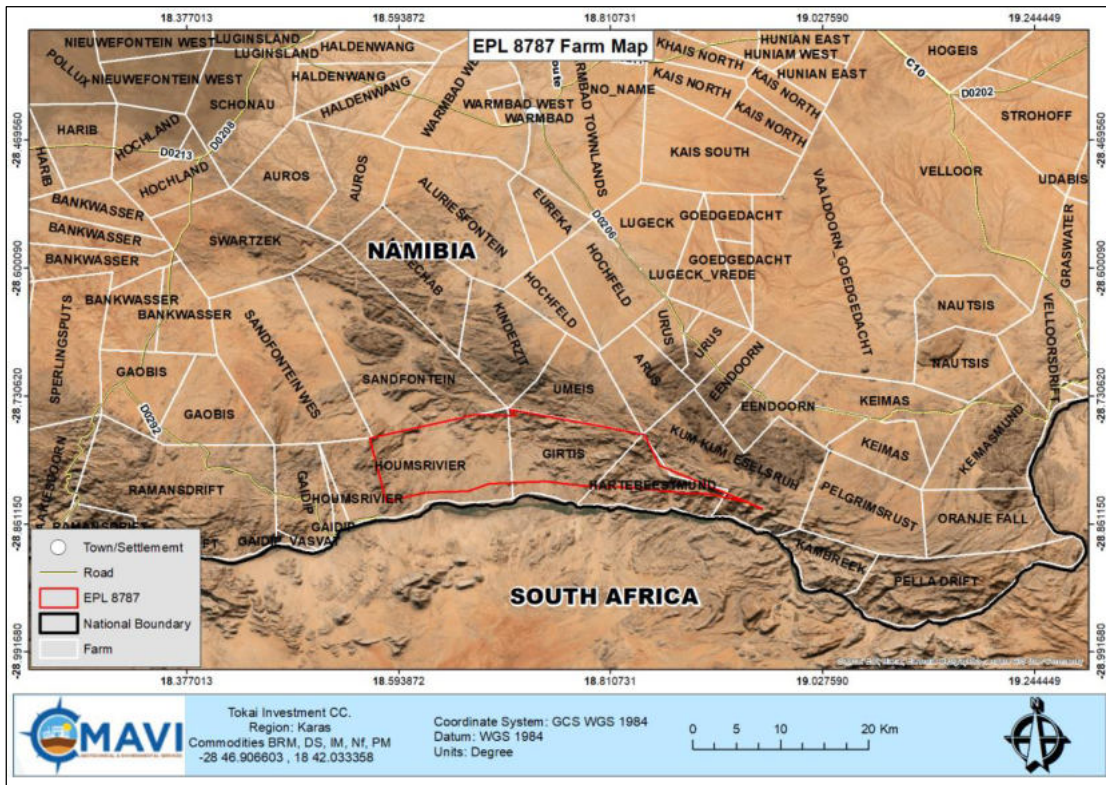


Figure 2-2: Locality map with farms covered by EPL 8787.

The approximate corner coordinates of EPL-8787 are presented in Table 2-1.

Table 2-1: The GPS corner coordinates of EPL 8787

| EPL Corner Point | GPS Coordinates | EPL Corner Point | GPS Coordinates |
|------------------|--------------------------|------------------|--------------------------|
| 1 | 28.772921°S/ 18.562385°E | 8 | 28.840298°S/ 18.950449°E |
| 2 | 28.838778°S/ 18.580690°E | 9 | 28.845730°S/ 18.963403°E |
| 3 | 28.828791°S/ 18.621546°E | 10 | 28.842642°S/ 18.967012°E |
| 4 | 28.827517°S/ 18.665091°E | 11 | 28.801107°S/ 18.859261°E |
| 5 | 28.819467°S/ 18.685494°E | 12 | 28.769674°S/ 18.843948°E |
| 6 | 28.818172°S/ 18.712599°E | 13 | 28.744327°S/ 18.706879°E |
| 7 | 28.831413°S/ 18.913384°E | 14 | 28.750438°S/ 18.712568°E |
| | | 15 | 28.750193°S/ 18.673231°E |

2.2 Project Background and Description of Activities

The area covered by EPL-8787 forms a subset of a larger historic EPL, namely EPL 3568, which was previously held by Namura Mineral Resources (Pty) Ltd up until about 2012. Before losing the license, Namura Mineral Resources (Pty) Ltd undertook an extensive prospecting program over the historical license area which included the following:

- Investigation of government obtained airborne radiometric and magnetic data
- Completion of an in-house airborne radiometric and magnetic survey
- Ground radiometric surveys and mapping
- 54 655m of Reverse Circulation (RC) and 2623m of diamond drilling
- Down-the-hole spectral logging geophysics

At the time, the former license area, EPL 3568, had no known associated environmental liabilities and is located 90 km east of the Richtersveld Ais Ais Transfrontier National Park.

A combination of various exploration techniques common in searching for base and rare metals, precious metals, nuclear fuels and industrial minerals will be adopted on the concerned EPL area, with a focus on the Namaqua Metamorphic Complex (NMC) alkaline intrusive bodies, post Namaqua intrusives as well as surficial Quaternary sediments. The techniques likely to be utilized include, but are not limited to the following:

- Desktop review of all available geological, geochemical, geophysical data (e.g., government obtained airborne radiometric and magnetic data) and information which would be sourced from various sources such as published literature, historical exploration campaigns by former license holders, the Ministry of Mines and Energy
- Site reconnaissance walk-over and geological plus geo-structural mapping, coupled with soil and stream sediment sampling and grab sampling
- Airborne and/ or ground radiometric, electromagnetic surveys (e.g., controlled-source audio-frequency magnetotelluric (CSAMT)) to help identify concealed intrusions, and model the dip/ strike of alkaline intrusive rock dykes and sills
- Reverse circulation (RC) and diamond drilling of specific anomalies identified from radiometric and magnetic surveys and geological mapping, including geochemical essays
- Trenching
- Trenching, drilling and where ground geophysics are required would require clearing of vegetation for the creation of access tracks, creating working platforms for the drill rigs, and setting out lines for ground geophysical equipment.

The likely scope of exploration activities to be covered over the planned exploration program is document below. It is important to note that the exact scope of exploration activities will be refined, documented, and reported bi-annually and/ or as exploration advances to incorporate any changes to the initial exploration program.

2.2.1 Desktop Review and Study

The envisioned exploration program will commence with a desktop investigation, analysis and review of the following:

- Historical exploration and geological reports of the area, including those of adjacent properties
- The 1:250 000 and 1:50 000 geological maps of the area
- Government obtained airborne radiometric and magnetic survey (from 200m spaced fixed wing surveys) data from the Namibian Geological Survey
- Publicly available satellite imagery of the license area obtained from various sources (e.g., ArcMap, QGIS)

- Any existing stream, soil and grab sampling assay results and
- Historical drilling data, where such can be accessed.

The aim of this exercise would be to gain better geological and geo-structural understanding of the license area and identify preliminary target areas for detailed geological mapping and field evaluation.

2.2.2 Site Reconnaissance, Stream/ Soil/ Grab Sampling and Mapping

Collectively, the license wide site reconnaissance, stream or soil sampling and geological mapping, will form part of the field evaluation stage. The field evaluation will be undertaken by a group of suitably qualified and experienced geologists and field technicians, and will be aimed at refining the geological map in selected zones of interest with potential for base and rare metals, nuclear mineral fuels and industrial minerals mineralization. During the field mapping and soil/ stream sediment and rock chip sampling stage, emphasis will be placed on refining geological contacts and geological structures, as well as obtaining soil, stream sediment and grab samples from such zones, in conjunction with multi element soil geochemical testing and analyses.

Soil and grab rock samples collected during this stage will be stored at a designated exploration camp which will be erected on one of the 3 farms covered by the EPL. The camp will comprise of temporary (either prefabricated or containerized) office, kitchen, laundry, mess and shower structures, tents for sleeping, and a sample storage shed. The camp will also most likely accommodate most, if not all, staff who will be involved in this program. Alternatively, depending on negotiations with the relevant surface land rights owners, it is envisaged that professional staff members may be accommodated at the church guesthouse on farm Hourms Revier. If consensus cannot be reached between the project proponent and the surface land owners, the exploration camp may end up being set up in the settlement of Warmbad. It is further envisaged that as part of this stage, local personnel familiar with the project area will be interviewed to obtain some local indigenous knowledge about various mineral occurrences within the area.

2.2.3 Geophysical surveys

Once the geological desktop review, field walk-over surveys and mapping have been concluded, broader target zones will be selected for high-resolution airborne radiometric and electromagnetic surveying at an anticipated line spacing of 50m to 100m. Airborne geophysics is deemed suitable and adequate for this license area because of the limited overburden and vegetation cover, and the outcropping nature of the bedrock that is generally prevalent over the area.

It is anticipated that based on field mapping data and the resultant 3D models from both field mapping and geophysics, the dip and strike of the various intrusive bodies targeted and the different geological structures will be established. This information, together with soil/ stream sediment and rock chip sample assay results, will assist in the identification of anomalies which would in turn serve as drilling targets.

2.2.4 Intrusive Exploration

The intrusive exploration stage will involve several intrusive investigation techniques such as trenching for bulk sampling, drilling (both reverse circulation (RC) and diamond core drilling (DCD)), and where exploration results are promising the prospecting program may advance to metallurgical testing. The number and positions of the drill holes and/ or trenches will only become apparent after the initial exploration stages, and will most likely be affiliated with the targeted alkaline intrusive and meta-intrusive rock units such as granitoids, gneisses and pegmatites where primary mineralization for base and rare metals, industrial minerals and nuclear fuel minerals is anticipated.

Rock chip samples recovered during RC will be bagged in polyester bags, sampled where necessary, and ultimately, stored at a designated temporary sample shed at the exploration camp. Similarly, rock core recovered during DCD will be stored in core trays at the same facility. The position of each drillhole will be captured with a handheld GPS.

Where shallow mineralization is encountered or suspected, trenching will be carried out with a Tractor Loader Backhoe (TLB), and any bulk samples retrieved will then be stockpiled. During operations, all such trenches will be clearly demarcated with a danger tape and upon completion of any mapping and sampling work, they will be backfilled and rehabilitated.

2.2.5 Project Input Infrastructure and Equipment

The following infrastructure and equipment will likely be installed/ constructed and deployed to the project area over the exploration phase:

- Reverse circulation and diamond core drilling rigs

- Trucks to support the drilling operations (e.g., for water supply, carrying of drilling rods and air compressors, etc.)
- Field bakkies
- A self-contained diesel tank for supply of diesel to various mobile plant. This tank will be stored at the exploration camp or on one of the 3 farms, and will be erected on a concrete bund to ensure containment of any leakages.
- Temporary water tanks which will be stored at the water abstraction point on the Orange River.
- An exploration camp on one of 3 farms (or alternatively in Warmbad) comprising staff accommodation tents; prefabricated or containerized offices, kitchen, mess room, laundry room, showers and toilets; a sample and core storage shed; a shed for sorting and arranging all samples collected; septic tanks for sewage and waste water; wifi routers
- Roof top solar system for power supply for the entire exploration camp.

The exact sizes of the mobile fleet is likely to change over the duration of the project as the project evolves. These changes will be captured and reported in the bi-annual environmental monitoring reports.

3 PROJECT ALTERNATIVES

This section explores alternatives that were considered and weighed up, and lists those deemed to be most feasible. The viability of the selected alternatives/options is based on those that were found to be less damaging to the environment, while maximizing potential benefits from the current and proposed additional activities.

According to the 2012 EIA Regulations the definition of the "alternatives", in relation to a proposed activity, refers to different means of generally meeting the same purpose and requirements of a proposed activity, which may include alternatives to –

- (a) the property on which or location where it is proposed to undertake the activity.
- (b) the type of activity to be undertaken.
- (c) the design or layout of the activity.
- (d) the technology to be used in carrying out the activity; and
- (e) the operational aspects (or modus operandi) of the activity.

The concept of considering alternatives thus ensures that the environmental assessment process is not reduced to the defence of a single project proposal that is to the desire of the proponent, and therefore, provides an opportunity for unbiased considerations of options, to determine the most optimal course of action from an environmental perspective.

Alternatives weighed and considered for this project are with regards to:

- Location of proposed activities
- Exploration methods and technologies
- Water and power supply sources
- The "No-action" alternative.

3.1.1 Limitations to the Project Alternatives

In assessing possible alternatives to each of the above-listed aspects, the following factors were considered in accordance with best practice procedures as outlined under DEAT (2004):

- Resource/ project locality – where alternative locations could be considered for the same resource and such alternatives are justified by economics.

- Technological limitations - where high costs or the environmental unfriendliness of a technology may prevent it from being considered as a viable option, or the lack of technological development may preclude certain options from consideration
- Environmental limitations – where environmental factors such as climate, geology, hydrology, hydrogeology, potential impacts on the local ecology may prevent or favour consideration for an option.
- Socio-economic limitations – where socio-economic factors such as distance to material source, markets and/ or waste management sites; availability of supporting infrastructure such as water and electricity; current and future land-use; cultural significance; presence of archaeological sites and impacts on livelihoods may hinder or enhance consideration for an option.

3.1.2 Project Locality Alternatives

The area has been selected for exploration activities based on the geological setting (regional and local), the economic geology, and exploration as well as mining history of the license area and Proponents' preference of an area during application. This means that the mineralization of the commodities within the EPL is area-specific, which means the exploration target areas are primarily determined by the geology (host rocks) and the tectonic environment of the site (an ore-forming mechanism).

3.1.3 Exploration Technologies and Supporting Services

Both intrusive and non-intrusive exploration activities as indicated under the project description chapter will be used as deemed necessary, without aggravating the impact on the environment. If an economically viable discovery is made, the project will proceed to the mining phase upon approval of a mining EIA Study (and subsequent ECC) and issuance of a mining license by the Ministry of Mines and Energy (MME).

In terms of services and infrastructure, these have been envisaged to ensure that the most feasible options were selected. These were weighed in terms of technological, economic, and environmental limitations in selecting the most feasible option(s). The alternative considered in this regard are presented in Table 3-1.

