

**Environmental Scoping Assessment (ESA) for Base & Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear fuel Minerals, and Precious Metals on Exclusive Prospecting Licenses (EPLs) No. 8271, 8272, and 8288 Located About 8.4 km South of Mariental in the Hardap Region**

**ENVIRONMENTAL ASSESSMENT REPORT: FINAL**

**ECC Application Reference: APP- 00887**

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## EXECUTIVE SUMMARY

Zoya Minerals CC (The Proponent), has applied to the Ministry of Mines and Energy (MME) for the Exclusive Prospecting Licenses (EPLs) No. 8271, 8272, and 8288. An application for EPLs 8271, 8272, and 8288 has been lodged on the 23<sup>rd</sup> of July 2020. However, the approval and granting of the EPL is subjected to an Environmental Clearance Certificate, before any proposed prospecting and exploration works can be carried out. The 295 765. 2948 hectares (ha) EPLs are located about 8.4 km South of Mariental in the Hardap region, Namibia. The Epls covers overlies about 72 farms. The EPLs aims to prospect and explore for commodities for such as **Base & Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear fuel Minerals, and Precious Metals.**

Prospecting and exploration related activities are among the listed activities that may not be undertaken without an Environmental Clearance Certificate (ECC) under the Environmental Management Act (EMA) (2007) and its 2012 Environmental Impact Assessment (EIA) Regulations. Subsequently, to ensure that the proposed activity is compliant with the national environmental legislation, the project Proponent, appointed an independent environmental consultant, Excel Dynamic Solutions (Pty) Ltd to undertake the required Environmental Assessment (EA) process and apply for the ECC on their behalf.

The application for the ECC was compiled and submitted to the competent authority (Ministry of Environment, Forestry and Tourism (MEFT)) as the environmental custodian for project registration purposes. Upon submission of an Environmental Scoping Assessment (ESA) Report and Draft Environmental Management Plan (EMP), an ECC for the proposed project will be considered by the Environmental Commissioner at the MEFT's Department of Environmental Affairs and Forestry (DEAF).

## Brief Project Description

### Planned Activities: Proposed Exploration Methods

The Proponent intends to adopt a systematic prospecting and exploration approach of the following:

- 1. Desktop Study: Geological mapping (Non-invasive Technique):** This mainly entails a desktop review of geological area maps and ground observations. This includes the review of geological maps of the area and on-site ground traverses and observations and an update where relevant of the information obtained during previous geological studies of the area.
- 2. Lithology geochemical surveys:** Rock samples shall be collected and taken for trace element analysis to be conducted by analytical chemistry laboratories to determine if enough Base & Rare Metals, Dimension Stones, Industrial Minerals, Precious Metals and Semi-Precious Stones are present. Also, trenches or pits may be dug depending on the commodity (in a controlled environment e.g., fencing off and labelling activity sites) adopting manual or excavator to further investigate the mineral potential. These consists of small pits ( $\pm 20\text{cm} \times 20\text{cm} \times 30\text{cm}$ ) will be dug where 1kg samples can be extracted and sieved to collect 50g of material. As necessary, and to ensure adequate risks mitigation, all excavations will either be opened and closed immediately after obtaining the needed samples or the sites fenced off until the trenches or pits are closed. At all times, the landowner and relevant stakeholder will be engaged to obtain authorisation where necessary.
- 3. Geophysical surveys:** This will entail data collection of the substrata (in most cases service of an aero-geophysical contractor will be sourced), by air or ground, through sensors such as radar, magnetic and electromagnetic to detect any mineralization in the area and are conducted to ascertain the mineralisation. Ground geophysical surveys shall be conducted, where necessary using vehicle-mounted sensors or handheld by staff members, while in the case of air surveys the sensors will be mounted to an aircraft, which then flies over the target area.

- 4. Detailed Exploration Drilling (Invasive Technique):** Should analyses by an analytical laboratory be positive, holes are drilled, and drill samples collected for further analysis. This will determine the depth of the potential mineralization. If necessary new access tracks to the drill sites will be created and drill pads will be cleared in which to set the rig. Two widely used drilling options may be adopted, these are the Reverse Circulation (RC) drilling and/or diamond-core drilling. RC drilling uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample, which is comprised of rock chips. It is relatively quicker and cheaper when compared to other techniques like Diamond Drilling. However, diamond drilling may also be considered for this exploration programme, during advanced stages of exploration if large amounts of sample material may be required for analysis and to perform processing trials. A typical drilling site will consist of a drill-rig, drill core and geological samples store and a drill equipment parking and maintenance yard (including a fuel and lubricants storage facility).

## Public Consultation

Regulation 21 of the EIA Regulations details steps to be taken during a public consultation process and these have been used in guiding this process. The public consultation process assisted the Environmental Consultant in identifying all potential impacts and aided in the process of identifying possible mitigation measures and alternatives to certain project activities. The communication with I&APs about the proposed prospecting and exploration activities was done through the following means and in this order to ensure that the public is notified and afforded an opportunity to comment on the proposed project:

- A Background Information Document (BID) containing brief information about the proposed project was compiled, and delivered upon request to all new registered Interested and Affected parties (I&APs).
- Project Environmental Assessment notices were published in The Namibian Newspaper (29 August 2022 and 05 September 2022) and New Era Newspaper (29 August 2022 and 05 September 2022), inviting members of the public to register as I&APs and submit their comments/concerns.
- A consultation meeting was scheduled and held with the I&APs on 07 October, 2022 at Mariental Secondary School Hall at 10h00. The meeting proceedings are captured and meeting minutes recorded. The issues and concerns raised, together with the site observations are used to form a basis for the ESA Report and EMP.

## Potential Impacts identified

The following potential impacts are anticipated:

- **Positive impacts:** Socio-economic development through employment creation (primary, secondary, and tertiary employment) and skills transfer; Opens up other investment opportunities and infrastructure-related development benefits; Produces a trained workforce and small businesses that can serve communities; Boosts local economic growth and regional economic development and; Increased support for local businesses through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc.

- **Negative impacts:** : Potential disturbance of existing pastoral systems; Physical land/soil disturbance; Impact on local biodiversity (fauna and flora); Habitat disturbance and potential illegal wildlife in the area; Potential impact on water resources and soils particularly due to pollution; Air quality issue: potential dust generated from the project; Potential occupational health and safety risks, Vehicular traffic safety and impact on services infrastructures such as local roads, Vibrations, and noise associated with drilling activities may be a nuisance to locals; Environmental pollution (solid waste and wastewater), Archaeological and heritage impact and Potential social nuisance and conflicts (theft, damage to properties, etc.).

The potential negative impacts were assessed, and mitigation measures were provided accordingly.

## CONCLUSIONS AND RECOMMENDATION

### Conclusion

The potential impacts that are anticipated from the proposed project activities were identified, described, and assessed. For the significant adverse (negative) impacts with medium rating, appropriate management and mitigation measures were recommended for implementation by the Proponent, their contractors and project related employees.

The public was consulted as required by the EMA and its 2012 EIA Regulations (Section 21 to 24). This was done via the two newspapers (New Era and The Namibian) used for this environmental assessment. A face-to-face consultation meeting was scheduled with the directly affected farmers (landowners) at Mariental Secondary School, whereby affected farmers were expected to raised comments and concerns on the proposed project activities.

The issues and concerns raised by the registered I&APs formed the basis for this report and the Draft EMP. The issues were addressed and incorporated into this report whereby mitigation measures have been provided thereof to avoid and/or minimize their significance on the environmental and social components. Most of the potential impacts were found to be of medium rating significance. The effective implementation of the recommended management and mitigation measures, will particularly see a reduction in the significance of adverse impacts that cannot be avoided completely (from high/medium rating to low). To maintain the desirable rating, the implementation of management and mitigation measures should be monitored by the

Proponent directly, or their Environmental Control Officer (ECO) is highly recommended. The monitoring of this implementation will not only be done to maintain the impacts' rating or maintain low rating but to also ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed right away too.

It is crucial for the Proponent and their contractors as well as to effectively implementation of the recommended management and mitigation measures to protect both the biophysical and social environment throughout the project duration. All these would be done with the aim of promoting environmental sustainability while ensuring a smooth and harmonious existence and purpose of the project activities in the community and environment at large.

### **Recommendations**

The Environmental Consultant is confident that the potential negative impacts associated with the proposed project activities can be managed and mitigated by the effective implementation of the recommended management and mitigation measures and with more effort and commitment put on monitoring the implementation of these measures.

It is, therefore, recommended that the proposed prospecting and exploration activities be granted an Environmental Clearance Certificate, provided that:

- All the management and mitigation measures provided herein are effectively and progressively implemented.
- All required permits, licenses and approvals for the proposed activities should be obtained as required. These include permits and licenses for land use access agreements to explore and ensuring compliance with these specific legal requirements.
- The Proponent and all their project workers or contractors comply with the legal requirements governing their project and its associated activities and ensure that project permits and or approvals required undertaking specific site activities are obtained and renewed as stipulated by the issuing authorities.
- Site areas where exploration activities have ceased are rehabilitated, as far as practicable, to their pre-exploration state.
- Environmental Compliance monitoring reports should be compiled and submitted to the MEFT/DEAF's.

**Disclaimer**

EDS warrants that the findings and conclusion contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work and Environmental Management Act (EMA) of 2007. These methodologies are described as representing good customary practice for conducting an Environmental Impact Assessment of a property for the purpose of identifying recognized environmental conditions. There is a possibility that even with the proper application of these methodologies there may exist on the subject property conditions that could not be identified within the scope of the assessment, or which were not reasonably identifiable from the available information. The Consultant believes that the information obtained from the record review and during the public consultation processes concerning the proposed exploration work is reliable. However, the Consultant cannot and does not warrant or guarantee that the information provided by the other sources is accurate or complete. The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. No other warranties are implied or expressed.

Some of the information provided in this report is based upon personal interviews, and research of available documents, records, and maps held by the appropriate government and private agencies. This report is subject to the limitations of historical documentation, availability, and accuracy of pertinent records and the personal recollections of those persons contacted.



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## LIST OF APPENDICES

**Appendix A:** Copy of the Environmental Clearance Certificate (ECC) Application Form 1

**Appendix B:** Draft Environmental Management Plan (EMP)

**Appendix C:** Curricula Vitae (CV) for the Environmental Assessment Practitioner (EAP)

**Appendix D:** Proof of Public Consultation

**Appendix E:** Intention to Grand

**Appendix F:** List of Affected Farms

## LIST OF ABBREVIATIONS

| Abbreviation | Meaning                               |
|--------------|---------------------------------------|
| AMSL         | Above Mean Sea Level                  |
| BID          | Background Information Document       |
| CV           | Curriculum Vitae                      |
| DEA          | Department of Environmental Affairs   |
| EA           | Environmental Assessment              |
| EAP          | Environmental Assessment Practitioner |
| ECC          | Environmental Clearance Certificate   |
| EDS          | Excel Dynamic Solutions               |
| ESA          | Environmental Scoping Assessment      |
| EMA          | Environmental Management Act          |
| EMP          | Environmental Management Plan         |
| EPL          | Exclusive Prospecting Licence         |
| GG           | Government Gazette                    |
| GN           | Government Notice                     |
| I&APs        | Interested and Affected Parties       |

|      |   |
|------|---|
| MEFT | Ministry of Environment, Forestry and Tourism |
| MME  | Ministry of Mines and Energy                  |
| PPE  | Personal Protective Equipment                 |
| Reg  | Regulation                                    |
| S    | Section                                       |
| TOR  | Terms of Reference                            |

## DEFINITION OF TERMS

|  |   |
|--|---|
| <b>Alternative</b>                           | A possible course of action, in place of another that would meet the same purpose and need of the proposal.   |
| <b>Baseline</b>                              | Work done to collect and interpret information on the condition/trends of the existing environment.   |
| <b>Biophysical</b>                           | That part of the environment that does not originate with human activities (e.g. biological, physical and chemical processes).  |
| <b>Cumulative Impacts/Effects Assessment</b> | In relation to an activity, means the impact of an activity that in it may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. |
| <b>Decision-maker</b>                        | The person(s) entrusted with the responsibility for allocating resources or granting approval to a proposal.  |
| <b>Ecological Processes</b>                  | Processes which play an essential part in maintaining ecosystem integrity. Four fundamental ecological processes are the cycling of water, the cycling of nutrients, the flow of energy and biological diversity (as an expression of evolution).     |
| <b>Environment</b>                           | As defined in Environmental Management Act - the complex of natural and anthropogenic factors and elements that are mutually interrelated and affect the ecological equilibrium and the   |

|   |   |
|---|---|
|   | quality of life, including – (a) the natural environment that is land, water and air; all organic and inorganic matter and living organisms and (b) the human environment that is the landscape and natural, cultural, historical, aesthetic, economic and social heritage and values.  |
| <b>Environmental Management Plan</b>            | As defined in the EIA Regulations (Section 8(j)), a plan that describes how activities that may have significant environments effects are to be mitigated, controlled and monitored.  |
| <b>Exclusive Prospecting Licence</b>            | Is a license that confers exclusive mineral prospecting rights over land of up to 1000 km <sup>2</sup> in size for an initial period of three years, renewable twice for a maximum of two years at a time   |
| <b>Interested and Affected Party (I&amp;AP)</b> | In relation to the assessment of a listed activity includes - (a) any person, group of persons or organization interested in or affected by activity; and (b) any organ of state that may have jurisdiction over any aspect of the activity. Mitigate - practical measures to reduce adverse impacts. Proponent – as defined in the Environmental Management Act, a person who proposes to undertake a listed activity. Significant impact - means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment. |
| <b>Fauna</b>                                    | All of the animals that are found in a given area.  |
| <b>Flora</b>                                    | All of the plants found in a given area.  |

|  |   |
|--|---|
| <b>Mitigation</b>                      | The purposeful implementation of decisions or activities that are designed to reduce the undesirable impacts of a proposed action on the affected environment.  |
| <b>Monitoring</b>                      | Activity involving repeated observation, according to a pre-determined schedule, of one or more elements of the environment to detect their characteristics (status and trends).  |
| <b>Nomadic Pastoralism</b>             | Nomadic pastoralists live in societies in which the husbandry of grazing animals is viewed as an ideal way of making a living and the regular movement of all or part of the society is considered a normal and natural part of life. Pastoral nomadism is commonly found where climatic conditions produce seasonal pastures but cannot support sustained agriculture. |
| <b>Proponent</b>                       | Organization (private or public sector) or individual intending to implement a development proposal.  |
| <b>Public Consultation/Involvement</b> | A range of techniques that can be used to inform, consult or interact with stakeholders affected by the proposed activities.  |
| <b>Protected Area</b>                  | Refers to a protected area that is proclaimed in the Government Gazette<br><br>according to the Nature Conservation Ordinance number 4 of 1975, as amended  |

|                                 |   |
|---------------------------------|---|
| <b>Scoping</b>                  | An early and open activity to identify the impacts that are most likely to be significant and require specialized investigation during the EIA work. Can, also be used to identify alternative project designs/sites to be assessed, obtain local knowledge of site and surroundings and prepare a plan for public involvement. The results of scoping are frequently used to prepare a Terms of Reference for the specialized input into full EIA. |
|                                 |   |
| <b>Terms of Reference (ToR)</b> | Written requirements governing full EIA input and implementation, consultations to be held, data to be produced and form/contents of the EIA report. Often produced as an output from scoping.  |



## 1. INTRODUCTION

### 1.1 Project Background

Zoya Minerals CC (The Proponent), has applied to the Ministry of Mines and Energy (MME) for 3 Exclusive Prospecting Licenses (EPLs) No. 8271, 8272, and 8288. An application for EPLs has been lodged on the 23<sup>rd</sup> of July 2022. However, the approval and granting of the EPLs is subjected to an Environmental Clearance Certificate (ECC), before any proposed prospecting and exploration works can be undertaken.

The EPLs 8271, 8272, and 8288 are located about 8.4 km south of Mariental in the Hardap Region as shown Figure 1-1.

The EPL covers (overlies) about 72 Farms.

The target commodities for prospecting and exploration are **Base & Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear fuel Minerals, and Precious Metals.**

Section 27 (1) of the Environmental Management Act (EMA) (No. 7 of 2007) and its 2012 Environmental Impact Assessment (EIA) Regulations, provides a list of activities that may not be carried out without an Environmental Impact Assessment (EIA) undertaken and an Environmental Clearance Certificate (ECC) issued. Exploration activities are listed among the activities that may not occur without an ECC. Therefore, individuals or organizations may not carry out exploration activities among those listed, without an EIA undertaken and an ECC awarded.

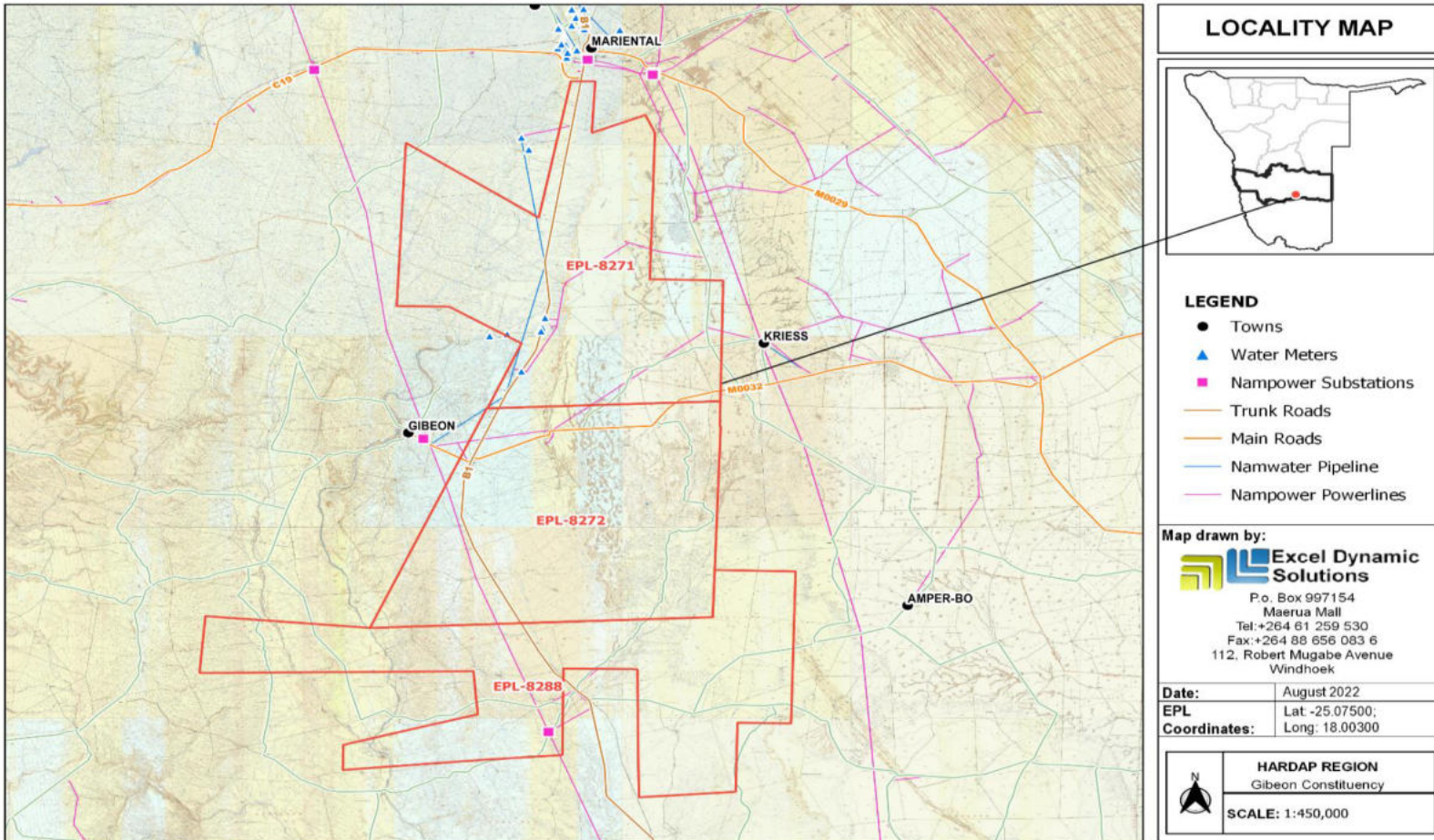


Figure 1-1: Locality map for EPLs No. 8271, 8272, and 8288.

## 1.2 Terms of Reference, Scope of Works and Appointed EA Practitioner

Excel Dynamic Solutions (Pty) (EDS) has been appointed by the Proponent to undertake an environmental assessment (EA), and thereafter, apply for an ECC for exploration works on the EPL. There were no formal Terms of Reference (ToR) provided to EDS by the Proponent. The consultant, instead, relied on the requirements of the Environmental Management Act (No. 7 of 2007) (EMA) and its Environmental Impact Assessment (EIA) Regulations (GN. No. 30 of 2012) to conduct the study.

The application for the ECC is compiled and submitted to the Ministry of Environment, Forestry and Tourism (MEFT) (Appendix A), as the environmental custodian for project registration purposes. Upon submission of an Environmental Scoping Assessment (ESA) Report and Draft Environmental Management Plan (EMP) (Appendix B), an ECC for the proposed project may be considered by the Environmental Commissioner at the MEFT's Department of Environmental Affairs and Forestry (DEAF).

The EIA project is headed by Mr. Nerson Tjelos, a qualified and experienced Geoscientist and experienced EAP. Consultation and reporting were done by Mr. Mandume Leonard and reviewed by Ms. Fredrika Shagama. The CV's of Mr. Leonard and Mr. Tjelos are presented in Appendix C.

## 1.3 Motivation for the Proposed Project

The mining industry is one of the largest contributors to the Namibian economy. It contributes to the improvement of livelihoods. In Namibia, exploration for minerals is carried out mainly by the private sector. Exploration activities have a great potential to enhance and contribute to the development of other sectors and its activities do provide temporary employment, and taxes that fund social infrastructural development. The minerals sector yields foreign exchange and accounts for a significant portion of gross domestic product (GDP). Additionally, the industry produces a trained workforce and small businesses that can serve communities and may initiate related businesses. Exploration activity fosters several associated activities such as manufacturing of exploration and mining equipment, and provision of engineering and environmental services. The mining sector forms a vital aspect of some of Namibia's development plans, namely: Vision 2030, National Development Plan 5 (NDP5), and Harambee Prosperity Plans (HPPs) I and II. Thus, mining is essential to the development goals of Namibia in

contributing to meeting the ever-increasing global demand for minerals, and for national prosperity. Successful exploration on EPL No. 8271, 8272, and 8288 would lead to the mining of targeted commodities, which could contribute towards achieving the goals of the national development plans.

## **2. PROJECT DESCRIPTION: PROPOSED PROSPECTING, EXPLORATION ACTIVITIES**

Prospecting and exploration of minerals are the first components of any potential mining project. These are done to acquire the necessary data required for further decision making and investment options. These activities are anticipated to last for about three years. The exploration process includes three phases, namely: prospecting, exploration, and the decommissioning of works.

### **2.1 Prospecting Phase**

During the prospecting and exploration phase, reviewing existing reports and composite stratigraphic, lithological-geochemical maps of the targeted areas to identify prospective lithostratigraphic packages will be vital. In addition to the literature review, fieldwork (lithological (soil/rock) mapping and sampling) will be conducted to verify desktop work. Up to this point, no physical disturbance is required. Prospecting during the advanced exploration phase will require the Proponent to assess the EPLs area through detailed geological mapping, geophysical and geochemical surveys, supported where necessary by geophysical surveys, to define targets for test pitting, trenching, and drilling.

#### **2.1.1 Desktop Study: Geological mapping**

This mainly entails a desktop review of geological area maps and ground observations. This includes the review of geological maps of the area, on-site ground traverses and observations and an update, where relevant, of the information obtained during previous geological studies of the area.

#### **2.1.2 Geophysical surveys**

Geophysical surveys entail data collection of the substrate by air or ground, through sensors such as radar, magnetic and/or electromagnetic sensors, to detect and ascertain any mineralization in the area. Ground geophysical surveys shall be conducted, where necessary, using vehicle-mounted sensors or handheld by staff members, while in the case of air surveys, the sensors are mounted to an aircraft, which navigates over the target area.

### **2.1.3 Lithology geochemical surveys**

Rock and soil samples shall be collected and taken for trace element analysis to be conducted by analytical chemistry laboratories, to determine if enough target commodities are present. Additionally, trenches or pits may be dug depending on the commodity (in a controlled environment e.g., fencing off and labelling activity sites) adopting a manual or excavator to further investigate the mineral potential.

Soil sampling involves small pits being dug where 1kg samples can be extracted and sieved to collect about 50g of material. As necessary, and to ensure adequate risk mitigation, all major excavations will be opened and closed immediately after obtaining the needed samples, or the sites will be secured until the trenches or pits are closed. The landowner and other relevant stakeholders will be engaged to obtain authorization where necessary.

## **2.2 Exploration (Drilling) Phase**

The selection of the potential mineralization model and exploration targets will be based on the local geology, trenching, drilling, and assay results of the samples collected. The planned exploration activities are aimed at delineating the mineral deposits and determine whether the deposits are economically feasible mining resources.

No explosives will be used during the exploration phase.

### **2.2.1 Detailed Exploration Drilling (Invasive Technique)**

Should analyses by an analytical laboratory yield positive results, holes are drilled, and drill samples collected for further analysis. This will determine the depth of the potential mineralization. If necessary new access tracks to the drill sites will be created and drill pads will be cleared in which to set the rig. Two widely used drilling options may be adopted, these are the Reverse Circulation (RC) drilling and/or diamond-core drilling. RC drilling uses a pneumatic hammer, which drives a rotating tungsten-steel bit. The technique produces an uncontaminated large volume sample, which is comprised of rock chips. It is relatively quicker and cheaper when compared to other techniques like Diamond Drilling. However, diamond drilling may also be considered for this exploration programme, during advanced stages of exploration if large amounts of sample material may be required for analysis and to perform processing trials.

A typical drilling site will consist of a drill-rig and support vehicles as well as a drill core and geological samples store. A drill equipment parking and maintenance yard may be set up (including a fuel and lubricants storage facility).

## 2.3 Project Resources

Other aspects of the exploration operations include:

### 2.3.1 Accessibility to Site

The EPLs are located near the Town of Mariental. It is accessible via the B1 road from Mariental and the M0032 road from Gibeon to B1 Road. Project-related vehicles will use existing roads to access the EPLs. The Proponent may need to do some upgrades on the site access roads to ensure that it is fit to accommodate project related vehicles, such as heavy trucks.

### 2.3.2 Material and Equipment

The input required for the exploration program in terms of vehicles and equipment includes, 4X4 vehicles, a truck, water tanks, drill rigs and drilling machines, and a power generator. Equipment and vehicles will be stored at a designated area near the accommodation site or a storage site established within the EPLs.

### 2.3.3 Services and Infrastructure

The services to be used for the exploration activities will include the following

- **Water:** Water for the exploration operations on the EPLs will be obtained from the nearest existing boreholes, or the proponent will drill boreholes on the farms, upon obtaining necessary permits and signed agreements with the farmers (landowners). Estimated monthly water consumptions are at 7000 liters, but will not exceed 80 000 liters, which includes water for drinking, sanitation, cooking, dust control (if necessary), drilling, as well as washing of equipment.
- **Power supply:** Power required during the operation phase will be provided from diesel-generators. About 2000 litres of diesel will be used per day, a bunded diesel bowser, which will be on site, will be filled 2 – 3 times a week.