Table 3-1: Service infrastructure alternatives considered for exploration on the EPL

| Category of Infrastructure | Alternatives Considered | Justification for selected option(s) |
|--|--|---|
| Ablution facilities | <ul style="list-style-type: none"> -Install fixed facility with septic tank -Portable facilities with septic tank | <p>-To avoid long-term visual impacts, minimize rehabilitation costs and reduce structure dismantling / removal time.</p> |
| Shade Structure for working areas | <ul style="list-style-type: none"> -Shade structure made from temporary blue or red corrugated sheets -Shade structure made with shade net | <p>-Shade structure made from corrugated sheets deemed most suitable due to robustness, & resistance to wind destruction and hot sun.</p> |
| Water supply (for exploration drilling) | <ul style="list-style-type: none"> -Water abstracted from the nearest water supplying sources with less water supply issues, through supply and purchase agreements. -Siting and drilling of new boreholes in areas of the EPL far from existing boreholes. The new borehole(s) will supply the project activities such as drilling. | <p>-Water should be brought from outside the EPL area upon reaching an agreement with a supplier. This will be done to relive pressure on struggling local aquifers.</p> |
| Water supply (for domestic/drinking purposes at the campsites) | <ul style="list-style-type: none"> -Water abstracted from surrounding local boreholes through purchasing agreements -Water carted from elsewhere -Water abstracted from the Orange River. | <p>-Drinking water can be supplied from the local boreholes purchasing from farmers).</p> <p>-Water for exploration and associated activities (drilling and dust suppression) should be abstracted from the Orange River.</p> |
| Diesel storage | <ul style="list-style-type: none"> -Trailer mounted diesel tank -Fixed diesel tank onsite | <p>-A trailer mounted diesel tank for fuel storage has great mobility requirements during exploration.</p> |

| Category of Infrastructure | Alternatives Considered | Justification for selected option(s) |
|--|--|--|
| Power supply | <ul style="list-style-type: none"> -Diesel generator set -Powerline or solar panels | -Most practical & economically viable for exploration, even when exploration works is not positive. |
| Field accommodation and support office | <ul style="list-style-type: none"> -Erect dismantlable prefabricated units for site office -Accommodation in nearby settlements -Campsite within the EPL at selected locations based on the exploration programme <hr/> Fixed or temporary buildings for offices and accommodation units (structures) on site | <ul style="list-style-type: none"> -Ease of installation, (b) Low installation costs and (c) Ease of dismantling & moving. -The accommodation campsite set up within the EPL is justifiable to ensure that there is a short distance to the working sites and will not impact work productivity. |

3.1.4 No-Go Alternative

The “no action” alternative implies that the status quo remains, and nothing happens. Should the proposal of exploration activities on the EPL, be discontinued, none of the potential impacts (positive and negative) identified would occur. If the proposed project is to be discontinued, the current land use for the proposed site will remain unchanged.

4 APPLICABLE REGULATORY FRAMEWORK

4.1 National Legislation

In Namibia all aspects related to the extraction and processing of mineral resources are vested in the state and are regulated by the Ministry of Mines and Energy (MME) whereas sustainable exploitation and management of the environment and use of natural resources is regulated by the Ministry of Environment, Forestry and Tourism (MEFT).

The Minerals Prospecting and Mining Act (Act No. 33) of 1992 is the principal law governing exploration, mining and beneficiation of mineral resources in the Republic of Namibia. From an environmental management viewpoint, this Act requires that an environmental impact assessment be undertaken prior to prospecting, mining/quarrying and beneficiation operations. The Ministry of Mines and Energy is the custodian agency for the administration of the Mining Act.

Conversely, MEFT is the overseeing custodian agency for the administration and enforcement of the EMA, with the enforcement of the Environmental Impact Assessment Regulations of 2012 specifically being entrusted with the Department of Environmental Affairs and Forestry (DEAF) within MEFT. This Act stipulates that possession of an Environmental Clearance Certificate (ECC) is a pre-requisite for the continuation of running or operating any activities that are listed under the Environmental Impact Assessment Regulations of 2012. The act further sets out under Section 58 and in the Government Notice No. 29 of 2012 a detailed framework and schedule for conducting Environmental Impact Assessments for mineral exploration, mining and mineral processing companies or any entity that plans to undertake exploration, quarrying or mining, and/ or processing of mineral resources at any scale.

A review of the applicable and relevant local legislation, policies and guidelines to the existing operation and the planned new activities is given in this chapter. This review serves to inform the project Proponent, Interested and Affected Parties and the decision makers at the DEAF and the Competent Authorities of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled during prospecting. The applicable local (national) and where necessary regional/ international legislation, policies and guidelines are given in Table 4-1.

Table 4-1. Applicable legislation (laws and regulations), policies and guidelines to the project

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|---|---------------------------------------|--|
| Relevant Acts | | |
| The Constitution of the Republic of Namibia (1990) | Government of the Republic of Namibia | <p>The Namibian government has adopted several policies that promote sustainable development. Most of these originate in clauses of the Constitution of the Republic of Namibia. In Article 95 (i), the State undertakes to actively promote and maintain the welfare of the people by adopting policies aimed at the utilisation of natural resources on a sustainable basis for the benefit of all Namibians. Articles 91(c) and 95(l) are also of relevance to sound environmental management practice. In summary, these refer to:</p> <ul style="list-style-type: none"> -Guarding against over-utilisation of biological natural resources. -Pursuing sustainable natural resource use -Limiting over-exploitation of non-renewable resources. -Maintaining biological diversity -Ensuring ecosystem functionality. -Protecting Namibia's sense of place and character. <p>Effective implementation of the mitigation measures set out in this Environmental Scoping Report, the owner of the ECC shall be advocating for sound environmental management as set out in the Constitution.</p> |
| Environmental Management Act No. 7 of 2007 and its 2012 EIA Regulations Government Notice 28-30 (Government Gazette 4878) | MEFT: DEAF | <p>Part 2 of the Act sets out 12 principles of environmental management, summarized as follows:</p> <ul style="list-style-type: none"> -Community involvement in natural resources management, must be promoted and facilitated. -The participation of all I&APs must be promoted and decisions must consider the interest, needs and values of I&APs. |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|------------------------|--------------------------|--|
| Relevant Acts | | |
| | | <p>-Equitable access to environmental resources must be promoted and the functional integrity of ecological systems must be considered to ensure sustainable systems.</p> <p>-Assessments must be undertaken for activities which may have significant effects on the environment or the use of natural resources.</p> <p>-Sustainable development must be promoted in all aspects relating to the environment.</p> <p>-Namibia's cultural and natural heritage including, its biological diversity, must be protected and respected.</p> <p>-The option that provides the most benefit or causes the least damage to the environment, at a cost acceptable to society must be adopted to reduce the generation of waste and polluting substances at source.</p> <p>-The reduction, re-use and recycling of waste must be promoted.</p> <p>-A person who causes damage to the environment must pay the costs associated with rehabilitation of damage to the environment and to human health caused by the pollution.</p> <p>-Where there is sufficient evidence which establishes that there are threats of serious or irreversible damage to the environment, lack of full scientific certainty may not be used as a reason for postponing cost-effective measures to prevent environmental degradation; and</p> <p>-Damage to the environment must be prevented and activities which cause such damage must be reduced, limited, or controlled.</p> <p>-In terms of the terms and conditions attached to the current ECC the proponent is required to renew the ECC after every 3 years. Such renewal process is expected to review the current conditions of the environment, document ongoing and planned activities, evaluate how the ongoing and planned activities will likely alter the current</p> |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|--|--------------------------|--|
| Relevant Acts | | |
| | | <p>conditions of the environment, and formulate impact management measures that speak to the current and future status quo of the affected project area.</p> <p>The Proponent has the responsibility to ensure that the proposed impact management measures are implemented, conform to the principles of this Act. In developing this report, OMAVI has been cognizant of these requirements, and accordingly the process that was adopted has been undertaken in conformance with this Act and the EIA Regulations (2012). Several listed activities in terms of the Act, are triggered by the proposed activities as set out above.</p> |
| <p>Mineral Prospecting & Mining Act (Act no. 33 of 1992)</p> | <p>MME</p> | <p>Sections 50, 52, 54, 57 and 130 of this Act sets out provisions for environmental management for activities arising from mineral exploration, quarrying/ mining and beneficiation, as follows:</p> <ul style="list-style-type: none"> -Holders of mineral prospecting licenses (EPLs) are required to undertake an ESA or EIA and prepare an EMP to support applications for Environmental Clearance. Such holder are required to make revision of such EMP every 3 years. -That the holder of an EPL cannot exercise rights on a private land until the holder has entered into an agreement with the owner regarding compensation -That an EPL holder shall take all necessary remedial steps to reasonable satisfaction of the minister for any damage caused during prospecting. -That the minister is empowered to direct the holder of a prospecting license for carrying out good reconnaissance, mining and prospecting practices for the protection of the environment, and conservation of natural resources payment of |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|---|---|--|
| Relevant Acts | | |
| | | <p>liability fees and royalty and remedial steps for any damages and</p> <p>-That an EPL holder shall report pollution in course of any operations and make remedial measures for such.</p> <p>The abovementioned provisions are all relevant to the proposed activities and were thus considered in the Environmental Assessment process.</p> |
| <p>Charter for Sustainable and Broad-Based Economic and Social Transformation in the Namibian Mining Sector 2014 – 2020 (The Namibian Mining charter)</p> | <p>The Namibian Chamber of Mines of Namibia</p> | <p>This charter aims to facilitate meaningful participation of historically deprived Namibians in the mining and mineral beneficiation industry. It has effectively been developed as an instrument to effect transformation and sets specific targets for mineral license holders and Operators of mineral processing facilities active in Namibia</p> |
| <p>The Minerals Policy of Namibia, 2003</p> | <p>Ministry of Mines and Energy: Mining Directorate</p> | <p>This policy sets out guiding principles and directions while communicating the values of the Namibian people in pursuit of the development of the mining and mineral resources beneficiation sector.</p> |
| <p>Pollution Control & Waste Management Bill</p> | <p>MEFT and others</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 repeals the Atmospheric Pollution Prevention Ordinance (11 of 1976). In terms of water pollution, it will be illegal to discharge of, or dispose of, pollutants into any watercourse without a Water Pollution Licence (apart from certain accepted discharges). Similarly, an Air Quality Licence will be required for any pollution discharged to air above a certain threshold. The Bill also provides for noise, dust or odour control that may be considered a nuisance. The Bill advocates for duty of care with respect to waste management affecting humans and the environment and calls for a waste</p> |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|---|------------------------------------|---|
| Relevant Acts | | |
| | | <p>management licence for any activity relating to waste or hazardous waste management.</p> <p>The proposed prospecting activities would not entail the discharge of large quantities of gaseous pollutants into air but may result in increased noise levels, dust generation, destruction of in situ soil structure during such operations.</p> |
| Water Act (No. 54 of 1956) | MAWLR: Department of Water Affairs | <p>Makes provision for several functions pertaining to the management, control and use of water resources, water supply and the protection of water resources.</p> <p>The Proponent shall prevent any potential pollution of groundwater and surface water.</p> |
| Water Resources Management Act (Act No. 11 of 2013) | | <p>This Act provides a framework for managing water resources based on the principles of integrated water resources management. It provides for the management, development, protection, conservation, and use of water resources. Should the proponent wish to undertake activities involving water abstraction and/or effluent discharge, the relevant permits will have to be applied for from the Department of Water Affairs.</p> <p>Furthermore, any watercourse on/or within the license area and surroundings, including associated ecosystems, should be protected in alignment with the principles above.</p> |
| Nature Conservation Ordinance (Act No. of 1996) | MEFT | <p>The Nature Conservation Amendment of 1996 (section 73.1) provides for an economically based system of sustainable management and utilization of game in communal areas; to delete references to representative authorities; and to provide for matters incidental hereto.</p> <p>Although the project site is not located within protected area, there are ongoing nature</p> |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|---|---------------------------------|---|
| Relevant Acts | | |
| | | <p>conservation efforts in the area, specifically on the private farms, and there are known indigenous vegetation and fauna in the license area. Therefore, this Ordinance is relevant. A permit would be required should any species onsite, with a protected or endangered status, be damaged or removed. If required, the proponent will apply for such a permit prior to commencing with the proposed activities.</p> |
| Forestry Act (Act No. 12 of 2001) | MEFT | <p>The Act provides for the management and use of forests and forest products.</p> <p>Section 22. (1) provides: "Unless otherwise authorised by this Act, or by a licence issued under subsection (3), no person shall on any land which is not part of a surveyed erven of a local authority area as defined in section 1 of the Local Authorities Act, 1992 (Act No. 23 of 1992) cut, destroy or remove - (a) vegetation which is on a sand dune or drifting sand or on a gully unless the cutting, destruction or removal is done for the purpose of stabilising the sand or gully; or (b) any living tree, bush or shrub growing within 100 m of a river, stream or watercourse."</p> <p>The proponent will apply for the relevant permit under this Act if it becomes necessary.</p> |
| Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001) | MME: Petroleum Affairs Division | <p>Regulation 3(2)(b) states that "No person shall possess or store any fuel except under authority of a licence or a certificate, excluding a person who possesses or stores such fuel in a quantity of 600 litres or less in any container kept at a place outside a local authority area.</p> <p>This law is applicable to this project because new diesel in excess of 600L will be stored on the site in a self-contained diesel storage tank.</p> |
| National Heritage Act | MEAC | The Act makes provision for the protection and conservation of places and objects of heritage |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|--|----------------------------|--|
| Relevant Acts | | |
| (Act No. 27 of 2004) | | <p>significance and the registration of such places and objects. Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains, while Section 48 sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Section 51 (3) sets out the requirements for impact assessment.</p> <p>Should any objects of heritage/ archaeological significance be identified during project activities, the work must cease immediately in the affected sites and the necessary steps taken to seek authorization from the Council.</p> |
| Public Health Act (Act No. 36 of 1919) | MoHSS: Occupational Health | <p>The Act serves to protect the public from nuisance and states that no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.</p> <p>The Proponent must ensure that all operations are operated in a way that is safe and healthy to both the employees and the public. Noise and dust emissions which could be considered a nuisance and/ or a health risk ought to be kept to acceptable levels.</p> |
| Labour Act, 2007 | MLIEC | <p>Sections 3, 4, 5, 11, 16, 23-27, 44 and 135 make provision for the following:</p> <ul style="list-style-type: none"> -That a person may not employ a child under the age of 14years -That children are prohibited for employment in a mine and other dangerous circumstances |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|--|--------------------------------------|---|
| Relevant Acts | | |
| | | <p>-That forced employment of persons is prohibited</p> <p>-That an employee is entitled to monetary remuneration daily, weekly, fortnightly, or monthly in cash, cheque, and direct deposit into a bank account</p> <p>-That the work hours of an employee are 45 hours in a week, over and above which an employee is entitled to additional payment overtime wage</p> <p>-That employees are entitled to (a) annual leave on the basis of the average number of days worked over the year, (b) a day's sick leave for every 26days worked, (c) compassionate leave for a period of 5days in 12 months which is fully paid, and (d) leave on public holidays,</p> <p>-That female employees that have completed 6 months of employment are entitled to 12 weeks of maternity leave, which can be extended for a further period of one month</p> <p>-That the minister is empowered to make regulations in relation to safety, health, hygiene, sanitation, and welfare of persons employed in or about mines, including sea-bed operations</p> <p>The Proponent is expected to be compliant with the above provisions and as such the above provisions were accounted for in this assessment.</p> |
| Relevant Guidelines, Policies and Regulations | | |
| Environmental Assessment Policy (1994) | MEFT: DEA | This policy aims to promote sustainable development and economic growth while protecting the environment in the long term by requiring environmental assessment prior to undertaking of certain activities. Annexure B of the policy contains a schedule of activities that may have significant detrimental effects on the environment, and which require authorization prior to undertaking. |
| Mine Health & Safety Regulations | MME: Mine Safety & Services Division | These set of regulations are aimed at ensuring that mineral prospecting projects as well as operational |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|--|--|---|
| Relevant Acts | | |
| <p>(under section 138A of the Mining Act, 1992)</p> | <p>MoHSS: Occupational Health Division</p> | <p>mines are operated in a safe manner to prevent and/ or minimize injuries, lost time, fatalities, or long-term health hazards. The regulations make provision for:</p> <ul style="list-style-type: none"> -Employee's right to leave unsafe working places -Obligation of a project manager to provide for all safety gear and enforce all safety and health measures on site -Reporting of accidents to the chief inspector and keeping a record of such accidents -Requirements for the project manager to provide occupational health services at area of exploration activity -Requirements for stability of excavations; provision of waiting areas; schemes for working in vicinity of water body. -The project manager and field supervisors' responsibility to formulate a scheme for identifying hazards at the area of prospecting activity and provision of appropriate protective equipment -Ensure that the project manager provides first aid and firefighting equipment and procedures where exploration activities are being conducted <p>All the above-mentioned provisions are relevant to this project and were thus considered in the ESA.</p> |
| <p>National Solid Waste Management Strategy of Namibia</p> | <p>MEFT and Local Municipalities</p> | <p>The Vision of this Strategy is for Namibia to become the leading country in Africa in terms of standards of solid waste management by 2028.</p> <p>The Specific Objectives of the Strategy are:</p> <ol style="list-style-type: none"> 1. To strengthen the institutional, organisational and legal framework for solid waste management, including capacity development. 2. To install a widespread culture of waste minimisation and to expand recycling systems. 3. To implement formalised solid waste collection and management systems in all populated areas, |