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

- **Waste Management:** The site will be equipped with secured waste bins for each type of waste (i.e., domestic, hazardous, and recyclable). Depending on the amount generated, waste will be sorted and collected weekly or monthly and taken to the nearest certified landfill site. An agreement will need to be reached with different waste management facility operators/owners and authorization or permits will be obtained prior to utilizing these facilities, in the case of production of any hazardous waste.
- **Sanitation and human waste:** Portable ablution facilities will be used and the sewage will be disposed of as according to the approved disposal or treatment methods of the waste products.
- **Hazardous waste:** Drip trays and spill control kits will be available on site to ensure that oil/fuel spills and leaks from vehicles and equipment are captured on time and contained correctly before polluting the site.
- **Health and safety:** Adequate and appropriate Personal Protective Equipment (PPE) will be provided to every project personnel while working at the site. A minimum of two first aid kits will be readily available on-site to attend to potential minor injuries.
- **Storage Site:** Temporary storage areas for exploration material, equipment, and machinery will be required at the campsite and/or exploration sites. Security will be supplied on a 24-hour basis at the delegated sites for storage. A temporary support fence surrounding the storage site will be constructed to ensure people and domestic animals are not put at risk.
- **Fire management:** A minimum of basic firefighting equipment, i.e., two fire extinguisher will be readily available in vehicles, at the working sites and camps.
- **On-site Workers' Safety:** Adequate and appropriate Personal Protective Equipment (PPE) will be provided to every project personnel while on and working at site. A first aid kit will be readily available on site to attend to potential minor injuries.
- **Accommodation:** For the EPLs parts that are within or close to a settlement /village and or town, the exploration crew will be accommodated there, for areas such as Mariental and Gibeon. And for areas far from settlements or villages and towns, a campsite will be set up for the exploration crew near the exploration sites. If the accommodation camp is to be set up on a farm, necessary arrangements will be made with the farm owner(s) or land custodians. Exploration activities will take place during daytime only and staff will commute to exploration site (s) from their place of accommodation.



## **2.4 Decommissioning and Rehabilitation Phase**

Once the exploration activities on the EPLs come to an end, the Proponent will need to put site rehabilitation measures in place. Decommissioning and rehabilitation are primarily reinforced through a decommissioning and rehabilitation plan, which consists of safety, health, environmental, and contingency aspects. An unfavorable economic situation or unconvincing exploration results might force the Proponent to cease the exploration program before predicted closure.

### 3 PROJECT ALTERNATIVES

Alternatives are defined as the “different means of meeting the general purpose and requirements of the activity” (EMA, 2007). This section highlights the different ways in which the project can be undertaken, and identifies alternatives that may be the most practical, but least damaging to the environment.

Once the alternatives have been established, these are examined by asking the following three questions:

- What alternatives are technically and economically feasible?
- What are the environmental effects associated with the feasible alternatives?
- What is the rationale for selecting the preferred alternative?

The alternatives considered for the proposed development are discussed in the following subsections.

#### 3.1 Types of Alternatives Considered

##### 3.1.1 The "No-go" Alternative

The “no action” alternative implies that the status quo remains, and nothing happens. Should the proposal of exploration activities on the EPLs, 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.

This no-go option is considered and a comparative assessment of the environmental and socio-economic impacts of the “no action” alternative, is undertaken to establish what benefits might be lost if the project is not implemented. The key losses that may never be realized if the proposed project does not go ahead include:

- Loss of foreign direct investment.
- About ten (10) temporary job opportunities for community members will not be realized.
- No realization of local business supports through the procurement of consumable items such as Personal Protective Equipment (PPE), machinery spare parts, lubricants, etc.
- Loss of potential income to the local and national government through land lease fees, license lease fees, and various tax structures.

- Improved geological understanding of the site area regarding the targeted commodities.
- Socio-economic benefits such as skills acquisition to local community members would be not realized.

Considering the above losses, the “no-action/go” alternative was not considered a viable option for this project.

### **3.1.2 Exploration Location**

The prospecting/exploration location is dependent on the geological setting (regional and local), the economic geology, and the exploration and mining history of the EPLs area. Therefore, finding an alternative location for the planned exploration activities is not possible. This means that the mineralization of the target commodities is area-specific, which means exploration targets are primarily determined by the geology (host rocks) and the tectonic environment of the site (an ore-forming mechanism). The tenement has sufficient surface area for future related facilities should an economic mineral deposit be defined.

Furthermore, the national mineral resources’ potential locations are also mapped and categorized by the Ministry of Mines and Energy in exclusive prospecting licenses, mining licenses and claims, mineral deposit retention licenses, reconnaissance licenses, and exclusive reconnaissance licenses. Available information on EPLs 8271, 8272, and 8288 (Error! Reference source not found.) and other licenses are available on the Namibia Mining Cadastral Map here <https://portals.landfolio.com/namibia/>

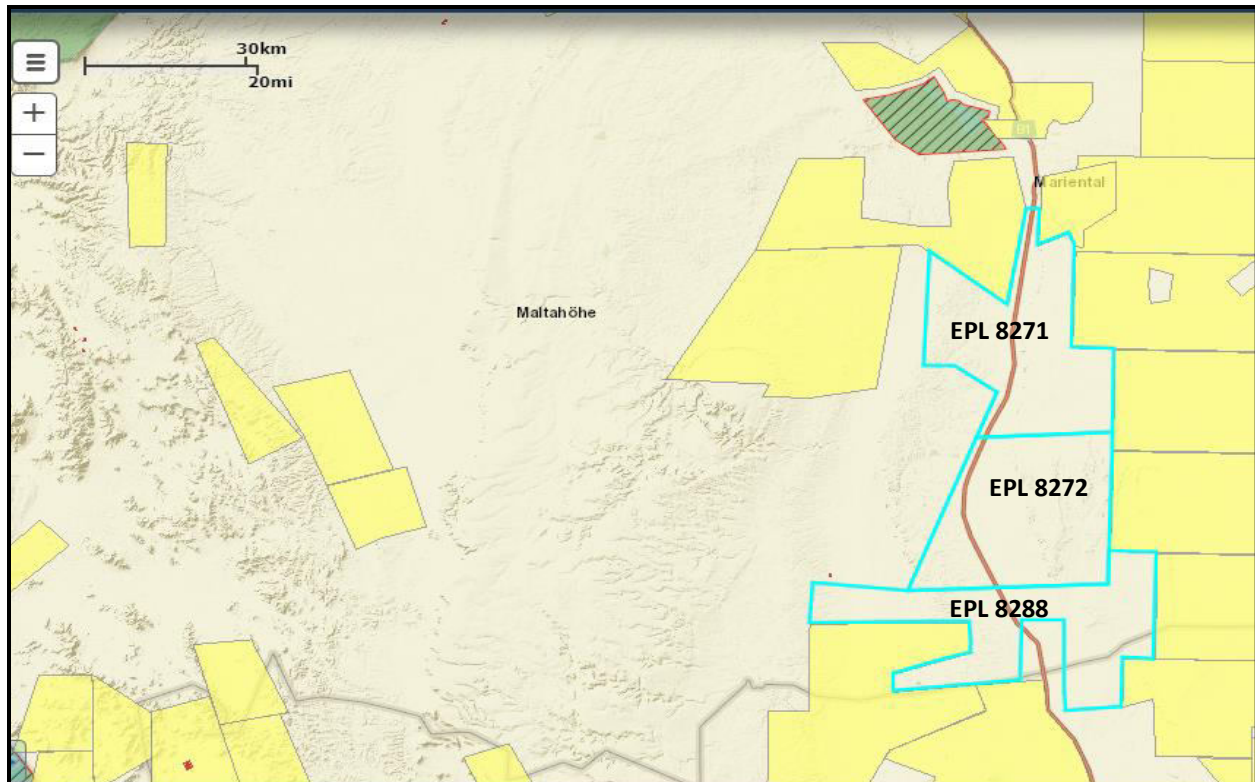


Figure 2: The location of EPLs 8271, 8272, and 8288 on the National Mining Cadastre

### 3.1.3 Exploration Methods

Both invasive and non-invasive exploration activities as indicated under the project description chapter are expected to take place. If an economically viable discovery is made, the project will proceed to the mining phase upon approval of a mining EIA and issuance of a mining license. If any other alternative viable exploration methods are found to achieve the purpose more effectively and/or efficiently without aggravating any environmental measures put in place.

## 4 POLICIES, AND GUIDELINES

Prospecting and exploration activities have legal implications associated with certain applicable legal standards. A summary of applicable and relevant international policies and Namibian legislation, policies, and guidelines for the proposed development is given in this section (**Table 1**). This summary serves to inform the project Proponent, Interested and Affected Parties, and the decision-makers at the DEAF, of the requirements and expectations, as laid out in terms of these instruments, to be fulfilled to establish the proposed prospecting and exploration activities.

### 4.1 The Environmental Management Act (No. 7 of 2007)

This EIA was carried out according to the Environmental Management Act (EMA) and its Environmental Impact Assessment (EIA) Regulations (GG No. 4878 GN No. 30).

The EMA has stipulated requirements to complete the required documentation to obtain an ECC for permission to undertake certain listed activities. These activities are listed under the following Regulations:

- 3.1 The construction of facilities for any process or activities which requires a license, right of other forms of authorization, and the renewal of a license, right, or other forms of authorization, in terms of the Minerals (Prospecting and Mining Act, 1992).
- 3.2 other forms of mining or extraction of any natural resources whether regulated by law or not.
- 3.3 Resource extraction, manipulation, conservation, and related activities.

The Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 4878) detail requirements for public consultation within a given environmental assessment process (GN 30 S21). The EIA regulations also outline the required details of a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).

Other legal obligations that are relevant to the proposed activities of EPLs No. 8271, 8272, and 8288 and related activities are presented in 4-1.

**Table 4-4-1: Applicable local, national and international standards, policies and guidelines governing the proposed development**

| Legislation/Policy/<br>Guideline                                    | Relevant Provisions   | Implications for this project   |
|---|---|---|
| <p>The Constitution of the Republic of Namibia, 1990 as amended</p> | <p>The Constitution of the Republic of Namibia (1990 as amended) addresses matters relating to environmental protection and sustainable development. Article 91(c) defines the functions of the Ombudsman to include:</p> <p>“...the duty to investigate complaints concerning the over-utilization of living natural resources, the irrational exploitation of non-renewable resources, the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia...”</p> <p>Article 95(l) commits the state to actively promoting and maintaining the welfare of the people by adopting policies aimed at the:</p> <p>“...Natural resources situated in the soil and on the subsoil, the internal waters, in the sea, in the continental shelf, and in the exclusive economic zone are property of the State.”</p> | <p>By implementing the environmental management plan, the establishment will be in conformant to the constitution in terms of environmental management and sustainability.</p> <p>Ecological sustainability will be main priority for the proposed development.</p> |

| Legislation/Policy/<br>Guideline                       | Relevant Provisions  | Implications for this project  |
|--|--|--|
| Nature Conservation Amendment Act, No. 3 of 2017       | National Parks are established and gazetted in accordance with the Nature Conservation Ordinance, 1975 (4 of 1975), as amended. The Ordinance provides a legal framework with regards to the permission of entering a state-protected area, as well as requirements for individuals damaging objects (geological, ethnological, archaeological, and historical) within a protected area. Though the Ordinance does not specifically refer to mining as an activity within a protected area (PA) or recreational area (RA), it does restrict access to PA's and prohibits certain acts therein as well as the purposes for which permission to enter game parks and nature reserves may be granted. | The Proponent will be required to enhance the conservation of biodiversity and the maintenance of the ecological integrity of protected areas and other State lands  |
| The Parks and Wildlife Management Bill of 2008         | Aims to provide a regulatory framework for the protection, conservation, and rehabilitation of species and ecosystems, the sustainable use and sustainable management of indigenous biological resources, and the management of protected areas, in order to conserve biodiversity and in order to contribute to national development.   |  |
| Minerals (Prospecting and Mining) Act (No. 33 of 1992) | Section 52 requires mineral license holders to enter into a written agreement with affected landowners before exercising rights conferred upon the license holder.   | The Proponent should enter into a written agreement with landowners before carrying out exploration on their land.<br><br>The Proponent should carry out an assessment of the impact on the receiving environment. |

| Legislation/Policy/<br>Guideline | Relevant Provisions  | Implications for this project  |
|----------------------------------|--|--|
|                                  | <p>Section 52(1) mineral license holder may not exercise his/her rights in any town or village, on or in a proclaimed road, land utilized for cultivation, within 100m of any water resource (borehole, dam, spring, drinking trough, etc.) and boreholes, or no operations in municipal areas, etc.), which should individually be checked to ensure compliance.</p> <p>Section 54 requires written notice to be submitted to the Mining Commissioner in the event that the holder of a mineral license (which includes the EPLs) intends to abandon the mineral license area.</p> <p>Section 68 stipulates that an application for an EPLs shall contain the particulars of the condition of, and any existing damage to, the environment in the area to which the application relates and an estimate of the effect which the proposed prospecting operations may have on the environment and the proposed steps to be taken in order to prevent or minimize any such effect.</p> <p>Section 91 requires that rehabilitation measures should be included in an application for a mineral license.</p> | <p>The Proponent should include as part of their application for the EPLs, measures by which they will rehabilitate the areas where they intend to carry out mineral exploration activities.</p> <p>The Proponent may not carry out exploration activities within the areas limited by Section 52 (1) of this Act.</p> |



| Legislation/Policy/<br>Guideline                                      | Relevant Provisions   | Implications for this project  |
|---|---|--|
| Mine Health & Safety Regulations, 10th Draft                          | Makes provision for the health and safety of persons employed or otherwise present in mineral licenses area. These deal with among other matters; clothing and devices; design, use, operation, supervision and control of machinery; fencing and guards; and safety measures during repairs and maintenance.   | The Proponent should comply with all these regulations with respect to their employees.  |
| Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001) | Regulation 3(2)(b) states that “No person shall possess [sic] or store any fuel except under authority of a license 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”   | The Proponent should obtain the necessary authorization from the MME for the storage of fuel on-site.  |
| The Regional Councils Act (No. 22 of 1992)                            | . This Act sets out the conditions under which Regional Councils must be elected and administer each delineated region. From a land use and project planning point of view, their duties include, as described in section 28 “to undertake the planning of the development of the region for which it has been established with a view to physical, social and economic characteristics, urbanisation patterns, natural resources, economic development potential, infrastructure, land utilisation pattern and sensitivity of the natural environment. | The relevant Regional Councils are considered to be I&APs and must be consulted during the Environmental Assessment (EA) process. The project site falls under the Hardap Regional Councils therefore, they should be consulted. |