| LEGISLATION CONSIDERED | CUSTODIAN ORGAN OF STATE | ASPECT OF PROJECT |
|------------------------|--------------------------|--|
| Relevant Acts | | |
| | | <p>including under the administration of Regional Councils.</p> <p>4. To enforce improvements in municipal waste disposal standards.</p> <p>5. To plan and implement feasible options for hazardous waste management including healthcare waste management</p> <p>It is envisaged that a significant amount of solid waste will be produced in the form of litter, sewage, disposable samples bags, soil/ sediment samples, waste food, etc.</p> |

5 DESCRIPTION OF THE RECEIVING ENVIRONMENT

This section provides an overview of the current status quo of the climatic, biophysical and socio-economic landscape through the analysis of baseline data and information as deduced from field observations/ assessments, literature and community engagements. For this project the data has been collected through a desktop study of various data sources, existing literature as well as site observations and consultations with the project proponent, the immediate affected community and management of the Karibib Town Council. In this respect, baseline information is provided on the receptors described under the following subsections:

The aim of this section is to provide a baseline against which changes that may occur as a result of the current and proposed project activities can be measured, gauged and monitored through time.

5.1 Physical Environment

5.1.1 Climatic Conditions

The climatic conditions of the project area can be classified as very arid (desert). The regional and local climatic information have been obtained from Mendelsohn et al (2002), Meteoblue and World Weather Online (2023) sources as presented below and under subsections pertaining to climate.

The area experiences annual minimum temperatures ranging between 6 and 8°C and maximum temperatures ranging between 34 and 36°C. In terms of rainfall, the project area receives between 50 and 100mm of rainfall per year (Mendelsohn et al, 2002).

The average temperatures and rainfall observed for the period of 13 years, i.e., between 2009 and 2022 as obtained from World Weather Online are presented in the following respective figures. The highest average temperature recorded within the 13-year period was 35°C in January and the lowest was 7°C in July as shown in Figure 5-1.

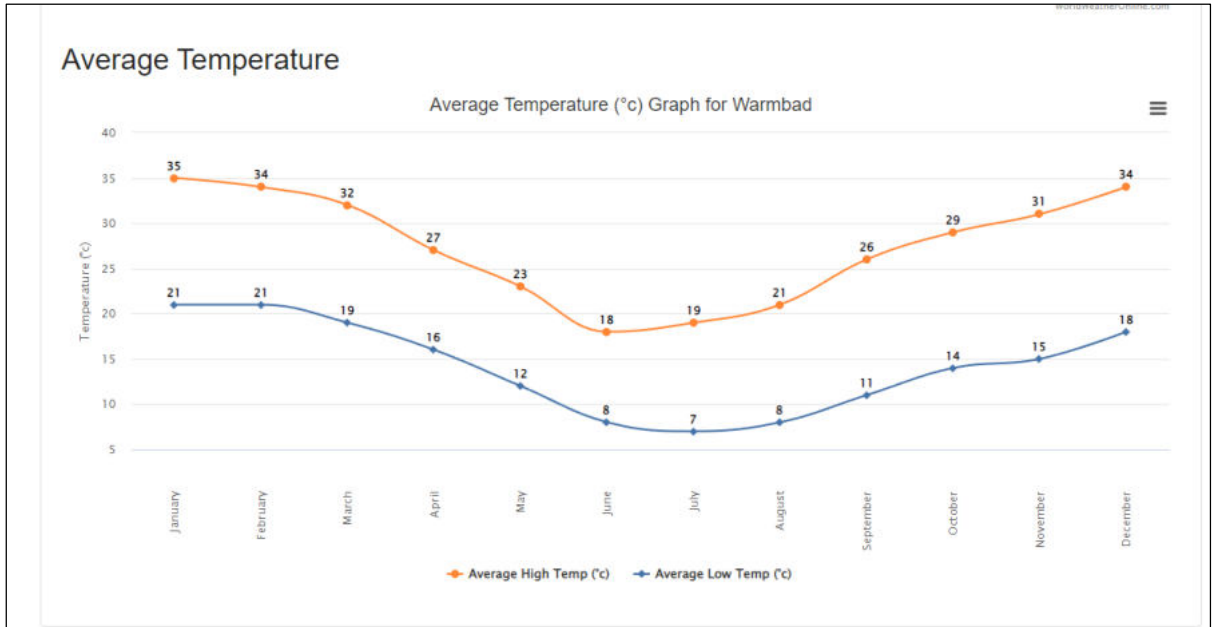
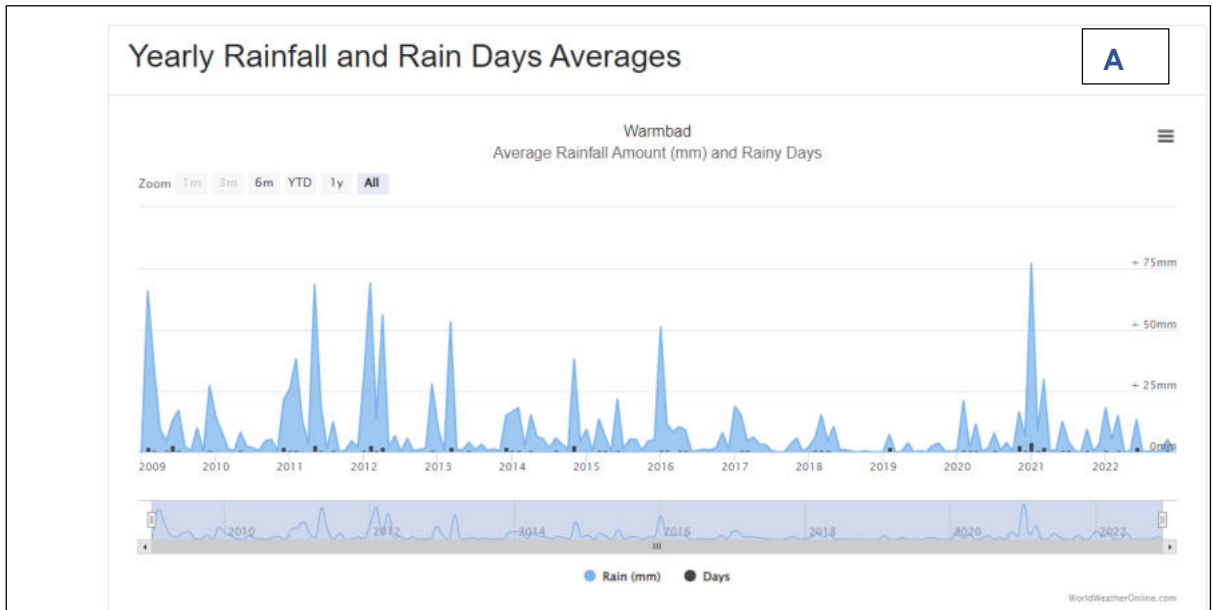


Figure 5-1: The average temperature chart for Warmbad Area (source: Meteoblue, 2023)

The highest rainfall recorded between 2009 and 2022 has been 75mm in January 2021 followed by 69mm in February 2012 (Figure 5-2 (A)). The average rainfall is 19mm in the months of January and February as shown in Figure 5-2 (B) below.



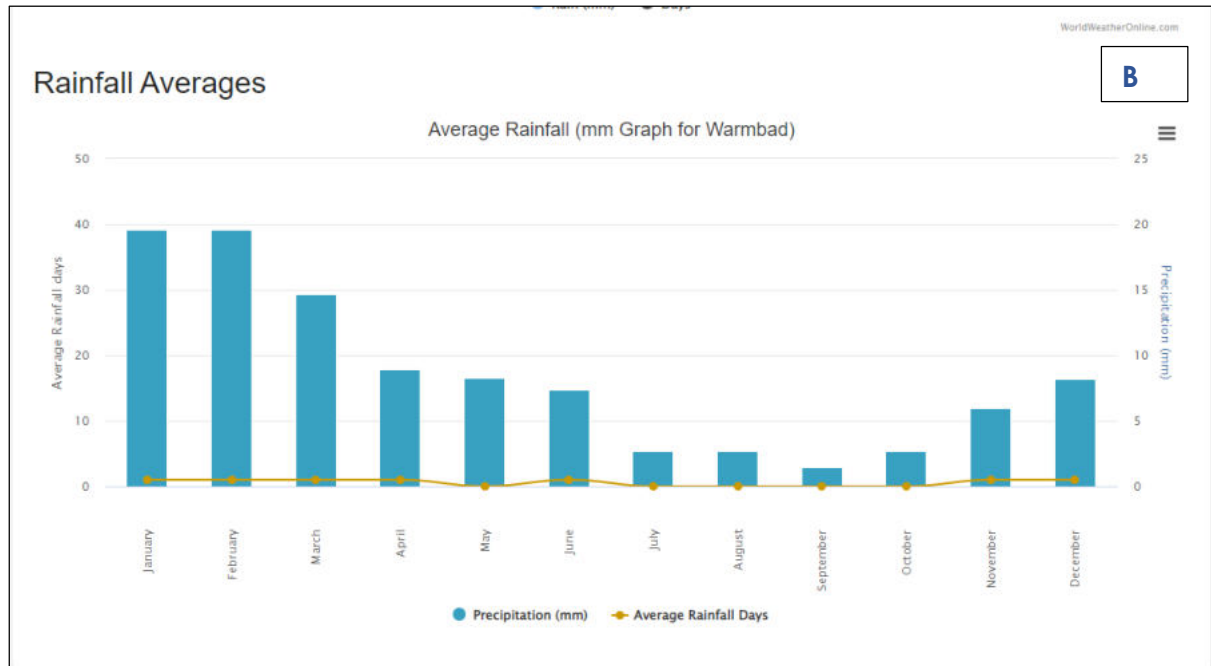


Figure 5-2: The Yearly rainfall and rainy days as well as average rainfall charts for Warmbad Area (source: Meteoblue, 2023)

5.1.2 Geology

The local geology underlying EPL-8787 comprises several lithostratigraphic units belonging to the Orange River Group (ORG) and the Vioolsdrif Intrusive Suite (VIS) of the Namaqua metamorphic Complex, the Dwyka Group of the Karoo Super-Group, and various post Namaqua pegmatites - Figure 5-3. Minor quaternary surficial sediments consisting of gravel, sand, scree and calcrete are observed along the southern edge of the EPL (Along the Orange River) and towards the south-eastern part. The three main lithostratigraphic units that characterize the EPL area s summarized below:

1. The Orange River Group (ORG), a Paleoproterozoic (~2000 m.y.), volcano-sedimentary succession (Blignault, 1974), represents the oldest continental crust into which granitic rocks of the VIS intruded. The group is dominated by intermediated to felsic, calc-alkaline volcanic rocks, with minor schists and quartzites. Within the EPL area, the group is represented by the Tsams Formation, dominated by felsic volcanics and the Nous Formation comprising mostly intermediate volcanic rocks (Blignault, 1977). Volcanic rocks units range from basaltic andesite to rhyolite (Von Backstrom and De Villiers, 1972).
2. Vioolsdrif Suite: The Orange River Group (ORG), a Paleoproterozoic (~2000 m.y.), volcano-sedimentary succession (Blignault, 1974), represents the oldest

continental crust into which granitic rocks of the VIS intruded. The group is dominated by intermediated to felsic, calc-alkaline volcanic rocks, with minor schists and quartzites. Within the EPL area, the group is represented by the Tsams Formation, dominated by felsic volcanics and the Nous Formation comprising mostly intermediate volcanic rocks (Blignault, 1977). Volcanic rocks units range from basaltic andesite to rhyolite (Von Backstrom and De Villiers, 1972).

1. Post-Namaqua Pegmatites: Pegmatites are associated with the late-stage regional shearing (D4) and unroofing of the NNMP together with granite emplacement (e.g. Stowe et al., 1983). These pegmatites (dated at 1000-880 Ma; Burger et al., 1965; Nicolaysen, 1962; and Nicolaysen and Burger, 1965 in Schreiber, 2016) belong to the Orange River Pegmatite Belt (ORPB) (Gevers, 1937, Minnar, 2005), a concentration of pegmatite bodies along a roughly E-W trending domain along the Orange River extending from Namibia to South Africa. The pegmatites range in composition and internal structure, ranging from simple, homogeneous and unzoned quartz-feldspar-muscovite assemblages to zoned, heterogeneous bodies containing more exotic minerals such as beryl, lepidolite, columbite-tantalite, sillimanite, together with uranium and REE bearing which were sporadically mined (Gevers, 1936; Hugo, 1970; Minnaar and Thert, 2006).