| Legislation/Policy/<br>Guideline               | Relevant Provisions   | Implications for this project  |
|--|---|--|
| Local Authorities Act No. 23 of 1992           | To provide for the determination, for purposes of traditional government, of traditional authority councils; the establishment of such traditional authority councils; to define the powers, duties and, functions of traditional authority councils; and to provide for incidental matters.  | The Mariental Municipality, is the responsible local Authority of the area therefore they should be consulted. |
| Water Act 54 of 1956                           | <p>The Water Resources Management Act 11 of 2013 is presently without regulations; therefore, the Water Act No 54 of 1956 is still in force:</p> <p>Prohibits the pollution of water and implements the principle that a person disposing of effluent or waste has a duty of care to prevent pollution (S3 (k)).</p> <p>Provides for control and protection of groundwater (S66 (1), (d (ii))).</p> <p>Liability of clean-up costs after closure/abandonment of an activity (S3 (l)). (l)).</p> | The protection (both quality and quantity/abstraction) of water resources should be a priority.                |
| Water Resources Management Act (No 11 of 2013) | The Act provides for the management, protection, development, use and conservation of water resources; and provides for the regulation and monitoring of water services and to provide for incidental matters. The objects of this Act are to:  |  |

| Legislation/Policy/<br>Guideline                           | Relevant Provisions   | Implications for this project   |
|--|---|---|
|  | <p>Ensure that the water resources of Namibia are managed, developed, used, conserved and protected in a manner consistent with, or conducive to, the fundamental principles set out in Section 66 - protection of aquifers, Subsection 1 (d) (iii) provide for preventing the contamination of the aquifer and water pollution control (Section 68).</p> |   |
| <p>National Heritage Act No. 27 of 2004</p>                | <p>To provide for the protection and conservation of places and objects of heritage significance and the registration of such places and objects; to establish a National Heritage Council; to establish a National Heritage Register; and to provide for incidental matters.</p>   | <p>The Proponent should ensure compliance with these Acts requirements. The necessary management measures and related permitting requirements must be taken. This done by the consulting with the National Heritage Council of Namibia.</p> |
| <p>The National Monuments Act (No. 28 of 1969)</p>         | <p>The Act enables the proclamation of national monuments and protects archaeological sites.</p>  |   |
| <p>Soil Conservation Act (No 76 of 1969)</p>               | <p>The Act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil, vegetation and water supply sources and resources, through directives declared by the Minister.</p>   | <p>Duty of care must be applied to soil conservation and management measures must be included in the EMP.</p>   |
| <p>Public Health Act (No. 36 of 1919)</p>                  | <p>Section 119 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 and all its employees should ensure compliance with the provisions of these legal instruments.</p>   |
| <p>Health and Safety Regulations GN 156/1997 (GG 1617)</p> | <p>Details various requirements regarding health and safety of labors.</p>  |   |

| Legislation/Policy/<br>Guideline               | Relevant Provisions  | Implications for this project  |
|--|--|--|
| Road Traffic and Transport Act, No. 22 of 1999 | The Act provides for the establishment of the Transportation Commission of Namibia; for the control of traffic on public roads, the licensing of drivers, the registration and licensing of vehicles, the control and regulation of road transport across Namibia's borders; and for matters incidental thereto. Should the Proponent wish to undertake activities involving road transportation or access onto existing roads, the relevant permits will be required. | Mitigation measures should be provided for, if the roads and traffic impact cannot be avoided, the relevant permits must be applied for. |
| Labor Act (No. 6 of 1992)                      | The Ministry of Labor (MOL) is aimed at ensuring harmonious labor relations through promoting social justice, occupational health and safety and enhanced labor market services for the benefit of all Namibians. This ministry ensures effective implementation of the Labor Act no. 6 of 1992.   | The Proponent should ensure that the prospecting and exploration activities do not compromise the safety and welfare of workers.         |

## 4.2 International Policies, Principles, Standards, Treaties and Conventions

The international policies, principles, standards, treaties, and conventions applicable to the project are as listed in **Table 4-4-2** below.

**Table 4-4-2: International Policies, Principles, Standards, Treaties and Convention applicable to the project**

| Statute            | Provisions   | Project Implications  |
|--------------------|--|---|
| Equator Principles | <p>A financial industry benchmark for determining, assessing, and managing environmental and social risk in projects (August 2013). The Equator Principles have been developed in conjunction with the International Finance Corporation (IFC), to establish an International Standard with which companies must comply with to apply for approved funding by Equator Principles Financial Institutions (EPFIs). The Principles apply to all new project financings globally across all sectors.</p> <p><b>Principle 1:</b> Review and Categorization</p> <p><b>Principle 2:</b> Environmental and Social Assessment</p> <p><b>Principle 3:</b> Applicable Environmental and Social Standards</p> <p><b>Principle 4:</b> Environmental and Social Management System and Equator Principles Action Plan</p> <p><b>Principle 5:</b> Stakeholder Engagement</p> <p><b>Principle 6:</b> Grievance Mechanism</p> <p><b>Principle 7:</b> Independent Review</p> <p><b>Principle 8:</b> Covenants</p> <p><b>Principle 9:</b> Independent Monitoring and Reporting</p> | <p>These principles are an attempt to: ‘...encourage the development of socially responsible projects, which subscribe to appropriately responsible environmental management practices with a minimum negative impact on project-affected ecosystems and community-based upliftment and empowering interactions.’</p> |

| Statute   | Provisions   | Project Implications  |
|---|--|---|
| The International Finance Corporation (IFC) Performance Standards | <p><b>Principle 10:</b> Reporting and Transparency</p> <p>The International Finance Corporation's (IFC) Sustainability Framework articulates the Corporation's strategic commitment to sustainable development and is an integral part of IFC's approach to risk management. The Sustainability Framework comprises IFC's Policy and Performance Standards on Environmental and Social Sustainability, and IFC's Access to Information Policy. The Policy on Environmental and Social Sustainability describes IFC's commitments, roles, and responsibilities related to environmental and social sustainability.</p> <p>As of 28 October 2018, there are ten (10) Performance Standards (Performance Standards on Environmental and Social Sustainability) that the IFC requires a project Proponents to meet throughout the life of an investment. These standard requirements are briefly described below.</p> <p><b>Performance Standard 1:</b> Assessment and Management of Environmental and Social Risks and Impacts</p> <p><b>Performance Standard 2:</b> Labour and Working Conditions</p> <p><b>Performance Standard 3:</b> Resource Efficient and Pollution Prevention and Management</p> <p><b>Performance Standard 4:</b> Community Health and Safety</p> | The Performance Standards are directed towards clients, providing guidance on how to identify risks and impacts, and are designed to help avoid, mitigate, and manage risks and impacts as a way of doing business in a sustainable way, including stakeholder engagement and disclosure obligations of the Client (Borrower) in relation to project-level activities. In the case of its direct investments (including project and corporate finance provided through financial intermediaries), IFC requires its clients to apply the Performance Standards to manage environmental and social risks and impacts so that development opportunities are enhanced. IFC uses the Sustainability Framework along with other strategies, policies, and initiatives to direct the business activities of the Corporation to achieve its overall development objectives. |

| Statute   | Provisions  | Project Implications  |
|---|---|---|
|   | <p><b>Performance Standard 5:</b> Land Acquisition, Restrictions on Land Use, and Involuntary Resettlement</p> <p><b>Performance Standard 6:</b> Biodiversity Conservation and Sustainable Management of Living Natural Resources</p> <p><b>Performance Standard 7:</b> Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities</p> <p><b>Performance Standard 8:</b> Cultural Heritage</p> <p><b>Performance Standard 9:</b> Financial Intermediaries (FIs)</p> <p><b>Performance Standard 10:</b> Stakeholder Engagement and Information</p> <p>A full description of the IFC Standards can be obtained from</p> <p><a href="http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1">http://www.worldbank.org/en/projects-operations/environmental-and-social-framework/brief/environmental-and-social-standards?cq_ck=1522164538151#ess1</a></p> |   |
| <p>The United Nations Convention to Combat Desertification (UNCCD) 1992</p> | <p>Addresses land degradation in arid regions with the purpose to contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change.</p> <p>The convention objective is to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas to support poverty reduction and</p>   | <p>The project activities should not be such that they contribute to desertification.</p> |

| Statute  | Provisions   | Project Implications  |
|--|--|---|
|  | environmental sustainability United Nation Convention.   |   |
| Convention on Biological Diversity 1992                          | Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use.<br><br>Promote the protection of ecosystems, natural habitats, and the maintenance of viable populations of species in natural surroundings. | Removal of vegetation cover and destruction of natural habitats should be avoided and where not possible minimised. |
| Stockholm Declaration on the Human Environment, Stockholm (1972) | It recognizes the need for: “a common outlook and common principles to inspire and guide the people of the world in the preservation and enhancement of the human environment.   | Protection of natural resources and prevention of any form of pollution.  |

### Relevant international Treaties and Protocols ratified by the Namibian Government

- Convention on International Trade and Endangered Species of Wild Fauna and Flora (CITES), 1973.
- Convention on Biological Diversity, 1992.
- World Heritage Convention, 1972.



## 5 ENVIRONMENTAL BASELINE

The proposed exploration programme will be undertaken in specific environmental and social conditions. Understanding the pre-project conditions of the environment will aid in laying down background "information" of the status quo and future projections of environmental conditions after proposed works on the EPLs. This also helps the EAP in identifying the sensitive environmental features that may need to be protected through the recommendations and effective implementation of mitigation measures provided.

The baseline information presented below is sourced from a variety of sources including reports of studies conducted in the Hardap Region. Further information was obtained by the Consultant during the site visit.

### 5.1 Biophysical Environment

#### 5.1.1 Climate

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

High temperatures around the project area are mainly experienced between January, at an average of 36.41<sup>0</sup> C; and the lowest temperatures are experienced at an average of 8.15<sup>0</sup>C in July. The highest average rainfall of 56.24 mm is experienced in February, and the lowest average rainfall of 0.78 mm is experienced in August. Moreover, April months experience the highest humidity of 36.38% and low humidity in November at 18.92%. **Figure 3** shows the climatic condition in Mariental.

| Month                                 | Jan              | Feb              | Mar              | Apr              | May              | Jun              | Jul              | Aug              | Sep              | Nov               | Oct              | Dec               | Year              |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|------------------|-------------------|-------------------|
| Record high °C (°F)                   | 40.8<br>(105.44) | 40.8<br>(105.44) | 40.8<br>(105.44) | 36.5<br>(97.7)   | 34.36<br>(93.85) | 30.06<br>(86.11) | 31.13<br>(88.03) | 34.36<br>(93.85) | 39.72<br>(103.5) | 41.87<br>(107.37) | 40.8<br>(105.44) | 41.87<br>(107.37) | 41.87<br>(107.37) |
| Average high °C (°F)                  | 36.22<br>(97.2)  | 35.55<br>(95.99) | 33.88<br>(92.98) | 30.39<br>(86.7)  | 27.54<br>(81.57) | 23.44<br>(74.19) | 23.38<br>(74.08) | 26.96<br>(80.53) | 31.23<br>(88.21) | 34.01<br>(93.22)  | 35.49<br>(95.88) | 36.41<br>(97.54)  | 31.21<br>(88.18)  |
| Daily mean °C (°F)                    | 31.19<br>(88.14) | 30.32<br>(86.58) | 28.76<br>(83.77) | 24.91<br>(76.84) | 21.5<br>(70.7)   | 16.53<br>(61.75) | 15.98<br>(60.76) | 18.63<br>(65.53) | 23.33<br>(73.99) | 26.96<br>(80.53)  | 28.99<br>(84.18) | 30.73<br>(87.31)  | 24.82<br>(76.68)  |
| Average low °C (°F)                   | 25.82<br>(78.48) | 24.77<br>(76.59) | 23.13<br>(73.63) | 19.03<br>(66.25) | 15.0<br>(59.0)   | 9.24<br>(48.63)  | 8.15<br>(46.67)  | 9.83<br>(49.69)  | 14.13<br>(57.43) | 18.2<br>(64.76)   | 21.06<br>(69.91) | 24.12<br>(75.42)  | 17.7<br>(63.86)   |
| Record low °C (°F)                    | 15.03<br>(59.05) | 16.1<br>(60.98)  | 11.81<br>(53.26) | 9.66<br>(49.39)  | 3.22<br>(37.8)   | 0.0<br>(0)       | -1.07<br>(30.07) | -1.07<br>(30.07) | 2.15<br>(35.87)  | 4.29<br>(39.72)   | 7.52<br>(45.54)  | 11.81<br>(53.26)  | -1.07<br>(30.07)  |
| Average precipitation mm (inches)     | 51.08<br>(2.01)  | 56.24<br>(2.21)  | 41.49<br>(1.63)  | 17.25<br>(0.68)  | 7.93<br>(0.31)   | 2.25<br>(0.09)   | 1.57<br>(0.06)   | 0.78<br>(0.03)   | 4.15<br>(0.16)   | 6.85<br>(0.27)    | 11.05<br>(0.44)  | 21.65<br>(0.85)   | 18.53<br>(0.73)   |
| Average precipitation days (≥ 1.0 mm) | 7.9              | 8.59             | 6.34             | 3.22             | 1.07             | 0.19             | 0.19             | 0.29             | 1.17             | 1.56              | 1.95             | 4.1               | 3.05              |
| Average relative humidity (%)         | 30.29            | 34.46            | 35.01            | 36.38            | 31.68            | 33.67            | 33.86            | 25.49            | 21.1             | 18.92             | 20.14            | 23.82             | 28.74             |
| Mean monthly sunshine hours           | 12.35            | 12.31            | 12.25            | 12.05            | 11.73            | 11.56            | 11.61            | 11.97            | 12.3             | 12.36             | 14.44            | 14.44             | 12.44             |

Figure 3: Shows the climate condition around the project area, Mariental (source: [Mariental climate: Climate-Data.org](#))

### 5.1.2 Landscape

The EPLs area is dominated by the Nama-Karoo Basin landscapes. This large flat lying plateau dominates much of Southern Namibia. Sedimentary rocks deposited first in the Nama Basin and later in the same area in the Karoo Basin, form the foundations of the landscape. The basin slopes from the north, where elevations are about 1400 m above the sea level, to the south, where altitudes are approximately 900 m above sea level. The Fish Lowen and Konkiep rivers drain the landscape, all flowing south to the Orange River. Furthermore, part of the EPLs is covered by the Weissrand Plateau, the plateau lies sandwiched between the Nama-Karoo basin and the Kalahari sandveld. Previously it was probably covered by Kalahari sand that has now been stripped away, leaving a surface of calcrete that extends eastwards under present sands (Mendelsohn, 2003). **Figures 4a and 4b**, below show the landscape map and the topographic map, respectively.