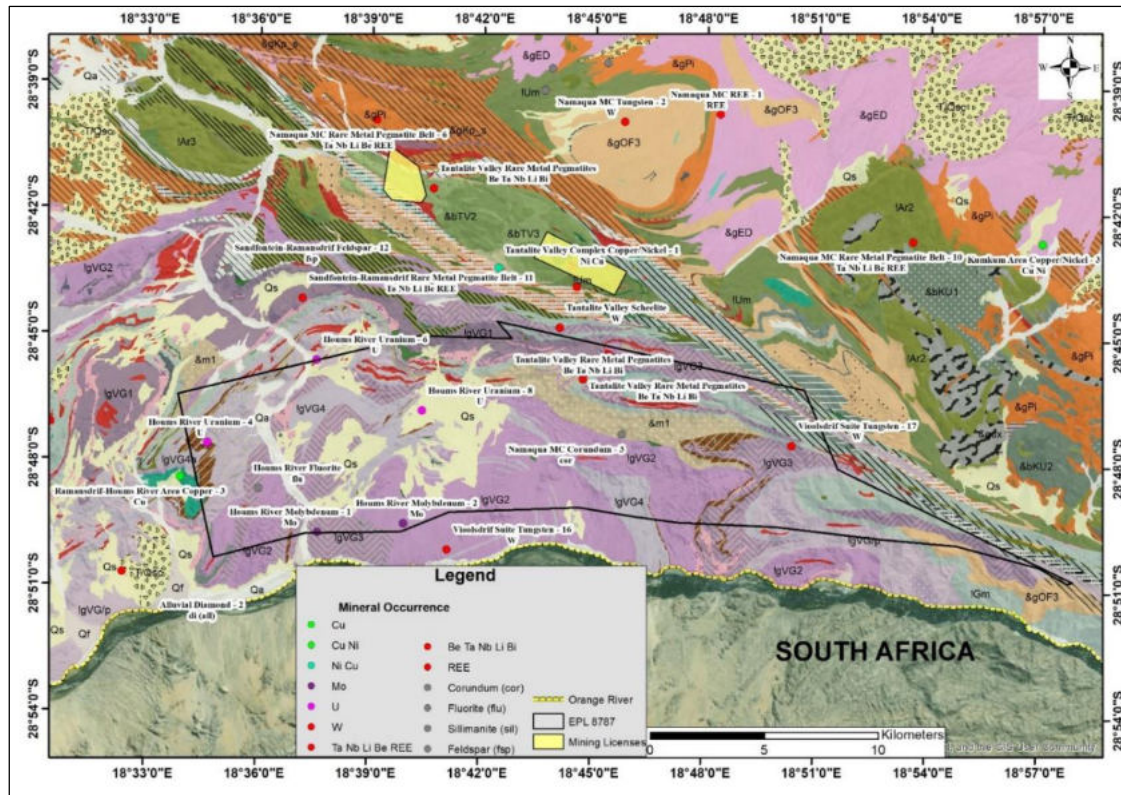


Figure 5-3: The regional and local geology, mineral occurrences, and structures underlying the license area (Data source: Geological Survey of Namibia)

From a local and simplified perspective, the EPL is overlain by the pre-tectonic gneiss, ortho-amphibolite and metasedimentary rocks, as shown on the local geological map in Figure 5-4.

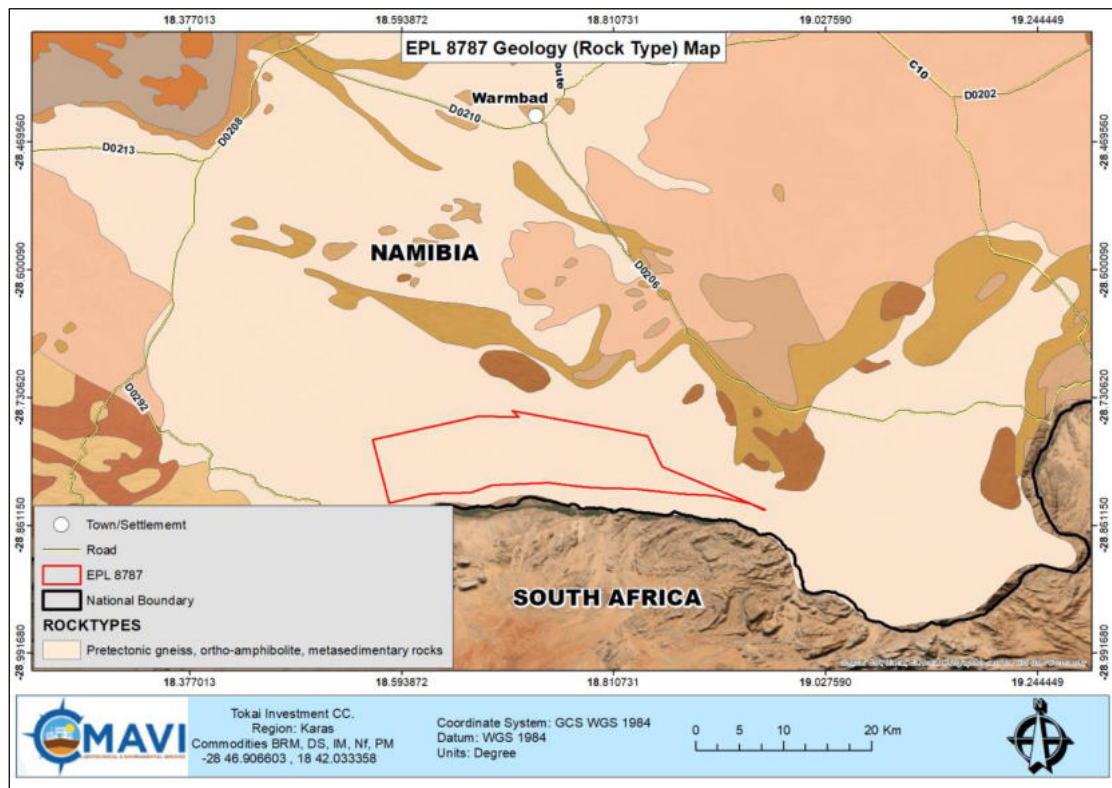


Figure 5-4: The geological conditions of the EPL and immediate surroundings

5.1.3 Water Resources: Surface Water and Groundwater

The project area is bordered to its south by the Orange River, a perennial river with a catchment area of 1,000,000km² and an annual volume of 3,400 million m³ per year (Mendelsohn et al, 2002). There are some visible ephemeral rivers crossing through the EPL site and there are shown in the map below.

Regarding groundwater (hydrogeology), the area has rock bodies with no to little groundwater potential (Mendelsohn et al, 2002). Similarly, this is proven by the local hydrological and groundwater (aquifer) map shown in Figure 5-5 indicating that the EPL are is underlain by rock bodies with little groundwater potential.

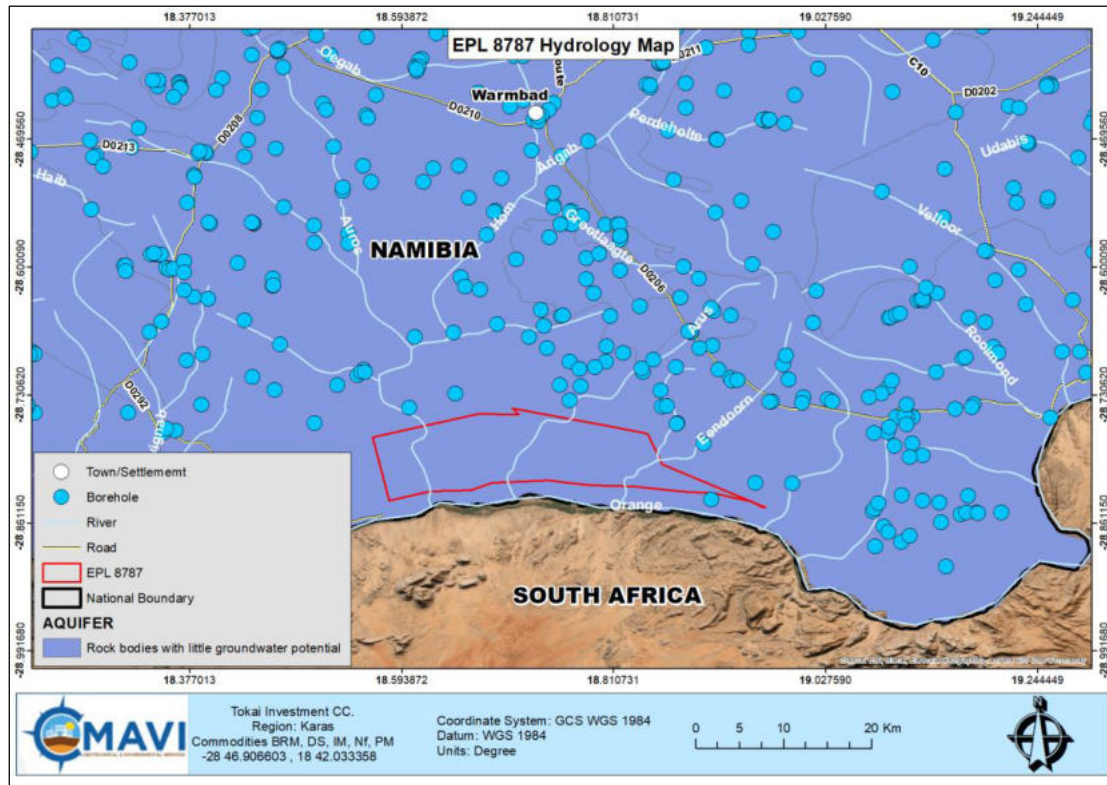


Figure 5-5: The hydrological and hydrogeological conditions of the EPL and surroundings

5.1.4 Topography, Landscape and Soils

The topography of the area is characterized by rocky hills and mountains. According to Mendelsohn et al (2002), the project area falls within the elevation range of 0 and 960 meters above sea level (masl) as shown in the topographic map in Figure 5-6.

From a landscape perspective, the EPL area is found within the Orange River Valley as shown in Figure 5-6. According to Dauteuil et al (2015), the Orange River Valley marks a main boundary between a rather flat domain to the north and a dissected domain to the south. The inner plateau displays a smooth topography at an elevation of approximately 1,000masl with some mountain ranges reaching 2,200masl. To the northwest (intersecting the EPL corner) and further north, the bordering landscape is the Gamchab Basin which was formed by rivers eroding away the terrain to the north of the Orange River. These rivers flow and erode the landscape only sporadically after heavy falls of rain. The landscape is dominated by large, open valleys of gently sloping ground covered with a sparse layer of grass. There are many prominent dolerite sills in the Basin (Mendelsohn et al., 2002).

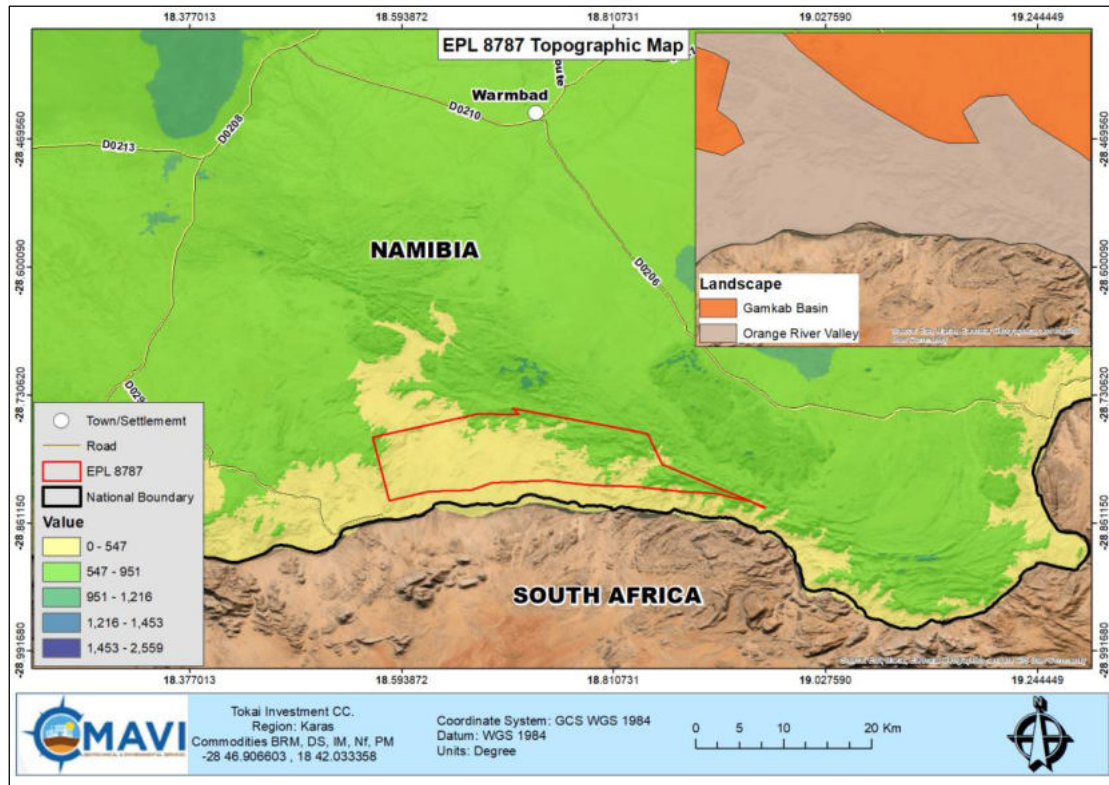


Figure 5-6: The topographic and landscape map of the EPL and surroundings

The topographic view of some areas within the EPL area indicated by photos provided in Figure 5-7.



Figure 5-7: The topographic view of some visited areas of the EPL

In terms of soils on and around the EPL, the dominant soil types are Eutric Leptosols (Mendelsohn et al., 2002). The Eutric soils are fertile with high base saturation, and the Leptosol component of the soil name indicates that these soils typically form in actively eroding landscapes, especially in hilly or undulating areas that cover much of the southern and north-western Namibia. The coarse-textured soils are characterized by

their limited depth caused by the high presence of a continuous hard rock (Mendelsohn et al., 2002).