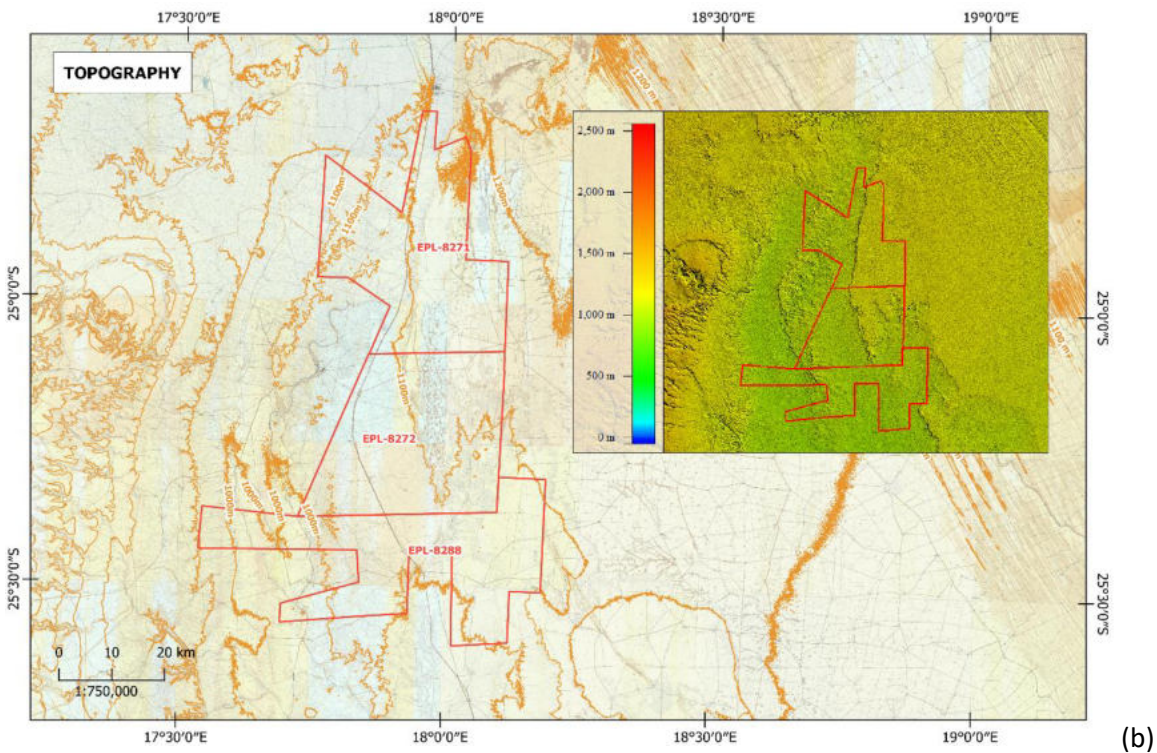
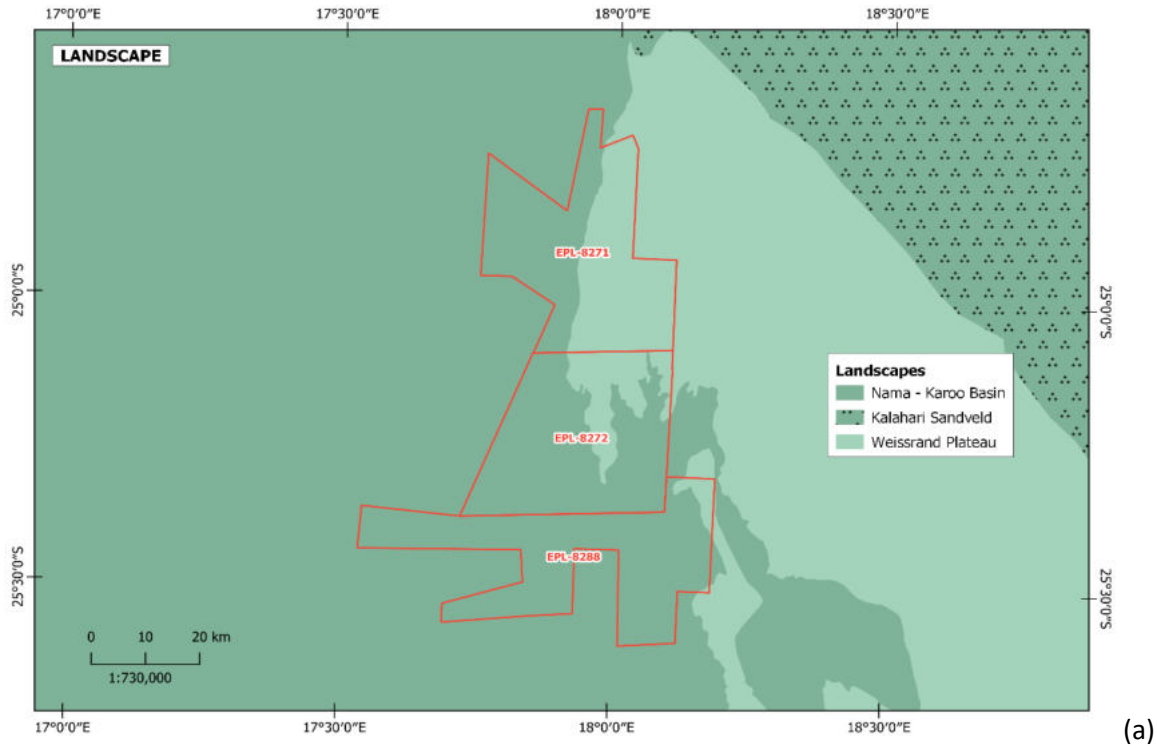


Figure 4: 4a, Landscape of project area; 4b, Topographic map of project area

### 5.1.3 Geology

The project area is underlain by three types of geological formations, Kalahari and Namib Sands, Dykes and Sills, and Main Karoo Basin. The Kalahari and Namib Sands extend from Northern Cape through Namibia, Botswana, and Zambia. It is filled with sand and water-borne deposits. The main Karoo Basin is covered by extensive sheets of moving ice on the southern side, while the smaller ice sheets and glaciers formed in the north and north-west. These sheets of ice flattened the landscape while glaciers cut through the land surface to gouge out new valleys. Furthermore, when the great masses of molten rocks were forced up into, and through the earth crust as volcanoes or as relatively subdue intrusions of igneous rock, hundreds of dykes and sills were formed, as were many kimberlite pipes that intruded into the crust. Many of these pipes are in the area of Gibeon and in the southern part of the Khaudum Game Park (Mendelsohn 2003). The lithology of the EPLs is dominated by the Tillite, Boulder shale, shale, Conglomerate, grit, mud stone, Sand stone, Gravel, Scree, Calcrete and Alluvium. **Figure 5** below shows the general geology map for the project.

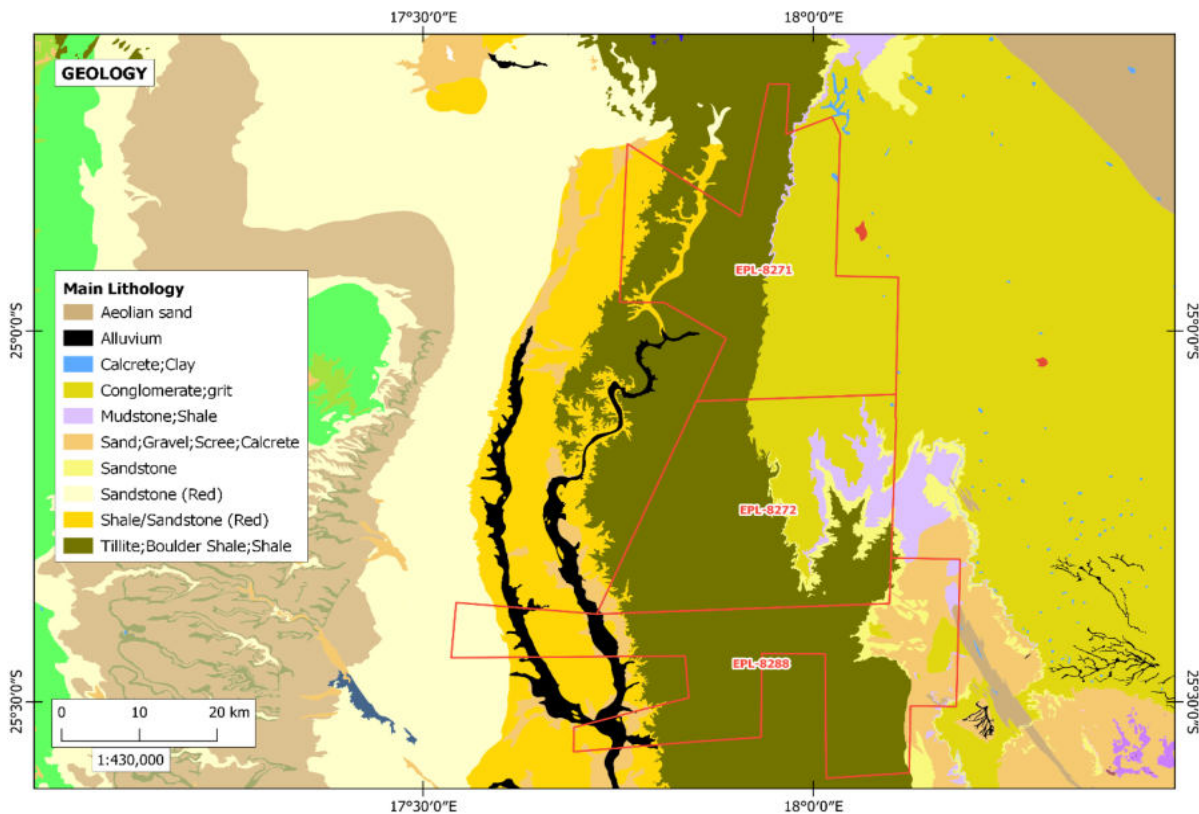


Figure 5: A map of the general geology of the project area

### 5.1.4 Soil

The EPLs are dominated by three (3) types of soil, Haplic Calcisols, Eutric Leptosols, and Petric Calcisols. The Haplic and Petric Calcisols are mostly found in depressions or other low-laying areas of the landscape, and typically contain accumulations on Calcium Carbonate, often in cemented form called calcrete. These soils are potentially fertile but iron and zinc may not be available to plant because of high concentration of calcium (Mendelsohn, 2003). Furthermore the Eutric Leptosols which, is one of the dominant soil in the project area is typically formed in actively eroding landscape, especially in the hilly or undulating areas that covers much of southern and north-western Namibia. These coarse-textured soils are characterized by their limited depth caused by the presence of a continuous hard-rock highly calcareous or cemented layer within 30 cm of the surface. They are shallowest soil found in Namibia, with low water-holding capacity, with high erosion (Mendelsohn, 2003). **Figure 6** below shows the soil types found within the EPL area.

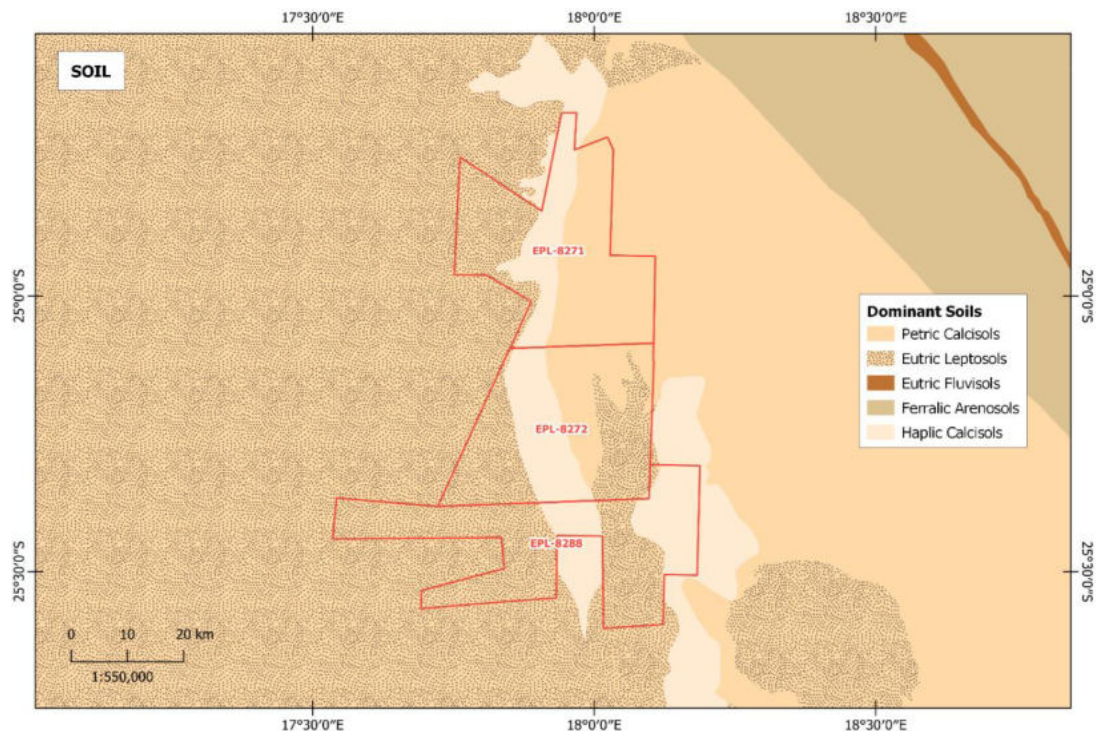
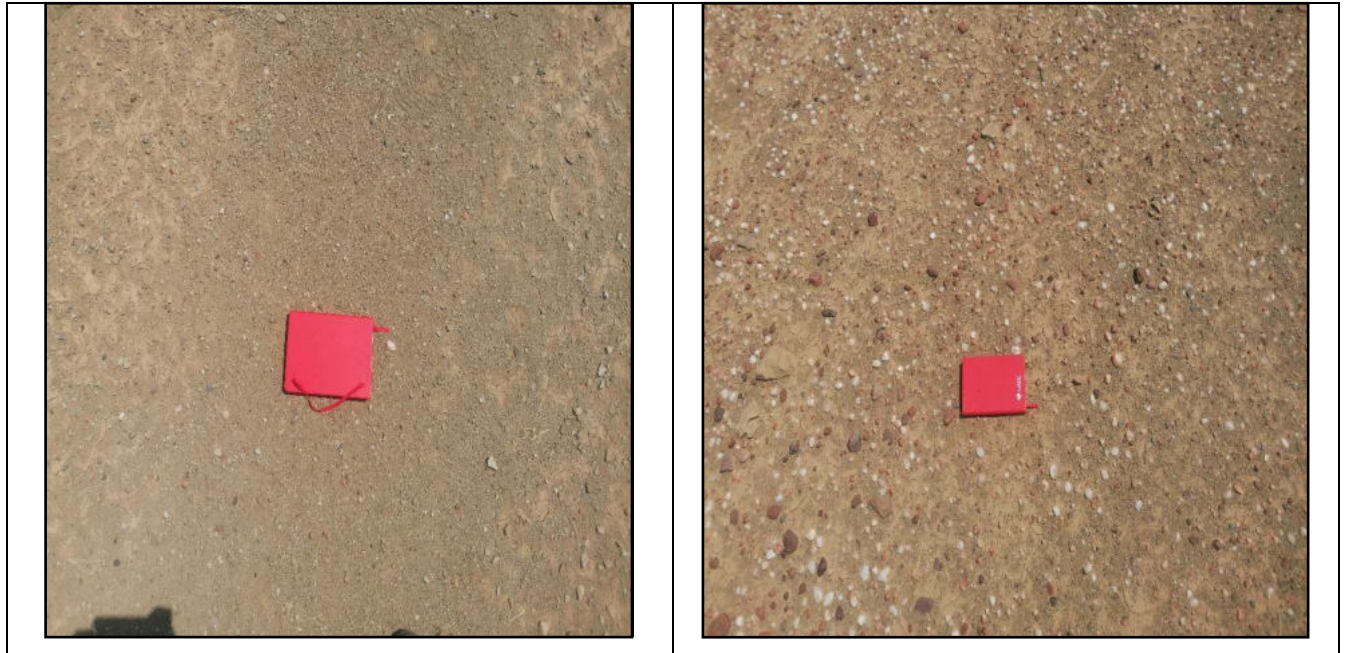