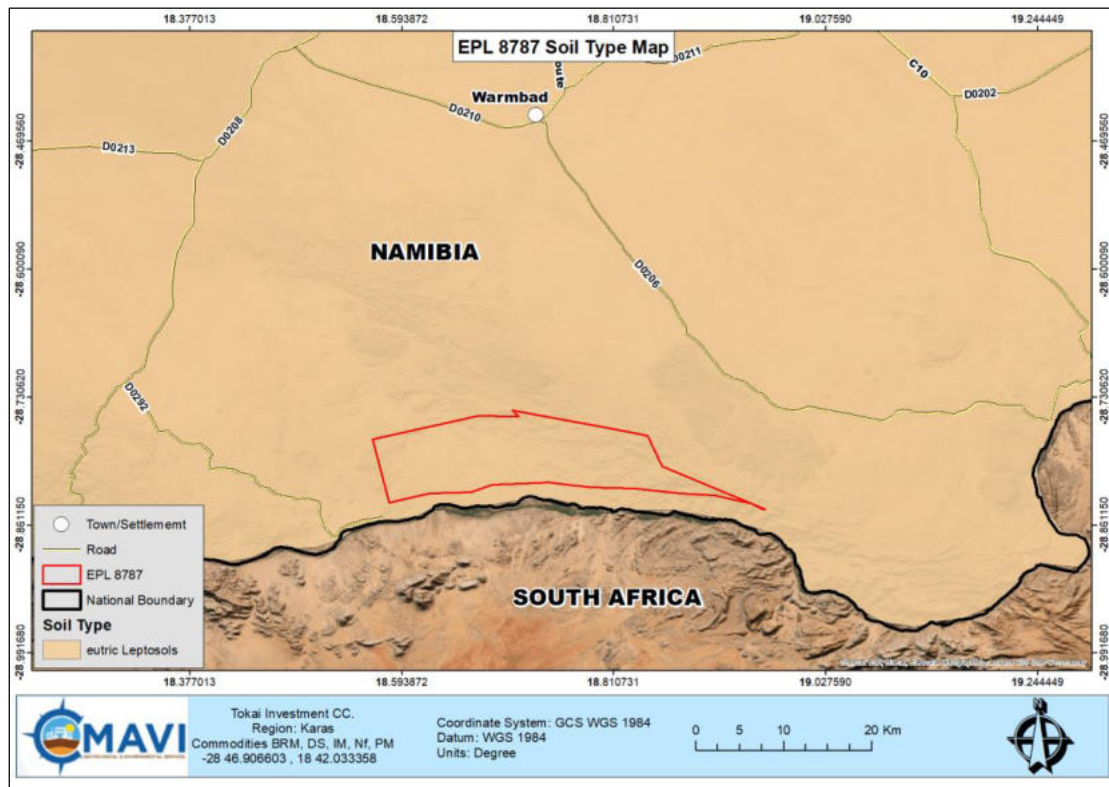


Figure 5-8: The dominant soil map on the EPL

The soil types found onsite are shown in Figure 5-9.



Figure 5-9: The light-brown and grey sandy gravel soils on some visited areas of the EPL

5.1.5 Air Quality and Wind

According to IQ Air (2023), the current air pollution level around the Warmbad area (including the project area) is good. The air quality index (AQI) is 25 US AQI, and the main pollutant is the atmospheric particulate matter (PM) 2.5. PM are microscopic solid or liquid matter suspended in the air with a diameter of 2.5 micrometres (μm) or less. The PM_{2.5} concentration in the Warmbad area is $6.1 \mu\text{g}/\text{m}^3$ which is currently 1.2 times the WHO annual air quality guideline value (IQ Air, 2022) of $5 \mu\text{g}/\text{m}^3$.

In terms of wind information of the area, the predominant wind direction in the project area is from southwest (SW) to northeast (NE) (Meteoblue, 2023) as shown on the wind rose in Figure 5-10. The wind speed chart showing the days per month, during which the wind reaches a certain speed is shown in the same Figure 5-10 (right-hand chart). For instance, the steady strong winds are experienced between December to April, and calm winds from June to October.

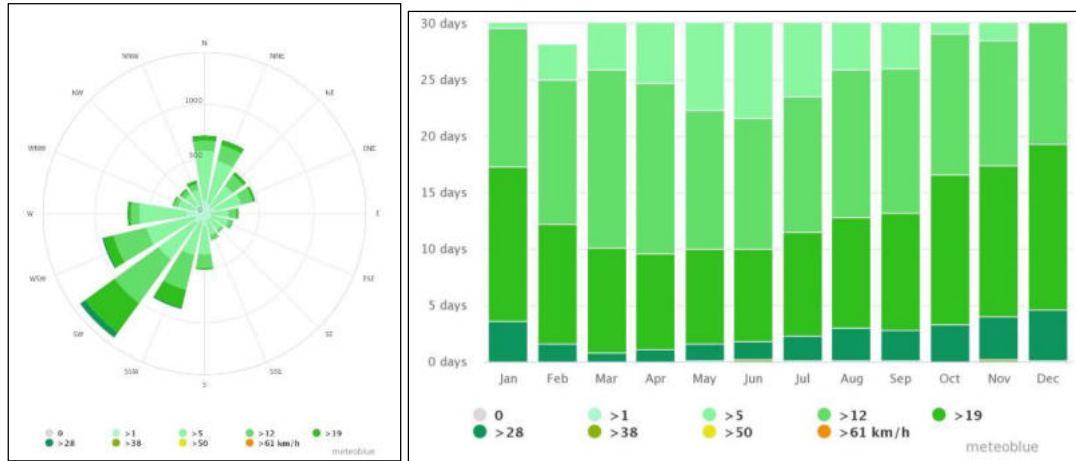


Figure 5-10: The wind rose and wind speed chart of the project area (Meteoblue, 2023)

5.2 Biological Environment

5.2.1 Biodiversity

5.2.1.1 Fauna

According to Mendelsohn et al (2002), the general area is regarded as “low” in overall (all terrestrial species) diversity. The overall diversity of birds is regarded as large herbivorous mammals (big game) is viewed as “very low” with less than 1 species or undetermined. The reptile endemism in the area is determined to be between 9 and 12 species, while the mammal endemism is determined to be between 5 and 6 (Mendelsohn et al (2002)).

The EPL area which falls under the Orange-Fish River Basin has four biomes, namely the Nama-Karoo, Succulent-Karoo, Savanna and Desert (Irish, 2008). The percentage distribution of species in the Basin are shown in Figure 5-11.

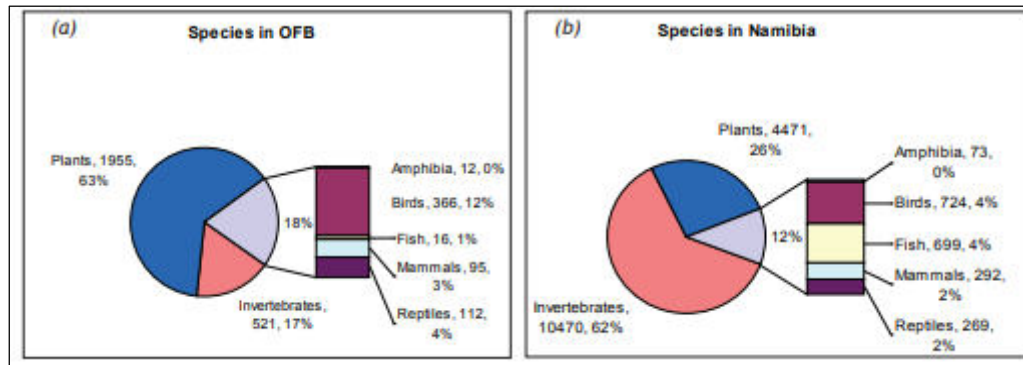


Figure 5-11: The Comparison of number of species in each major group of organisms, as represented in the OFRB (A), with their total number of species known from Namibia (B) (Irish, 2008)

Most of the EPL is a conservation area which is home to some wildlife as well as domestic animals. During the site visit conducted on the 14th of January 2023, some wildlife such as giraffes (*Giraffa camelopardalis*), zebras (*Equus quagga*), steenboks (*Raphicerus campestris*), ostriches (*Struthio camelus*), gemsboks (*Oryx gazelle*) and kudus (*Tragelaphus strepsiceros*) among others was observed in the area as shown in Figure 5-12.





Figure 5-12: The wildlife observed within the EPL in January 2023

5.2.1.2 Flora

EPL 8787 is located within the Karas Dwarf Shrubland Vegetation Type in southern Namibia, with the dominant structures being grassland and low shrubs. The plant endemism in the project area is determined in the range of 2 to 5 species (Mendelsohn et al, 2002). In terms of vegetation structure (the dominant and most prominent forms of plant present), the EPL area is found within a sparse shrubland vegetation structure as shown in Figure 5-13.

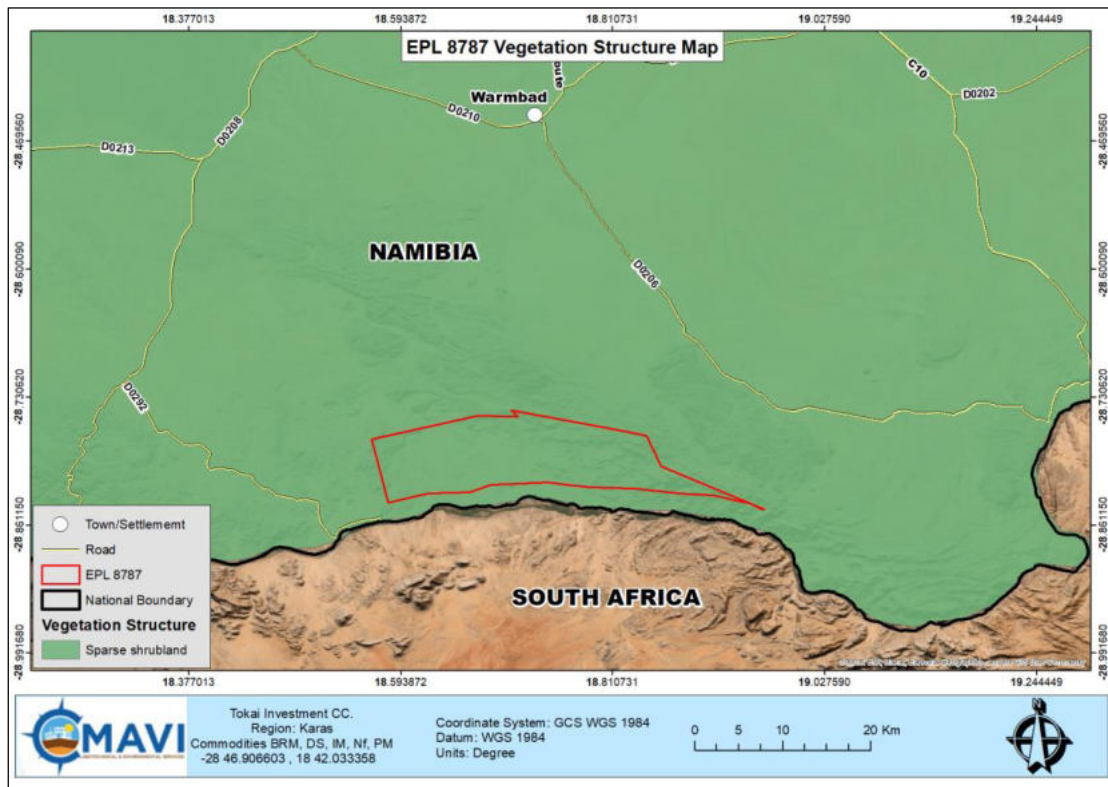


Figure 5-13: The vegetation map of the EPL area

The Dwarf Shrub Savanna and the Karas Dwarf Shrubland. Hillsides are typically dominated by Euphorbia, Aloe and Boscia species, and while on the plains, the dominant species include *Rhigozum trichotomum*, *Parkinsonia africana* and grasslands

are dominated by *Stipagrostis* species. Larger drainage lines are vegetated with *Acacia erioloba*, *A. karroo*, *Tamarix usneoides*, *Euclea pseudebenus*, *Rhus lancea*, succulent shrubs such as *Euphorbia gregaria*, *Euphorbia guerichiana*, *Ficus cordata*, *Ficus ilicina* and others. These vegetation occurring onsite is shown in the photos (Figure 5-14).



Figure 5-14: The vegetation types within the EPL area

5.3 Socio-Economic Aspects

5.3.1 Demographic Aspects

During the 2011 Population and Housing Census, the number of inhabitants in the //Karas Region was assessed at 77,421 people (Namibia Statistics Agency, 2014). //Karas Region is the least populated district (0.5 people per km²) in Namibia (Namibia Statistics Agency, 2014).

The Warmbad and EPL area fall under the Karasburg Constituency, which by 2011 had a population of 16,470 (8,402 females and 8,068 males). Out of the 16,470 population, 4,401 accounted for the urban area, which left the rural population at 12,069.

5.3.2 Education and Employment

According to the Namibia Statistics Agency (2014), the population of the Karasburg Constituency's 15+ age was 6% (never attended school), 7% (at school at the time of the Census), 85% (left school).

The labour force (15+ year) of 78% indicated that the unemployed and employed population was 66% and 34%.

5.3.3 Economic Activities

In terms of economy, by 2011, the main sources of household income in the Constituency were recorded at farming (5%), wages & salaries (72%), cash remittance (7%), business, non-farming (3%) and pension at 9% (Namibia Statistics Agency, 2014).

From a local perspective, the following economic activities are undertaken:

5.3.3.1 Agriculture

The inland area of the EPL is dry and therefore, unsuitable for any agricultural activity. However, there are small gardens that belong to the lodges can be found at the banks of the Orange River.

5.3.3.2 Tourism

The //Karas Region is home to some tourist destinations in Namibia with various hospitality establishments and activities for tourists, visitors, and travellers alike. The EPL area is mainly a conservation environment, which is currently hosts eco-tourism activities.

5.3.4 Land Use

The EPL area is one of the driest part of the country and unsuitable for any agricultural activity, but highly suitable for eco-tourism, or as conservation or wilderness areas (Irish et al., 2008), which explains the operations of establishments such as the Sandfontein Lodge and Nature Reserves. Small gardens that belong to the lodges can be found at the banks of the Orange River.

5.3.5 Infrastructure & Utilities

The EPL area has the following main services and infrastructure:

- Roads (accessibility): the EPL is accessible from the nearest district roads such as the D0292 and D0206.
- Water: there are some windmill powered boreholes in the area.
- Power supply: the area is powered by solar energy.
- Telecommunication: as indicated in the consultation meeting, there area has poor to no telephone signal. However, there is internet connection at the accommodation facilities.