Figure 6: shows the dominant soil types found within the EPL

It is notable that during the operational phase of the project, soil sampling will be conducted. Therefore, the Soil Conservation Act (No 76 of 1969) should be taken into account to ensure that soils are conserved in a way that does not promote soil erosion.

Some photos of the soils observed in the EPLs area during the site visit are shown in Figure 6-7. The soils color ranges from light orange and brown loamy sandy to grey sandy gravel.



**Figure 7: Shows the soil types dominating the EPLs area observed on site**

### 5.1.5 Hydrology, Water Resources and Groundwater Vulnerability to Pollution

The Stampriet Transboundary Aquifer System (STAS) is the only permanent and dependable water resource for the local population living in an area that covers 87,000 sq. km (km<sup>2</sup>) from Central Namibia into Western Botswana and South Africa's Northern Cape Province (UNESCO, 2013).

The EPLs are covered by one main river (long term) surface water, Fish River located at western part of the EPLs and also some minor rivers going through the EPLs such as Grundorner River. The EPLs are covered by thin soils underlain by unfractured rock bodies with little groundwater potential, porous aquifers, and fractured, fissured or karstified aquifer. The eastern parts of the EPLs contains rocks that are good (porous) aquifers, while the middle of the EPLs is more dominated by the Rocks that are poor (Rock bodies with little groundwater potential) aquifers and the eastern part of the EPLs is dominated by the fractured (fractured, fissured or Karstified aquifer) aquifer. Due to the nature and mixture of different type's pf aquifers around the EPLs they fall within a zone of moderate (vulnerability) sensitivity to high (Vulnerability) sensitivity to groundwater pollution. **Figure 8** shows the water resources (surface water and groundwater/aquifer) map of the EPLs area.

*With regards to water abstraction, it is recommended for the Proponent to obtain a permit, if necessary, as required under the Water Act No. 54 of 1956 (enforced), and the Water Resources Management Act, No. 11 of 2013.*

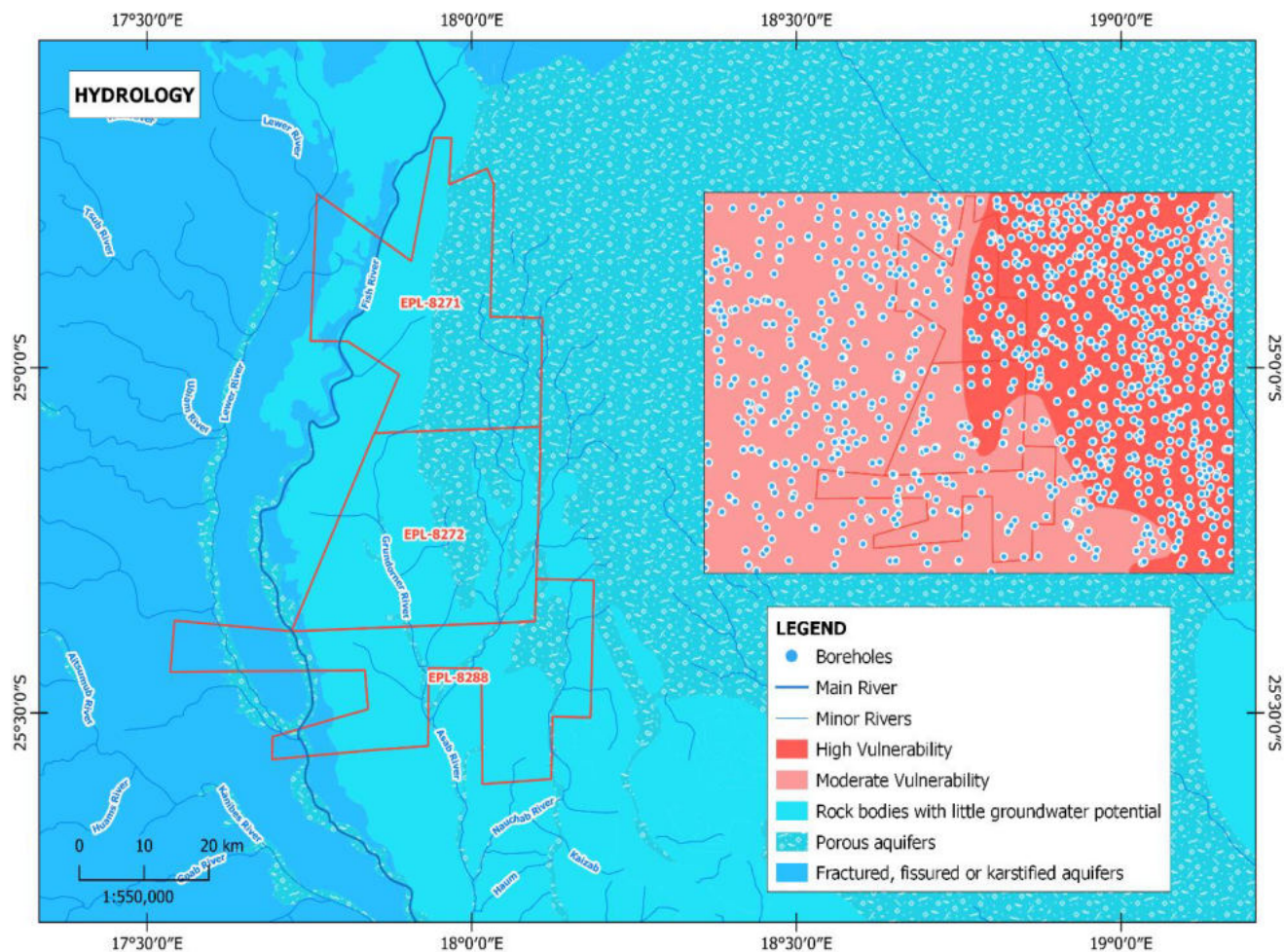


Figure 8: shows the hydrology map of the project area



### 5.1.6 Flora and Fauna

#### 5.1.7.1 Flora

The project area is dominated by three types of vegetation, Dwarf shrubs Savanna, Diverse Shrubland Plains, and Weissrand. The Project area is a semi-arid region with islands of comparative plant species due to moisture supply that differs from area to area. **Figure 9** below shows the vegetation map of the EPLs area

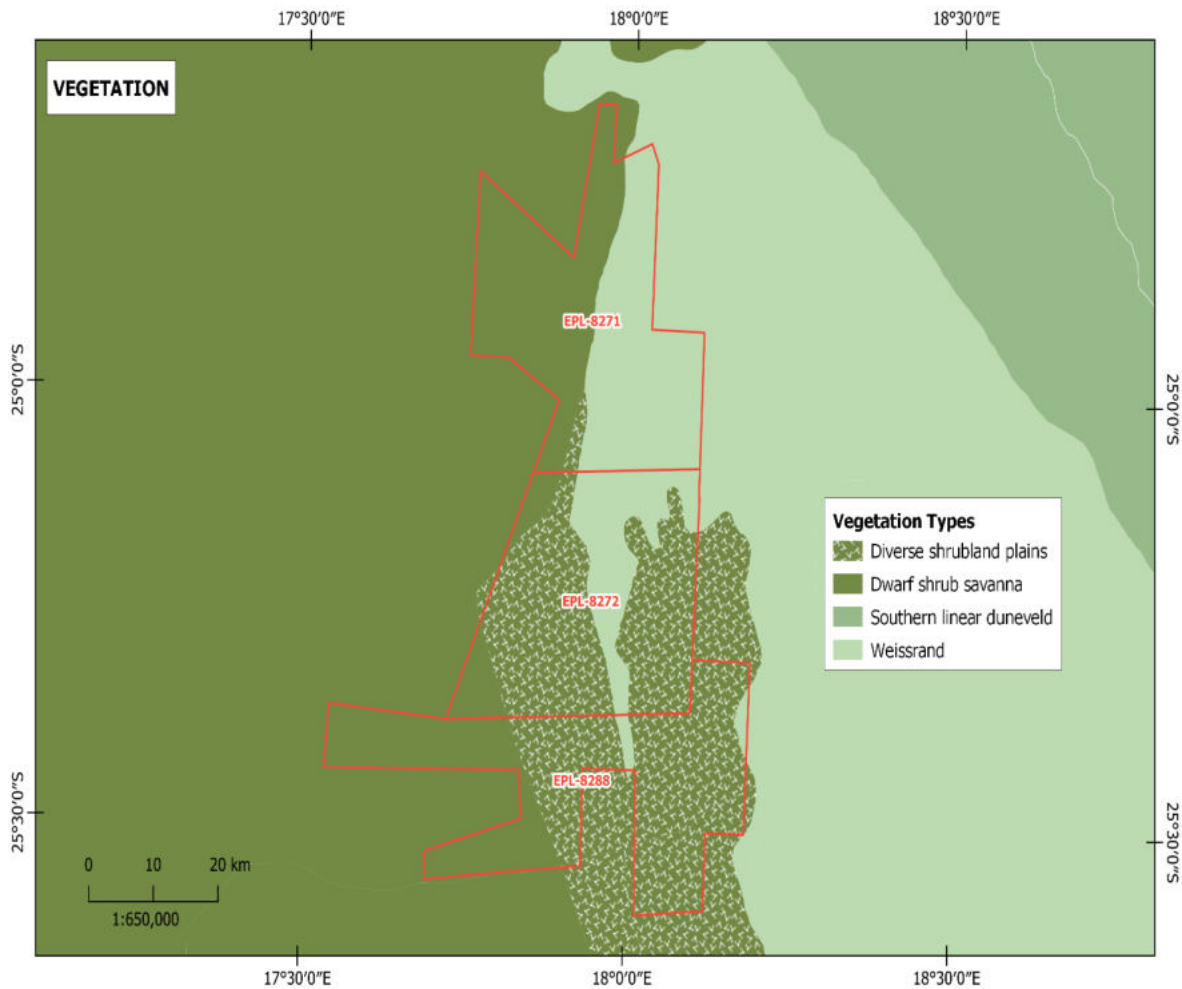


Figure 9: Site Vegetation Map



Figure 10: Shows plants (vegetation) observed with the EPLs area

5.1.7.2 Fauna

During site visit which was conducted on 07<sup>th</sup> October 2022, the presences of domestic animals was observed on site (**Figure 11**). According to the locals EPLs area has wildlife such as, springboks, ostriches, kudus, avian species and leopards, as well as livestock such as cows, goats, donkeys and sheep.

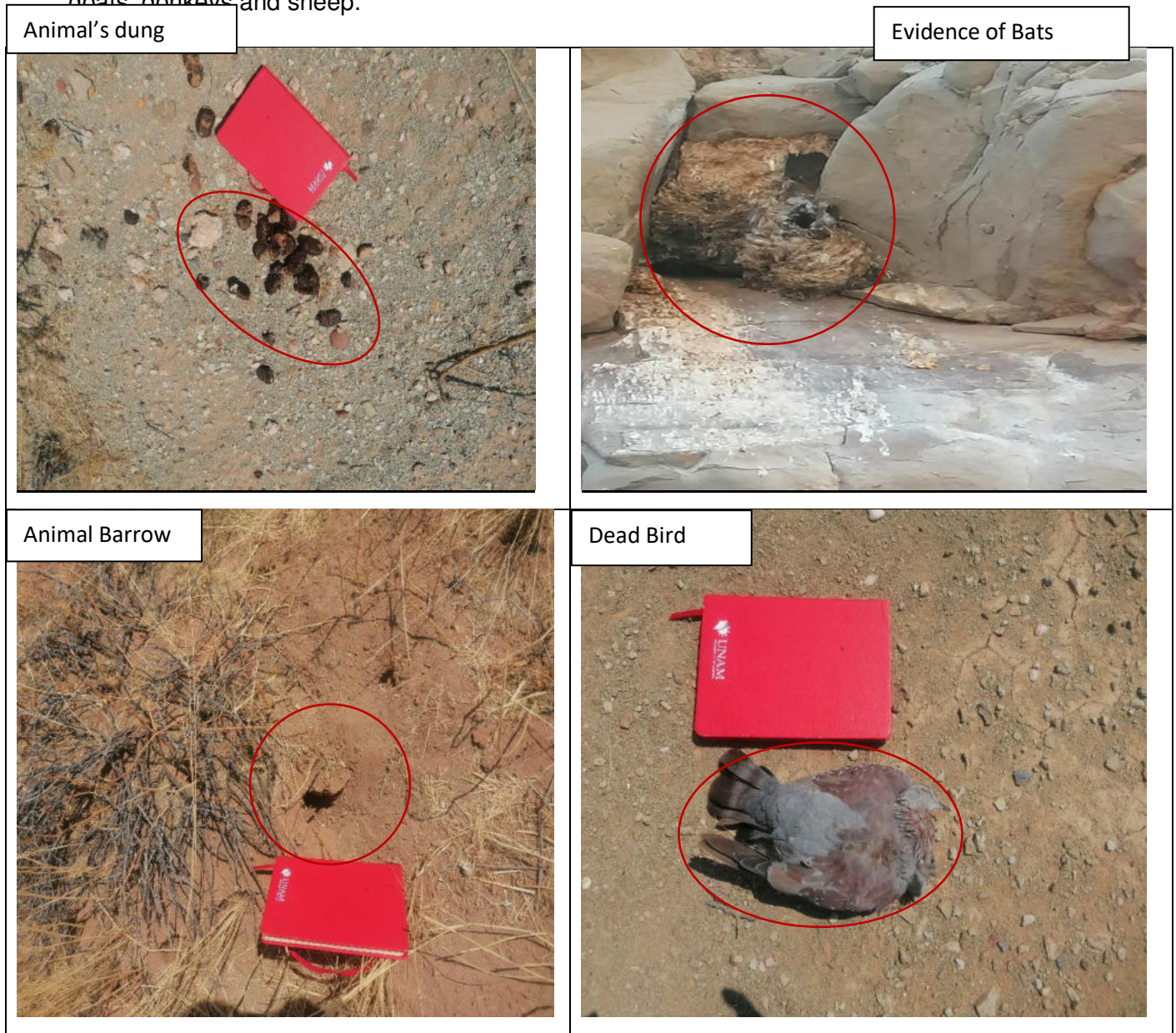


Figure 11: Evidence of faunal presence

## 5.2 Heritage and Archaeology

### 5.2.1 Local Level and Archaeological Findings

Archaeological sites in Namibia are protected under the National Heritage Act of 2004 (No. 27 of 2004). Evidence shows that, the emergence of modern humans and their ancestors have lived in Namibia for more than one million years, and there are fossil remains of lineal hominine ancestors as early as the Miocene Epoch (Kinahan, 2017). Namibia has a relatively complete sequence covering the mid-Pleistocene to Recent Holocene period, represented by thousands of archaeological sites mainly concentrated in the central highlands, escarpment, and Namib Desert. Abundant evidence has been found of human occupation since at least the mid-Pleistocene (Shackley, 1985). The Hardap and Karas regions are among the archaeologically sensitive landscapes in Namibia, the region is home to 37 declared national monuments in the country and their non-designated archaeological sites, and thus make it archaeologically and historically sensitive.

During the site assessment, archaeological sites were observed. Graves were observed in the Vaaldam settlement area. This suggests the possibility of the discovery of more archaeologically

significant resources during the exploration works. **Figure 12** shows archaeologically significant sites observed on the EPLs.

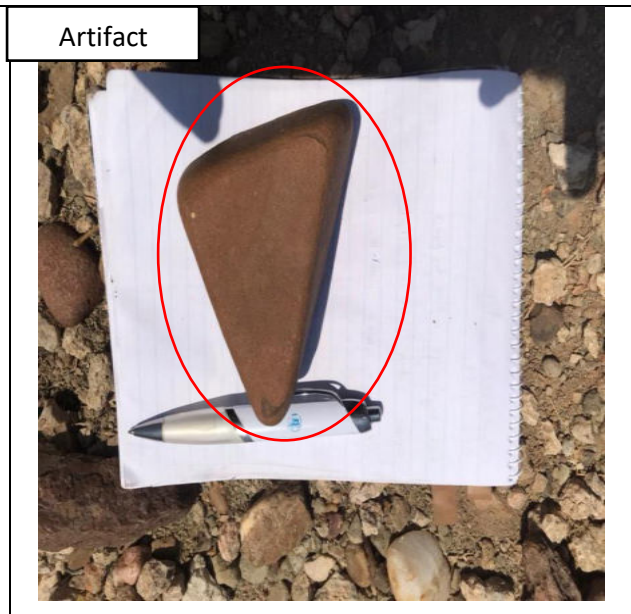


Figure 12: Shows archaeological sites observed during site visit within the EPLs

### 5.3 Surrounding Land Uses

Parts of the EPL 8288 falls within Khob !Naub Conservancy, and the rest on Commercial and communal Farmland as shown in **Figure 13**. The Proponent is required to secure a signed agreement from the affected landowners, farmers and traditional authorities to gain access to the areas of interest for prospecting and exploration investigations as per the Section 52 of the Minerals (Prospecting and Mining) Act No. 33 of 1992 and Section 2.2.3 of the Minerals Policy of Namibia.

1. Section 52 (1) The holder of mineral licence shall not exercise any rights conferred upon such holder by this Act or under any terms and conditions of such mineral license –
  - (a) In, on or under any and until such time as such holder has entered into an agreement in writing with the owner of such land containing terms and conditions relating to the payment of compensation, or the owner of such land has in writing waved any right to such compensation and has submitted a copy of such agreement or waiver to the Commissioner.

Section 2.2.3 of the Draft Minerals Policy of Namibia states that the Licence Holder and/or mineral explorers currently have to negotiate a contract with landowners to gain access for or mining purposes.

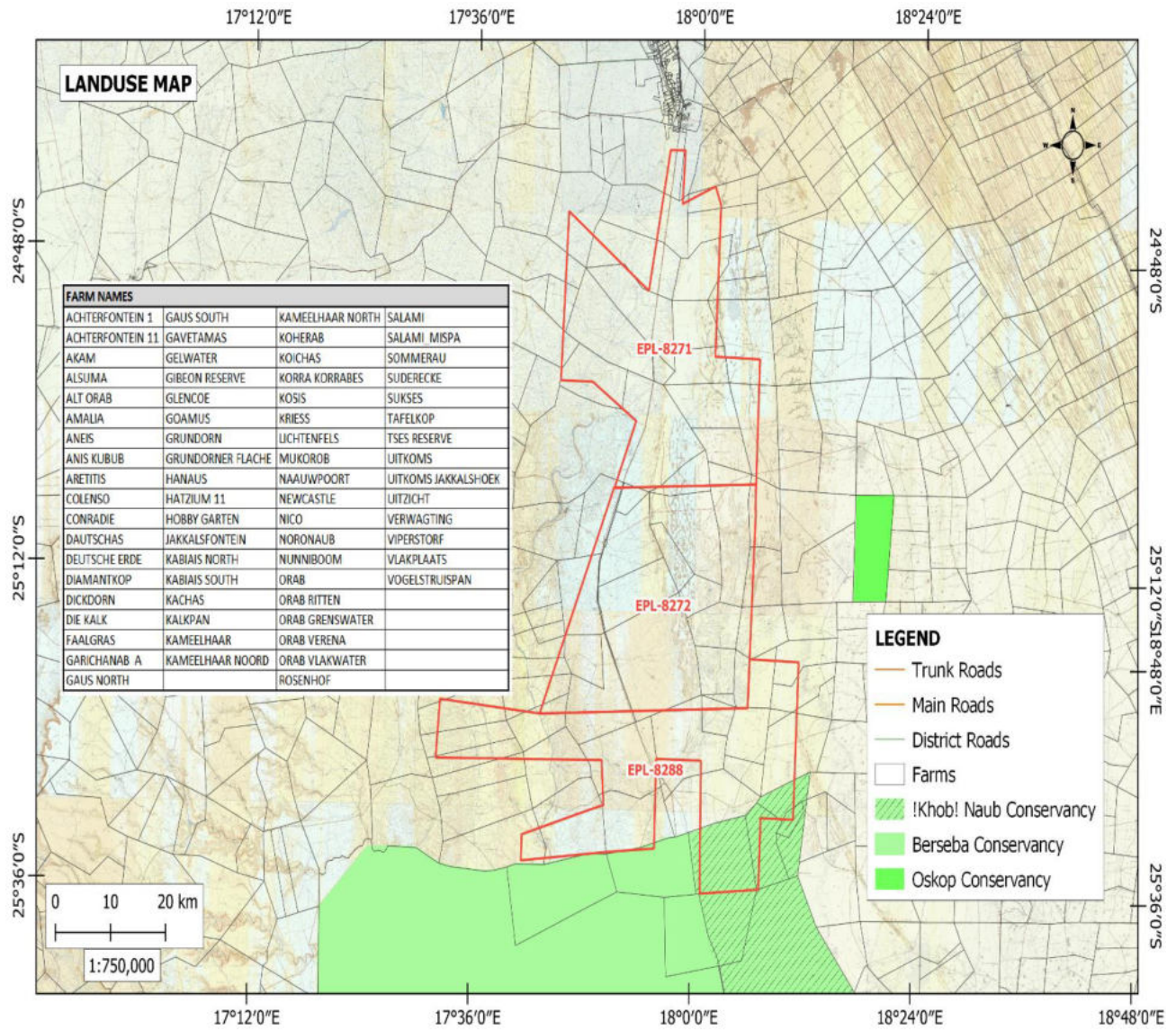


Figure 13: Map showing land use within and surrounding the EPLs

## 5.4 Socio-Economic conditions

### 5.4.1 Population

According to the 2011 National Census, Mariental had a population of 12,478. The last labour force survey of 2016, estimated unemployment rate in Hardap region to be 46.2% which is above the 33% national unemployment rate. Mariental's population is estimated at 12,478 residents excluding those living in nearby villages that are not part of the jurisdiction of the town, with an annual population growth of 2.4% (2011 National Census). Using the population growth of 2.4% per annum, we estimate the population of Mariental to have reached 14,386 in 2017. This represents an absolute population increase of 1,908 over a 6 years' period between 2011 and 2017. The population is estimated to further increase by 345 to reach 14,731 in 2018.

### 5.4.2 Farming

Agricultural activities are common in Hardap region mostly crop and livestock farming. This is in line with the findings of the Household Income and Expenditure survey which found that most households or families living in the region were engaged in agricultural activities. According to the last census, 22.8 and 53 percent of households living in Hardap region were engaged in livestock and crop farming activities respectively. Furthermore, only 7.8 percent of the region's households were engaged in poultry farming activities.

Mariental and its surrounding rural areas is not conducive for crop production due to its unsuitable soil type for crops (salty and clay soil), low rainfall and non-conducive weather conditions. However, due to its rich water resources from the Hardap dam with the support of manure and fertilizers, most crops and vegetables are grown. Other farming activities in Hardap region include Hardap green scheme which produces wheat, maize, lucerne and beans; Fruit Crop Farming (Dates Farming), Pig Farming, Dairy Farming, Wildlife animals' farming, Fish Farming and Fish Feed Production, Small stock farming; the most common livestock in Hardap region which includes sheep and goats. There are also some farmers who own cattle.

### 5.4.3 Tourism

Mariental has diverse sceneries for tourism. Most notably, the Hardap dam found 18 km north east of Mariental. Gross Nabas Mariental is also found at the South of Stampriet, 20 km along the C15 road. The other unique potential of tourist attraction to the region is the Lapa Lange Lodge situated 35 km from Mariental in the Kalahari Desert. Additionally, the Batelle Kalahari game ranch is found 46 km north of Mariental



### 5.4.4 Mining

There is low potential of mineral deposits in the Mariental town. However, a small amount of deposits such as Copper, Silver, Lead, Iron, Manganese and Kimberlite are found in the area.

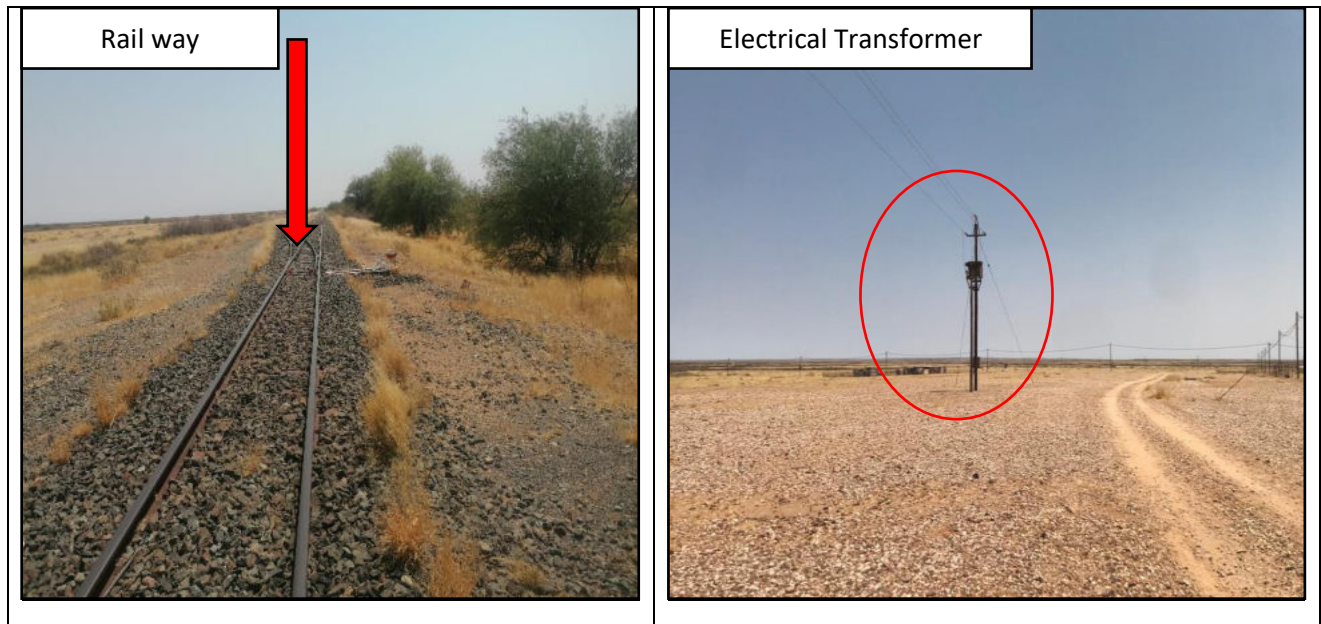
Quarrying of sand is common in Mariental and Hardap region. Due to the increase of construction activities in Mariental.