5.3.6 Archaeology and Heritage Aspect

The archaeology and heritage baseline information of the EPL area was compiled by the Archaeologist (TARO Archaeology & Heritage Consultants, 2023) as provided in the Archaeology & Heritage Impact Assessment Report based on the site assessment and findings.

The archaeology of the study area remains unexplored and unknown to some extent. However, a little bit is known about the general history of the area surrounding Orange River , and thus, this archaeological assessment also draws on some reports and journals. Thanks to the work of early travellers, researchers, and contemporary archaeologists from both sides (SA & Namibia) such as J. Kinahan and the like.

The distribution of archaeological sites within the study area and concerning the proposed exploration project is characterized by different and interesting land formations. The locality in question has some obvious archaeological significance. The main reason why there are so many potentials for archaeological sites around these environs is because of the presence of permanent water sources i.e. the presence of perennial Orange River, several tributaries and streams and thus pre-historic people could easily settle and flourish here.

However, due to time constraints and terrain accessibility, only two farms of interest were thoroughly surveyed i.e. Houms Rivier and Girtis, and of course, other parts of the larger Sandfontein nature reserves were also surveyed, however, the accessibility to farm Hartebeesmund proved to be a difficulty. The occurrence of the heritage resources (archaeological, historical and cultural) as stated above is widespread in these environs, the distribution of these sites is also far wider and can be found in most of the farms such as Houms and Girtis farms and within the larger part of the entire Sandfontein landscape, however, it turned out that farm Houmsrivier has the most archaeological findings than other areas.

The archaeological and heritage resources found are within the Pleistocene to Holocene periods, the findings included but were not limited to graves and burial

grounds or sites (stone cairns), several remains of nomadic pastoral encampments, historical or colonial sites, war and military activities sites, stone walls (fortified walls), bullet cases, horseshoe, rock shelters and caves, stone artefacts and related archaeological sites including geomorphological and geologic settings. These features can be archaeologically interpreted in a wider spectrum of events as well as contextual archaeology. Also the use of an old German map from the 1900s, the aim was to observe historical structures and colonial access routes, especially during and before the time of wars i.e. Germans colonial forces against Nama fighters, and Germans forces against Union of South African Troops.

While all the archaeological and heritage sites mentioned in this report are part of the Namibian National Heritage, and are therefore important, since archaeological, cultural or heritage resources are site-specific, and their values are interconnected to the contextual environments that they are found in, and therefore they are of special interest to locals, and some mainly because of their uniqueness are of special scientific interest and educational purposes or other interest.

The archaeology map of the pre-recorded resources is shown in Figure 5-15 below.

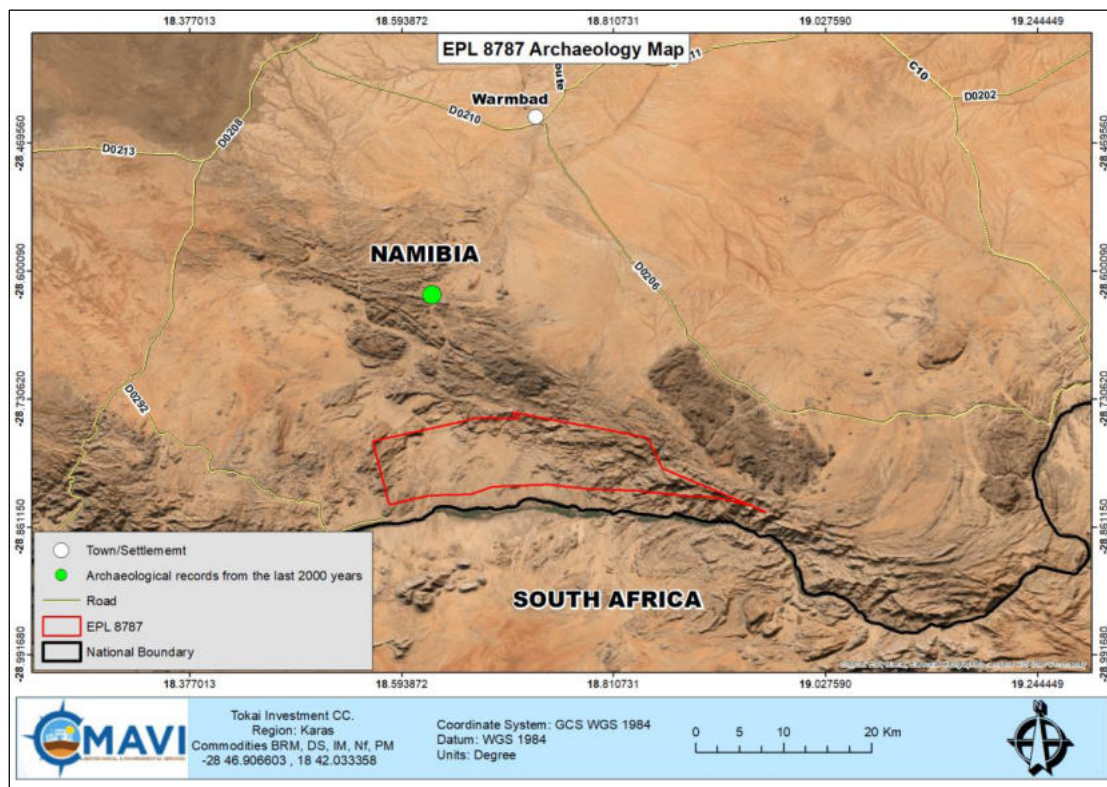


Figure 5-15: The archaeology and heritage map of the EPL area

In terms of local archaeological and cultural sites and objects within the EPL, these were identified as listed below (the full description of the findings are provided in the specialist Report):

- Grave Sites/Stone Cairns and Burial grounds: Graves and monuments are also tangible and symbolic reminders of individual, family and community histories of bereavement. This history is as much concerned with the record of individual loss, as with collective representation of suffering, or ideas of patriotic sacrifice or national aspirations. During the site surveys, recorded were the German mass graves near the Auros River which resulted from the 1906 war conflicts between the Colonial forces and the locals Nama who were fierce, fearless and cunning fighters.
- Evidence of Pre-historic Settlements/Occupation: Hut circle complexes have been reported from several locations in Namibia (Carr et al. 1978; Rudner 1957; Viereck 1968) including some from southern Namib at Cape Cross (Wendt 1972) and at Grillenberg (290 6' S, 14° 34' E) near Conception Bay (240 6' S, 14° 34' E).
- Stone Artefacts (Pleistocene to Holocene): The site surveys recorded stone artefacts of ESA, MSA & LSA periods, however, ESA artefacts are quite fewer as compared to MSA & LSA assemblages. Findings and other research showed that the early hominids down to our species Homo sapiens, engaged in the use of basic, sometimes crude up to multi-complex stone manufactured tools were being practised for their daily survival, from foraging plant food, marine food and fresh-water springs, raw material for manufacturing stone tools and knapping activities were sought, transported, manufactured, used and sometimes discarded.
- Historical sites and Military Objects: These included the military base camps for German Schutztruppe, the Sandfontein hills where the German Colonial forces defeated the Union of South African troops on behalf of the British Imperial Government on 26 September 1914.
- Rock Shelter and Overhangs: Past and contemporary archaeological studies have shown that rock shelters, caves and overhangs are likely to be archaeologically sensitive.
- Historic/Old track route: This particular site comprises of historical access route which was routinely used by the German Colonial forces.

Geospatial maps for Archaeological, historical, heritage findings and buffer zones.

The topographic map in Figure 5-16 was created from the coordinates taken during the site surface surveys on archaeological objects within the EPL and immediate surroundings. The map clearly shows the archaeological & heritage-sensitive sites. Note that these are clusters of findings but denoted in single symbols to represent the same or different findings.

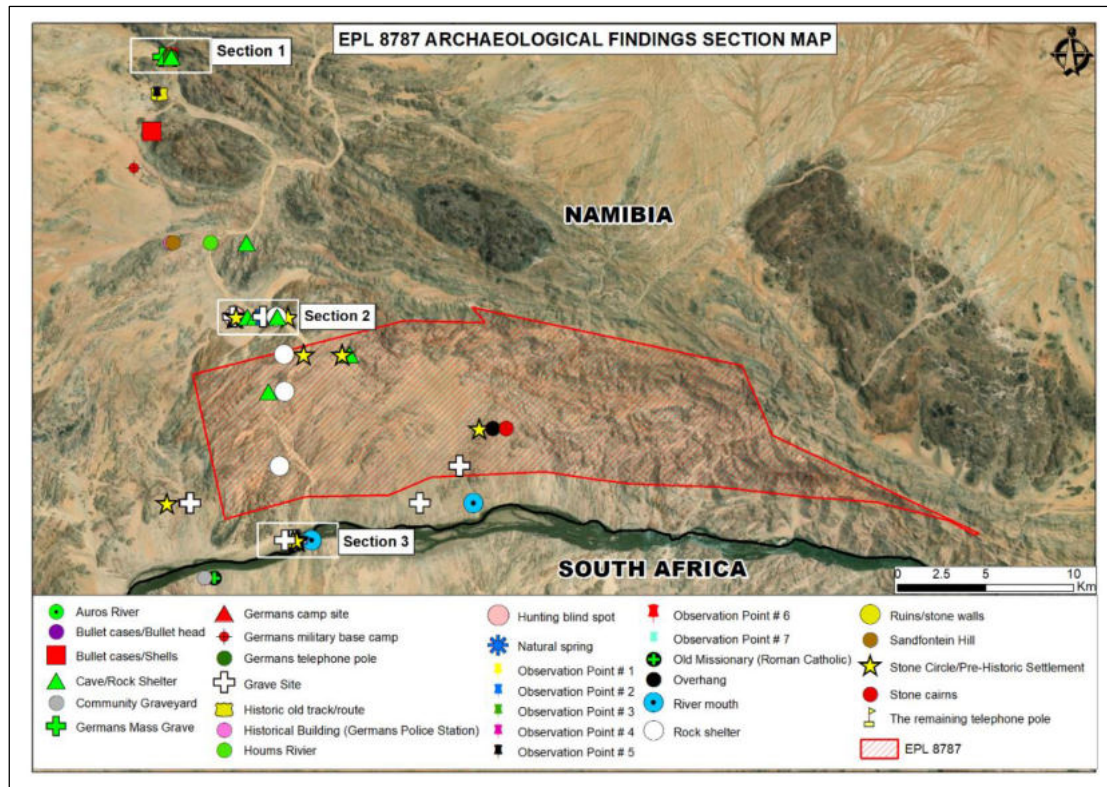


Figure 5-16: All the recorded heritage resources in the surveyed areas of EPL 8787 (TARO Archaeology & Heritage Consultants, 2023)

6 PUBLIC CONSULTATION PROCESS

The Public Consultation process aims to ensure that all persons or organizations who may be affected or interested in the project are kept informed of the project activities, potential issues and benefits, and can register their views and concerns. Building from there, the process provides an opportunity to interested and affected parties to influence the project design so that its benefits can be maximized, and potential negative impacts minimized.

Current best practice model involves engaging in a process of continuous dialogue with the affected communities and other stakeholders as plans for the project evolve and the environmental assessment is advanced. A high level of interaction is maintained, potential and actual socio-economic plus environmental impacts are identified, and stakeholder needs and concerns are discussed and wherever possible built into the planned activities of the project, including decision-making and management practices. Good and transparent consultation helps foster genuine and positive relationships with mutual respect, shared concerns and objectives between the company pursuing or involved in the development and the community.

The public participation facilitator's role is to coordinate the above process of dialogue to ensure there is transparency and accountability in decision-making and public confidence in the proposed activities and its management.

6.1 Registered Interested and Affected Parties (I&APs)

At the beginning of this environmental assessment process, a preliminary list of the obvious stakeholders who needed to be informed about the proposed project was drawn up. As the public participation process evolved, this list was continuously updated. A complete summary of the I&APs identified and registered for the project is attached hereto. The pre-identified interested and affected parties (I&APs) were notified about the planned activities by e-mail, formal communication letters, advertisement in local newspapers, and display of written notices at strategic points within the settlement of Warmbad. Some of the I&APs on the list provided registered their names during the one-on-one consultation meeting held at the Warmbad Church Hall on the 2nd of December 2022.

Amongst key stakeholders identified and registered for this project were:

- **Central or national government:** Ministry of Environment, Forestry & Tourism; Ministry of Mines & Energy; Ministry of Agriculture & Land Reform; Ministry of Urban & Rural Development; Ministry of Industrialisation and Trade; National Heritage Council of Namibia (under the Ministry of Education, Arts & Culture)
- **Regional government:** Karas Regional Council including the Karasburg East and Karasburg West Constituency Councils.
- **Local authority and Parastatals:** Karasburg Town Council, Warmbad Settlement, Roads Authority, Local Authorities of Namibia, Namwater, National Heritage Council, Namibia Chamber of Mines, National Botanical Research Institute, NCCI
- **Members of the public:** The owner and manager of farms Houms Revier, Sandfontein and Girtis; Management of adjacent mining property (Tantallite Valley Mine); the Namibian Chamber of Environment; Independent botanists; Community members from the broader Warmbad area including residents on farm Hartebeestmund.

6.2 Summary of Activities Undertaken

To ensure that I&APs were timeously and openly notified of the planned project activities, the following tasks were undertaken by OMAVI:

- A list of pre-identified I&APs was compiled. This list included representatives from government institutions (ministries, regional and local authorities) and representatives from non-governmental organisations (NGOs) such as the Botanical Institute of Namibia and the National Heritage Council.
- A notification email was circulated to all identified and registered I&APs in early to mid-November 2022 announcing the commencement of the EA process and an invitation to register as an I&AP as well as to attend the public consultation meeting which was scheduled for 10h00 on 7th of December 2022. Included in this email was the Background Information Document (BID) which provided a high-level and preliminary description of the planned scope of activities for the proposed mineral prospecting project. Comments register form was also attached to this email to encourage written inputs from the general public. A copy of this email trail is attached hereto.
- Formal public notices announcing the commencement of the Environmental Assessment process and extending a formal invitation to the general public to register as I&AP as well as to attend the public consultation meeting were published in *Die Republikein*, *The Namibia Sun* and *Allgemeine Zeitung* newspapers (dated 22nd November 2022 and 29th November 2022; please refer to appendices attached hereto).

- Printed formal written site notices were placed at various publicly accessible locations in Warmbad as outlined below:
 - Warmbad Police Station notice board
 - Warmbad Community Library notice board
 - Warmbad Mini Mark
 - Warmbad clinic
 - Warmbad settlement office
 - Michael Durocher Primary School in Warmbad
 - Several local cuca shops in Warmbad such as Mafikizolo Bar, Kazi Spaza Shop, Groen Winkel and Club Casamia
- In addition, the BID was distributed on request to I&APs during the environmental assessment process.

A summary of the main issues and concerns raised during these engagements is provided in Table 6-1. Overall, no objections with merit were raised or received from the I&APs in relation to the project

Table 6-1. Summary of key issues and concerns raised in relation to activities on EPL 8787

| Issue | Summary |
|---|--|
| Impact on flora and fauna (sensitivity) | The high endemism of the flora in the //Karas Region |
| Impact on conservation and Tourism | There are delicate fauna and flora |
| Impact on soils | The disturbance to site soils and prone to erosion |
| Noise and light (visual) | - |
| The issue of lack of timely communication | The EAP and Proponent should improve their communication and transparency when consulting landowners/stakeholders. |
| Illegal harvesting of flora and hunting of fauna | The fear of illegal collection of flora and hunting of fauna (poaching). |
| Land use conflict (tourism and existing small-scale miners) | The issue of exploration in a conservation and tourism area. |
| Impact on archaeology | The area along the Orange River is rich in archaeological resources |
| Waste management | Waste should be managed properly |
| Relocation of landowners/occupiers | I&APs worried possible relocation from their ancestral land due to possible mining operations in the future. |
| Rehabilitation | The issue of un-rehabilitated sites disturbed from exploration activities. |

7 IMPACT IDENTIFICATION AND ASSESSMENT

7.1 Key impacts Identified

The following impacts have been identified as associated with the proposed exploration activities.

Positive impacts:

- Temporary employment opportunities.
- Boosting the local economic growth through corporate social responsibility (CSR).
- Increased support for local businesses through the procurement of locally available goods and services during exploration.

Negative impacts:

- Physical land/soil disturbance and prone to erosion
- Impact on fauna and flora (habitat disturbance and poaching).
- Water resources (over-abstraction of water) and soils pollution.
- Air quality issue owing to dust generation from drilling works
- Occupational and community health and safety risks/hazards
- Vehicular traffic safety
- Noise associated with drilling activities.
- Environmental pollution from poor waste management
- Archaeological or cultural heritage impact
- Impact on tourism and associated land use conflicts
- Visual impact (from lightings)
- Land use conflict (tourism and existing small-scale miners).

7.2 Impact Assessment Methodology

An impact assessment matrix was used to assess all possible impacts of the project on the environment. In line with EMA No. 7 of 2007 and the Environmental Impacts Regulations (GN 30 in GG 4878 of 6 February 2012) with the direction on impacts analysis the following impact assessment criteria (Table 7-1) was deemed suitable.

Table 7-1: Impact Screening Criteria

| Aspect | Description |
|--------------|---|
| Nature | Focuses on the type of effect that the proposed project will have on environmental components. Addresses questions related to "what will be affected and how?" |
| Extent | Spatial extend of the project and anticipated spatial extend of impacts indicating whether the impact will be within a limited area (on site where exploration is to take place); local (limited to within 15km of the area); regional (limited to ~100km radius); national (extending beyond Namibia's borders). |
| Duration | This looks at the temporal issues pertaining to time frames e.g., whether the impact will be temporary (for a certain period only, i.e., exploration), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent. |
| Intensity | Establishes whether the magnitude of the impact is destructive or innocuous and whether it exceeds set standards and is described as none (no impact); low (where natural/ social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements). |
| Probability | Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures). |
| Significance | Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the route can be used, but with deviations or mitigation) High where it could have a "no-go" implication regardless of any possible mitigation (an alternative route should be used). |

The application of the above criteria will be used to determine the significance of potential impacts using a combination of duration, extent, and intensity/magnitude, augmented by probability, cumulative effects, and confidence. Significance is described as follows in Table 7-2.

Table 7-2: Impact Rating Criteria

| Significance Rating | Criteria |
|---------------------|---|
| Low | Where the impact will have a negligible influence on the environment and no modifications or mitigations are necessary for the given development description. This would be allocated to impacts of any severity/ magnitude, if at a local scale/ extent and of temporary duration/time. |
| Medium | Where the impact could have an influence on the environment, which will require modification of the development design and/or alternative mitigation. This would be allocated to impacts of moderate severity/magnitude, locally to regionally, and in the short term. |
| High | Where the impact could have a significant influence on the environment and, in the event of a negative impact the activity(ies) causing it, should not be permitted (i.e., there could be a 'no-go' implication for the development, regardless of any possible mitigation). This would be allocated to impacts of high magnitude, locally for longer than a month, and/or of high magnitude regionally and beyond. |

7.3 Assessment of Impacts

The potential negative impacts can occur if the planning and design of an activity is not properly done. At times, the planning and designs are properly done, and environmental management and mitigation measures provided to avoid and/or minimize these impacts. However, if these management measures are not effectively implemented on site, the potential impacts would be inevitable.

The potential positive and adverse impacts anticipated from the project activities. However, since the positive impacts are few, this assessment focuses on the potential negative impacts where mitigations will need to be implemented to minimize the impact on the environment. These impact are described and assessed in Table 7-3 . The management actions (measures/mitigations) are provided in the accompanying Draft EMP (EMRP) developed for the proposed project activities.

Table 7-3: Assessment of the potential impacts stemming from the proposed exploration activities

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|---|---|--------|------------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| Planning, Exploration and Maintenance Phase – Adverse (Negative) Impacts | | | | | | | | |
| Physical land / soil disturbance | <p>-The movement of heavy vehicles and equipment may lead to compaction of the soils.</p> <p>-The exploration and mining activities such as excavations and land clearing to enable siting of project structures and equipment will potentially result in soil disturbance which will leave the site soils exposed to erosion. This impact is probable since the EPL area has very little to scattered vegetation that would hold the soils in place with their roots and the fact that desert soils are prone to disturbance</p> | Local | Short-term | Medium | Definite | High | <p>-Exploration activities should be restricted to defined areas of the EPL.</p> <p>-The topsoil stripped from certain site areas should be returned to its initial position during rehabilitation.</p> <p>-Soils not within the intended footprints of the site areas should be left undisturbed and conserved.</p> <p>-Project vehicles should stick to access roads provided to avoid re-creation of further tracks resulting in soil traffic compaction.</p> <p>-Overburden should be handled more efficiently during exploration to avoid erosion when subjected erosional processes</p> <p>-Stockpiled topsoil and overburden waste rocks should be used to backfill the explored site areas/spots for rehabilitation.</p> <p>Further measures are provided in the Draft EMP</p> | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|-------------------------------|--|--------|------------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | and erosion. This would also trigger the challenge of sediment control during rainy seasons. | | | | | | | |
| Impact on biodiversity: Fauna | <p>-Small reptiles and site animals in the locality are bound and likely to be affected by exploration activities.</p> <p>-The site activities would push away fauna that live onsite (in vegetation and rocky environment).</p> <p>-The noise from exploration activities will also drive away site wildlife.</p> <p>-There is risk of illegal hunting of wildlife.</p> <p>-The exploration trenches and uncapped holes may pose a risk to wildlife</p> | Local | Short-term | Medium | Definite | High | <p>-Workers should refrain from disturbing, killing or stealing animals and killing small soil and rock outcrops' species found on sites.</p> <p>-Minimize animal fatalities from collisions with vehicles by adhering to speed limits onsite and avoid night driving.</p> <p>-The Hazardous substances such as fuel should kept in tightly close tanks and fenced off</p> <p>-The hunting of wildlife onsite is strictly prohibited.</p> <p>-Site personnel should refrain from killing/poaching or snaring or intentionally disturbing local animals that may be found on and around the exploration sites.</p> <p>-Ensure that the exploration trenches are backfilled or fenced</p> | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|-------------------------------|--|--------|-----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | onsite, if not backfilled or fenced off. | | | | | | off, when in use for a longer period and unattended. | |
| Impact on biodiversity: Flora | <p>-The removal of vegetation to enable exploration and associated infrastructure and service would lead to the reduction of the vegetation on and around the site.</p> <p>-The uncontrolled dust emanating from the drilling activities may be trapped on the vegetation leaves, resulting in reduced photosynthesis which would affect vegetation functionality.</p> <p>-The disposal of hazardous waste such as oils and fuels would affect vegetation health. Therefore, should be prohibited.</p> | Local | Long-term | Medium | Probable | High | <p>-Vegetation outside the site boundary should not be disturbed.</p> <p>-Trees onsite must be marked and and pegging personnel must know that marked trees must not be touched for continued preservation).</p> <p>-Trees within the site boundaries should be preserved.</p> <p>-The Proponent should aim to use the already damaged area with little to no vegetation for the site activities.</p> <p>-Onsite vegetation should NOT be cut or used for firewood related to the project outside the site boundaries.</p> <p>-Provide environmental awareness training to promote environmental education on the importance of floral biodiversity preservation to workers.</p> | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--|---|--------|------------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | | Local | Long-term | Medium | Probable | Medium | | Low |
| Environmental pollution (solid, domestic and wastewater) | Exploration activities are associated with generation of waste of all kinds (domestic, hazardous, and general). Improper handling, storage and disposal of wastes may lead to environmental degradation/pollution. If not handled, store and disposed of properly, the waste may scatter around the EPL and pollute the immediate project area. | Local | Long-term | Medium | Definite | Medium | -Waste should be disposed of in designated waste containers onsite. -No waste should be buried or burned on site in both phases. -Waste burning onsite should be done at designated sites only outside the EPL area. -The site should be equipped with separate waste bins for hazardous and general waste/domestic. -A penalty system for irresponsible disposal of waste on site and anywhere in the area should be implemented. -The site should be equipped with sufficient portable toilets for workers, and visitors. | Low |
| Environmental contamination by hydrocarbons release into the environment (grease, oils, fuel spills) | There is a potential of oils and fuel storage on site to supply the vehicles and equipment. Therefore, there is a risk of spillage | local | Short Term | Medium | Probable | Medium | -The Proponent should implement a maintenance programme to ensure all vehicles, machinery and equipment are and remain in proper working order. | -Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--|---|--------|-----------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| and leakages from machinery and fugitive wastes.) | <p>of hydrocarbons from vehicles and machinery through leakages and spillages which may result in:</p> <ul style="list-style-type: none"> -Washing away of contaminated soils by rains into nearby rivers resulting in both possible surface water and groundwater pollution -Pollution of soil and affecting small living organisms habituating the soil. -Possible fire risk on and around the site from these flammable substances. | | | | | | <ul style="list-style-type: none"> -Vehicle maintenance should be done in designated areas only, preferably off-site. If maintenance is to be conducted on site, these areas should be designed to contain spillages i.e., maintenance site must be bundled and paved, and the use of chemicals must be controlled. -Waste oil, fuels and other chemicals from drip trays on stationery vehicles and machinery will be disposed of as hazardous waste at a licensed facility by a specialist hazardous waste handler. -Spill kits will be easily accessible, and workers will be trained in the use thereof. -Personnel should be trained in the handling and storage of oils, fuels, chemicals and other hazardous substances. | |
| Contamination of soils and water resources (groundwater and surface water) | -The mishandling and poor disposal of contaminants such as hazardous waste and wastewater from site | Local | Temporary | Medium | Probable | Medium | -All runoff materials such as hydrocarbons, wastewater and other potential contaminants should be contained on site in designated containers and | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|---|--|--------|-----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | activities would pollute soils, get washed into surface water run-off and eventually infiltrating into the ground and pollute aquifers (groundwater). | | | | | | disposed of in accordance with municipal wastewater discharge standards, so that they do not reach to water systems. -Consider exploration works such as drilling to be carried out during dry months of the years and not during rainy months (to avoid ease contaminants like hydrocarbons from transported off site through run-off). -No washing of vehicles or equipment near or at the Orange River or any ephemeral river onsite. | |
| Water resources (over-abstraction of water) and soils pollution | -Drilling requires a lot of water. Therefore abstraction of water from local aquifers would negatively affect these aquifers due to low groundwater potential of the area. | Local | Temporary | Medium | Definite | High | -Avoid abstraction of water from local boreholes but rather obtain a permit to abstract and use water from the Orange River. -Water should be efficiently used by implementing water saving measures such as recycle and re-use where necessary and possible. This includes using water for cooling exploration equipment for the cleaning of project equipment. | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|-------------------------------------|---|--------|------------------------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | | | | | | | -Water conservation awareness and saving measures training should be provided to all the project workers in both phases so that they understand the importance of conserving water and become accountable. | |
| Occupational and public health and) | The risk of injuries from mishandling of project equipment and machinery by workers. - | Local | Temporary to Long-term | Medium | Definite | High | -The site workers and visitors should be equipped with appropriate and sufficient PPE (hand gloves, safety goggles, boots, earplugs, overalls, face masks, hard hats, etc). -Workers should be provided with refresher training on machinery and equipment use. -Trainings and "know-how" to use PPE should be provided to all workers as part of their induction. -The site should be equipped with a minimum of two first aid kits. Two or three of the workers should be trained on how to administer first aid. -Risk areas such as open trenches should be fenced off and warning signs placed on the fences. . | Medium / Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--|---|--------|------------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | | | | | | | -The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the personnel or wild animals. -Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible. -An emergency preparedness plan should be compiled, and all personnel appropriately trained. -Workers should not be allowed to drink alcohol prior to and during working hours. | |
| Air quality (drilling dust & emissions from vehicles and unpaved access roads) | Exploration drilling is usually associated with dust and vehicles travelling on gravel and unpaved access sandy roads. This will lead to the decrease in the air quality around the site. | Local | Short-term | Medium | Definite | Medium | -During extremely windy days, a reasonable amount of water should be used to suppress the dust that may be emanating from certain site areas (limited to the site only) or certain parts of the local utilized gravel roads that is generating a lot of dust. -All access roads leading to the site should have speed limits of no more | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--------|--|--------|----------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | | | | | | | <p>than 30km/h to minimise the amount of dust generated by the vehicles, which will minimise air quality concerns to any potential receptors.</p> <p>-Dust masks, eye protective glasses and other respiratory personal protective equipment (PPE) should be provided to the workers on site operating or working at the excavated areas, where they may be exposed to dust.</p> <p>-The transportation of project materials, equipment and machinery should be limited to twice a week to reduce dust generated by heavy vehicles in the area.</p> <p>-Project vehicles and heavy machines should not be left idling when not in use, such that they emit air polluting gases.</p> <p>-Project vehicles and machinery should be maintained through regular servicing to ensure that they do not release harmful and air polluting fumes while on and off site.</p> | |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|-------------------|--|--------|------------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| Vehicular traffic | Project associated heavy vehicles will obtain access to the site from the local roads that connects the EPL to exploration activities' service providers (water exploration machinery, equipment, and others). The movement of trucks would potentially increase slow moving heavy vehicular traffic in the area. The impact would not only be felt by the road users but the local road users. This would add additional pressure on the roads. | Local | Short-term | Medium | Probable | Medium | <ul style="list-style-type: none"> -The transportation of exploration materials, equipment and machinery should be limited to once or twice a week only, but not every day. -The heavy truck loads should comply with the maximum allowed limit while transporting materials and equipment/machinery on the public and access roads. -Vehicles drivers should be in possession of valid and appropriate driving licenses. -Vehicle drivers should adhere to the road safety rules. -Drivers should drive slowly (30km/hour or less), and on the lookout for livestock and wildlife. -Ensure that the site access roads are well upgraded and in good condition to cater for vehicles travelling to and from site. -Project vehicles should be in a road worthy condition and serviced | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--|--|--------|------------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | | | | | | | regularly to avoid accidents due to mechanical faults of vehicles. -Vehicle drivers should only make use of designated site access roads provided. -Vehicle's drivers should not be allowed to operate vehicles while under the influence of alcohol. | |
| Archaeological or cultural heritage impact | The greatest impact is likely to be caused by earthworks in the form of clearing, removing, or micro-sitting of the project equipment. These resources may be impacted through inadvertent destruction or damage. The EPL area is known to have sensitive archaeological and heritage sites, therefore chance finds procedure, archaeological mitigation measures and heritage | Local | Short-term | Medium | Probable | High | -If any archaeological materials or human burials or skeletal remains are uncovered during prospecting or exploration activities, then the work in the immediate area should be halted, the finds would need to be reported to the Heritage Authority and may require inspection by an Archaeologist. The Environmental Officer should have the area fenced off and contact NHC (Tel: +264 61 244 375), National Forensic Laboratory (+264 61 240 461) immediately. -Known sites should be marked so that they can be avoided during exploration activities. -The contractors and exploration crews/workers should be notified | Medium / Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|---|---|--------|------------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | monitoring approaches are highly recommended to be adopted and implemented throughout the exploration activities to avoid any destruction and disturbances of the known and unknown archaeological materials. The most potentially affected resources are Stone artefacts, rock shelters and caves, graves and military campsites, etc identified onsite. | | | | | | that archaeological sites might be exposed during the prospecting and exploration activities. -Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible. Full measures are provided in the EMP/EMRP | |
| Noise associated with drilling activities and heavy vehicles moving on and around the EPL | -The noise created by moving heavy trucks, drilling works would be a nuisance to the residents in the nearby households on the farms. Prolonged | Local | Short-term | Medium | Definite | High | -All workers on site must be equipped with ear plugs to be used when exposed to excessive noise. -Switch off machines that are not used. -All locals must be notified on time about drilling activities prior. | Medium / Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|----------------|---|--------|-----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | <p>exposure to excessive noise to the site personnel would also be a health risk if there is no appropriate Personal Protective Equipment (PPE).</p> <p>-Excessive noise may impact the animals such as birds and reptiles. Birds tend to abandon their nests if subjected to continuous noise.</p> <p>-Noise would also disturb wildlife kept on the farms (EPL site).</p> | | | | | | <p>-All noisy exploration works such as drilling activities must not be carried out in the night, early morning (before 08h00) and evenings (after 17h00).</p> <p>-Avoid drilling within 100m of trees where birds are likely to have nests.</p> <p>-Target exploration sites that may be found to be within less than 1 km from the residence (farmhouses) should be avoided at all cost. This is done to preserve some tranquillity for the residents.</p> <p>-Farmers/landowners should be notified of drilling dates and locations on the EPL.</p> | |
| Visual impacts | <p>-The project structures and dust created by heavy vehicles may create a visual impact.</p> <p>-The sight of exploration equipment and vehicles on the EPL may be a nuisance to the residents, motorists and</p> | Local | Long-term | Medium | Probable | Medium | <p>-Create appropriate buffer zones and screens to minimize visual intrusion.</p> <p>-There should be no exploration works done after 17h00 to avoid night lightings.</p> <p>-All gravel roads should have a speed limit of no more than 30km/h to minimise the amount of dust generated by the vehicles.</p> | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--|---|--------|-----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | <p>tourists travelling on the local roads.</p> <p>-The lights associated with the campsite infrastructure such as ablution would be a nuisance in the nights.</p> | | | | | | <p>-The support infrastructure lights should be installed at low level on the structures and facing the side without homes to impact.</p> <p>-The color of the infrastructure should not be bright to cause a discrepancy, thus, visual nuisance.</p> | |
| Lack of communication cooperation and transparency | <p>-A campsite will be required and because of this, some of the project workers may behave contrary to the wishes of the landowners or occupiers of land. Not only the workers' potential unacceptable behaviors but other inconveniences to the landowners' biophysical and social aspects related to the project activities. If not managed effectively,</p> | Local | Long-term | Medium | Probable | Medium | <p>-A Public Relation Officer (PRO) should be appointed for the project. They will be responsible for ongoing consultations (liaising) with the affected farmers/landowners as well as handling potential grievances related to the project activities, as and when required.</p> <p>-The PRO should be introduced to the farm/landowners and his or her contact details provided to them prior to undertaking activities for easy communication during the exploration activities.</p> <p>-The Proponent should compile a clear communication procedure/plan which should</p> | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--------|---|--------|----------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | these have the potential to result in destructive conflicts between the Proponent and landowners. | | | | | | include a grievance and response mechanism. | |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|---|--|--------|-----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| Farms and Surrounding services Infrastructure (roads, fence, and pipelines) | The movement of vehicles such as heavy truck around private and even communal/public farms may lead to the destruction / damaging of buried farm or even public water pipelines and or power supply cables. This is likely to happen; especially during rainy seasons when the buried pipes get compacted or deformed once driven over by heavy vehicles. Other impacts on farm infrastructure include | Local | Long-term | Medium | Probable | Medium | -Consult with the farmers to help in locating possible buried cables and pipelines on their properties (farms) to avoid damages to buried services such as water and power supply lines and cables. -If possible, heavy trucks should avoid driving over farm areas that are known to have pipelines or any related infrastructure buried. -The project personnel should be informed not to leave the farms' gates open, but close or lock them as instructed by the farm owners. -Project equipment and machinery should not be left leaning on the farm fences (using the fences as support). -Agreement and continued engagement with landowners / farm owners on use and maintenance of farm infrastructure (roads, fences, gates, etc.) should be implemented and maintained. | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--|---|--------|-----------|-----------|-------------|---------------------------|---|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | farm gates being left open and heavy exploration machinery or equipment damaging farm fences if extensive work is done too close to the fences. | | | | | | | |
| Social Grievance: Property intrusion and Disturbance or Damage | The presence of some workers may lead to social annoyance to the local community. This could particularly be a concern when workers enter or damage properties of the locals. The locals' private properties could be homes, yards/fences, vegetation, or domestic or wild animals or any properties of value to the farm owners or occupiers of the land. The damage or disturbance to | Local | Long-term | Medium | Probable | Medium | -Workers should be informed of the importance of respecting the locals' properties by not intruding or damage their homes, fences or snaring and killing animals on the farms. -Any workers or site employees that will be found guilty of intruding peoples 'privately owned properties should be called in for disciplinary hearing and/or dealt with as per their employer' (Proponent)'s code of employment conduct -Site workers should be advised to respect the locals' properties, values, and norms. -No worker should be allowed to wander in people's private yards or fences without permission. | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|---|--|--------|-----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | properties may not only be private but local public properties. The unpermitted and unauthorized entry to private properties may cause social crashes between the local community (affected property owners) and the Proponent (being responsible for the overall project activities). | | | | | | -Workers are not allowed to kill or in any way disturb local livestock. -No worker should be allowed to cut down or damage trees belonging either the farm owner, the neighbouring farms or in the already scarce community vegetation | |
| Impact on tourism and associated land use conflicts | The exploration activities will potentially have an impact on tourism due to the fact that the area is presently undisturbed or exploration activities undertaken on the farm were done years ago. The disturbance caused by exploration | Local | Long term | Medium | Definite | High | -Exploration activities should be done away from the farm access roads to reduce visual impacts emanating from drilling dust and exploration set ups, thus limiting the impact on tourism. -The disturbed areas should be rehabilitated soon after completion of work (progressive rehabilitation). -The poaching of wildlife should not be tolerated. | Medium/Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|---|--|--------|-----------|-----------|-----------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | may reduce the attractiveness of the area to tourists, thus negatively impact the industry. | | | | | | -The venting of project workers should be done to ensure that the workers can be trusted to work in such a sensitive area where tourists are visiting. | |
| The spread of HIV/AIDS and other STDs throughout the project. | -The inflow of employees and other people into the area can result in the spread of HIV/AIDS, other STDs | Local | Long term | Medium | Highly probable | Low | -Awareness should be raised at workplace and provision of condoms to all onsite workers. -Promote the education of the employees and the public on the importance of having protected sex | Low |
| Occupational and community health and safety | -Project personnel (workers) involved in the exploration activities may be exposed to health and safety risks. These are in terms of accidental injury, owing to either minor or major (i.e., involving heavy machinery or vehicles) accidents. The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any | Local | Long-term | Medium | Probable | Medium | -The Proponent should commit to and make provision for bi-annual full medical check-up for all the workers at site to monitor the impact of project related activities on workers. -As part of their induction, the project workers should be provided with an awareness training of the risks of mishandling equipment and materials on site as well as health and safety risk associated with their respective jobs. -When working on site, employees should be properly equipped with adequate personal protective equipment (PPE) such as coveralls, | Low |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--------|---|--------|----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | <p>harm or injury to the Proponent's personnel or wildlife.</p> <p>The use of heavy equipment, especially during drilling and the presence of hydrocarbons on sites may result in accidental fire outbreaks. This could pose a safety risk to the project personnel and equipment and vehicles too.</p> <p>If machinery and equipment are not properly stored and packed, the safety risk may not only be a concern for project workers but residents and animals (wildlife).</p> | | | | | | <p>gloves, safety boots, earplugs, dust masks, safety glasses, etc.</p> <p>-Heavy vehicle, equipment and fuel storage site should be properly secured, and appropriate warning signage placed where visible.</p> <p>-Drilled holes that will no longer be in use or to be used later after being drilled should be properly marked for visibility and capped/closed off.</p> <p>-Ensure that after completion of exploration holes, drill cuttings are put back into the hole and the holes filled and levelled.</p> <p>-An emergency preparedness plan should be compiled, and all personnel appropriately trained.</p> <p>-Workers should not be allowed to drink alcohol prior to and during working hours as this may lead to mishandling of equipment which results into injuries and other health and safety risks.</p> <p>-Workers should not be allowed on site if under the influence of alcohol.</p> | |

| Impact | Triggering activity and potential Impact | Extent | Duration | Intensity | Probability | Significance of an Impact | | |
|--------|--|--------|----------|-----------|-------------|---------------------------|--|-----------------|
| | | | | | | Before Mitigation | Impact mitigation & enhancement measures (high-level) | Post Mitigation |
| | | | | | | | -The site to be equipped with "danger" or "cautionary" signs for any potential danger or risk area identified on site. -Temporary enclosed boundaries should be erected around high-risk area sites for the duration of project activities at that specific site area. -A security guard or guards should be part of the team so that they can look after the project equipment and vehicles that would be left on site in weekends or public holidays (when no work is done) to ensure that no unauthorized person enters the area. -All employees and contractors (personnel) to be trained on environmental awareness, the Proponent's internal Environmental Health and Safety Policy, and EMP. | |

8 CONCLUSIONS

8.1 Conclusions and Recommendations

The impact assessment done for the proposed exploration and associated activities indicates that the activities will have some negative impacts on the biophysical and socio-economic environment. However, based on the impacts' description and assessment, it showed that most of the impacts have a medium/high to high significance, if any mitigation measure is not implemented. However, upon re-assessing the impacts after the implementation of mitigation measure, the significance would be reduced from high to medium and eventually low or from medium to low. Therefore, the significance can be reduced by the effective implementation of the provided management and mitigation measures accompanied by monitoring.

It has also been noted that the project will bring about few temporary positive impacts on the social and economic aspects. To prevent or mitigate negative impacts, coordinated project management strategy according to an Environmental Management Plan (EMP) / Rehabilitation Plan (EMRP) has been developed for the proposed project (exploration). The EMP contains the mitigation measures to reduce the impact's significance during project implementation when avoidance is not possible, to ensure that the project activities are undertaken in an environmentally and socially sustainable manner.

To ensure that the EMP implementation is effective and yields the desired management results/indicators, monitoring of such implementation should be done by an Environmental Control Officer/ Safety Health Environment (SHE) Officer and Competent Authority during project implementation. Therefore, the Environmental Clearance Certificate (ECC) may be issued by the Environmental Commissioner for the proposed exploration activities, on condition that the Proponent and their associated contractors implement the (EMP) impact management and monitoring measures outlined in this Report and its EMRP/EMP.

9 REFERENCES

1. Dauteuil, O., Bessin, P. and Guilocheau, F. (2015). Topographic Growth around the Orange River Valley, Southern Africa: A Cenozoic Record of Crustal Deformation and Climatic Change. Rennes. HAL Open Science.
2. Irish, J. (2008). Biological Characterisation of the Orange River Basin, Namibia: Report produced for the Ephemeral River Basins in Southern Africa (ERB) Project, Desert Research Foundation of Namibia (DRFN): Windhoek
3. IQ Air. (2023). Air quality in Warmbad Area. Available from <https://www.iqair.com/namibia/karas/warmbad>. Accessed 10 January 2023.
4. Mendelson J., Jarvis A., Roberts C., and Robertson T. (2002). Atlas of Namibia: A Portrait of the Land and its People. Cape Town: David Philip Publishers.
5. Meteoblue (2022). Meteoblue Weather: Simulated historical climate & weather data for Warmbad Area. Available from https://www.meteoblue.com/en/weather/historyclimate/climatemodelled/warmbad_namibia_3352263. Accessed 10 January 2023.
6. TARO Archaeology & Heritage Consultants. (2023). Archaeological and Heritage Impact Assessment Report for the Exclusive Prospecting Licence (EPL) No. 8787 in the //Karas Region - Namibia. Windhoek. Unpublished.
7. Namibia Statistics Agency. (2011). 2011 Population and Housing Census: //Karas Profile 2011, Census Regional Profile. Windhoek: Namibia Statistics Agency.
8. World Weather Online. (2022). Warmbad- //Karas Region, Namibia Weather. Available from <https://www.worldweatheronline.com/warmbad-weather-averages/karas/na.aspx>. Accessed 10 January 2023.