### 5.4.5 Services Infrastructure

The services activities provided in the town of Mariental range from educational, health, financial, Tourism, Transport and other administrative services provided by government and related offices. Mariental Town is located along an important route (Trans-Kalahari), which leads to other parts of the country, and connects Namibia to other countries such as South Africa.

### 5.5 Other infrastructures

There are local services and infrastructure exists within the EPLs' area and some of these are shown in the figure 14 below



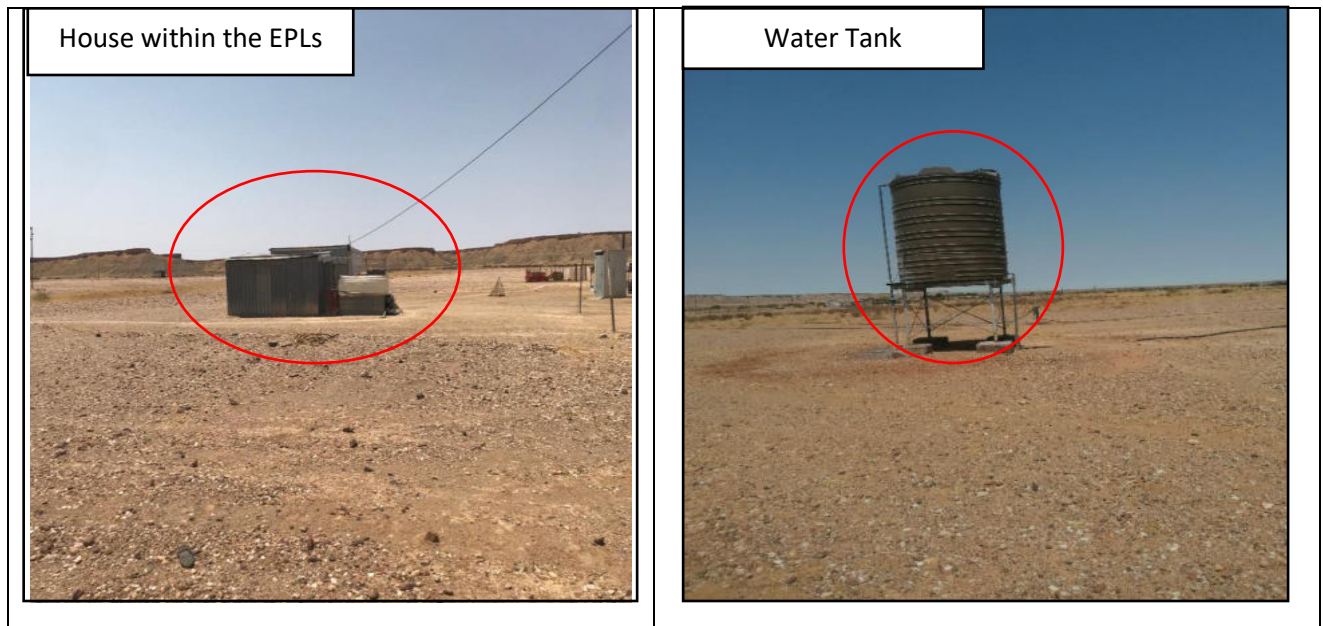


Figure 14: Show some infrastructure found within the EPLs area

## 6 PUBLIC CONSULTATION PROCESS

Public consultation forms an important component of an Environmental Assessment (EA) process. It provides potential Interested and Affected Parties (I&APs) with an opportunity to comment on and raise any issues relevant to the project for consideration as part of the assessment process, thus assisting the Environmental Assessment Practitioner (EAP) in identifying all potential impacts and to what extent further investigations are necessary. Public consultation can also aid in the process of identifying possible mitigation measures. Public consultation for this scoping study has been done in accordance with the EMA and its EIA Regulations.

### 6.1 Pre-identified and Registered Interested and Affected Parties (I&APs)

Relevant and applicable national, regional, and local authorities, local leaders, and other interested members of the public were identified. Pre-identified I&APs were contacted directly, while other parties who contacted the Consultant after project advertisement notices in the newspapers, were registered as I&APs upon their request. Newspaper advertisements of the proposed exploration activities were placed in two widely-read national newspapers in the region (The Namibian Newspaper and New Era Newspaper). The project advertisement/announcement ran for two consecutive weeks inviting members of the public to register as I&APs and submit their comments. The summary of pre-identified and registered I&APs is listed in **Table 6-1** below and the complete list of I&APs is provided in **Appendix D**.

**Table 6-5-1: Summary of Interested and Affected Parties (I&APs)**

|  |
|--|
| <b>National (Ministries and State-Owned Enterprises)</b> |
| Ministry of Environment, Forestry and Tourism            |
| Ministry of Mines and Energy                             |
| Ministry of Health and Social Services                   |
| Ministry of Agriculture, Water and Land reform           |
| <b>Regional, Local and Traditional Authorities</b>       |
| Hardap Regional Council                                  |
| Mariental Municipality                                   |
| <b>General Public</b>                                    |

|   |
|---|
| Land owners /Interested members of the public |
| Namibia Community Based Tourism Association   |

## 6.2 Communication with I&APs

Regulation 21 of the EIA Regulations details the steps to be taken during a public consultation process and these have been used in guiding this process. Communication with I&APs with regards to the proposed development was facilitated through the following means and in this order:

- A Background Information Document (BID) containing brief information about the proposed exploration works was compiled (**Appendix E**) and delivered to relevant Authoritative Ministries, and upon request to all new registered Interested and Affected Parties (I&APs);
- Project Environmental Assessment notices were published in The Namibian Newspaper (**29 August 2022** and **05 September 2022**) and New Era Newspaper (**29 August 2022** and **05 September 2022**) (**Appendix F**), briefly explaining the activity and its locality, inviting members of the public to register as I&APs and submit their comments/concerns;
- Public notices were placed at frequented public places at Mariental Town (**Figure 15**) to inform members of the public of the EIA process and register as I&APs, as well as submit comments.
- A public meeting was scheduled on **07 October 2022**, at Mariental Secondary School Hall in Mariental at 10h00 (**Figure 16**). The meeting minutes were taken and attached hereto as Appendix E.



Figure 15: Public notices placed at the Mariental Municipality in Mariental Town, Hardap Region



Figure 16: Consultation meeting scheduled on the 07<sup>th</sup> October 2022, Mariental Secondary School Hall, in Mariental, Hardap Region.

There were no Issues raised by I&APs, as no one showed up for the meeting that was scheduled on the 07 of October 2022, at Mariental Secondary School in Mariental.

## 7 IMPACT IDENTIFICATION, ASSESSMENT AND MITIGATION MEASURES

### 7.1 Impact Identification

Proposed developments/activities are usually associated with different potential positive and/or negative impacts. For an environmental assessment, the focus is placed mainly on the negative impacts. This is done to ensure that these impacts are addressed by providing adequate mitigation measures such that an impact's significance is brought under control, while maximizing the positive impacts of the development. The potential positive and negative impacts that have been identified from the prospecting activities are listed as follow:

Positive impacts:

- Creation of temporary job opportunities to the locals (primary, secondary and tertiary employment).
- Provision of opportunities to small businesses that can supply goods and services to the exploration works.
- Boosting of the local economic growth and development.

Negative impacts:

- Disturbance to the grazing area
- Land degradation and Biodiversity Loss.
- Generation of dust
- Water Resources Use
- Soil & Water Resources Pollution
- Waste Generation
- Occupational Health & Safety risks
- Vehicular Traffic Use & Safety
- Noise & Vibrations
- Disturbance to Archaeological & Heritage Resources
- Impacts on local Roads
- Social Nuisance: local property intrusion & disturbance

- Social Nuisance: Job seeking & differing Norms, Culture & values.

## 7.2 Impact Assessment Methodology

The Environmental Assessment process primarily ensures that potential impacts that may occur from project activity are identified, and addressed with environmentally cautious approaches and legal compliance. The impact assessment method used for this project is in accordance with Namibia’s Environmental Management Act (No. 7 of 2007) and its Regulations of 2012, as well as the International Finance Corporation (IFC) Performance Standards.

The identified impacts were assessed in terms of scale/extent (spatial scale), duration (temporal scale), magnitude (severity) and probability (likelihood of occurring), as presented in **Error! Reference source not found..**

In order to enable a scientific approach to the determination of the environmental significance, a numerical value is linked to each rating scale. This methodology ensures uniformity and that potential impacts can be addressed in a standard manner so that a wide range of impacts are comparable. It is assumed that an assessment of the significance of a potential impact is a good indicator of the risk associated with such an impact. The following process will be applied to each potential impact:

- Provision of a brief explanation of the impact,
- Assessment of the pre-mitigation significance of the impact, and
- Description of recommended mitigation measures.

The recommended mitigation measures prescribed for each of the potential impacts contribute towards the attainment of environmentally sustainable operational conditions of the project for various features of the biophysical and social environment. The following criteria were applied in this impact assessment.

**Table 7-1: Criteria used for impact assessment (extent, duration, intensity and probability)**

| <b>The Criteria used to assess the potential impacts</b>  |                       |                   |                        |                 |
|---|-----------------------|-------------------|------------------------|-----------------|
| <b>Extent or (spatial scale) - extent is an indication of the physical and spatial scale of the impact.</b> |                       |                   |                        |                 |
| <b>Low (1)</b>  | <b>Low/Medium (2)</b> | <b>Medium (3)</b> | <b>Medium/High (4)</b> | <b>High (5)</b> |



| <b>The Criteria used to assess the potential impacts</b>  |  |  |  |  |
|---|--|--|--|--|
| Impact is localised within the site boundary: Site only   | Impact is beyond the site boundary: Local                    | Impacts felt within adjacent biophysical and social environments: Regional | Impact widespread far beyond site boundary: Regional | Impact extend National or over international boundaries                                      |
| <b>Duration-</b> Duration refers to the timeframe over which the impact is expected to occur, measured in relation to the lifetime of the project   |  |  |  |  |
| <b>Low (1)</b>  | <b>Low/Medium (2)</b>  | <b>Medium (3)</b>  | <b>Medium/High (4)</b>                               | <b>High (5)</b>  |
| Immediate mitigating measures, immediate progress   | Impact is quickly reversible, short-term impacts (0-5 years) | Reversible over time; medium term (5-15 years)                             | Impact is long-term                                  | Long term; beyond closure; permanent; irreplaceable or irretrievable commitment of resources |
| <b>Intensity, Magnitude / severity</b> - Intensity refers to the degree or magnitude to which the impact alters the functioning of an element of the environment. This a qualitative type of criteria |  |  |  |  |
| <b>H-(10)</b>   | <b>M/H-(8)</b>   | <b>M-(6)</b>   | <b>M/L-(4)</b>                                       | <b>L-(2)</b>   |

| <b>The Criteria used to assess the potential impacts</b>   |  |  |  |  |
|--|--|--|--|--|
| Very high deterioration, high quantity of deaths, injury of illness / total loss of habitat, total alteration of ecological processes, extinction of rare species  | Substantial deterioration, death, illness or injury, loss of habitat / diversity or resource, severe alteration, or disturbance of important processes | Moderate deterioration, discomfort, partial loss of habitat / biodiversity or resource, moderate alteration  | Low deterioration, slight noticeable alteration in habitat and biodiversity. Little loss in species numbers      | Minor deterioration, nuisance or irritation, minor change in species / habitat / diversity or resource, no or very little quality deterioration. |
| <b>Probability of occurrence</b> - Probability describes the likelihood of the impacts occurring. This determination is based on previous experience with similar projects and/or based on professional judgment |  |  |  |  |
| <b>Low (1)</b>   | <b>Medium/Low (2)</b>  | <b>Medium (3)</b>  | <b>Medium/High (4)</b>   | <b>High (5)</b>  |
| Improbable; low likelihood; seldom. No known risk or vulnerability to natural or induced hazards.  | Likely to occur from time to time. Low risk or vulnerability to natural or induced hazards   | Possible, distinct possibility, frequent. Low to medium risk or vulnerability to natural or induced hazards. | Probable if mitigating measures are not implemented. Medium risk of vulnerability to natural or induced hazards. | Definite (regardless of preventative measures), highly likely, continuous. High risk or vulnerability to natural or induced hazards.             |

**7.2.1 Significance**

Impact significance is determined through a synthesis of the above impact characteristics. The significance of the impact “without mitigation” is the main determinant of the nature and degree of mitigation required. As stated in the introduction to this section, for this assessment, the significance of the impact without prescribed mitigation actions is measured.

Once the above factors (**Error! Reference source not found.**) have been ranked for each potential impact, the impact significance of each is assessed using the following formula:

$$\text{SIGNIFICANCE POINTS (SP)} = (\text{MAGNITUDE} + \text{DURATION} + \text{SCALE}) \times \text{PROBABILITY}$$

The maximum value per potential impact is 100 significance points (SP). Potential impacts were rated as high, moderate or low significance, based on the following significance rating scale (Table 7-2).

Table 7-2: Significance rating scale

| <i>Significance</i> | <i>Environmental Significance Points</i> | <i>Colour Code</i> |
|---------------------|--|--------------------|
| High (positive)     | >60                                      | H                  |
| Medium (positive)   | 30 to 60                                 | M                  |
| Low (positive)      | 1 to 30                                  | L                  |
| Neutral             | 0  | N                  |
| Low (negative)      | -1 to -30                                | L                  |
| Medium (negative)   | -30 to -60                               | M                  |
| High (negative)     | -60<                                     | H                  |

**Positive (+)** – Beneficial impact

**Negative (-)** – Deleterious/ adverse+ Impact

**Neutral** – Impacts are neither beneficial nor adverse

For an impact with a significance rating of high (-ve), mitigation measures are recommended to reduce the impact to a medium (-ve) or low (-ve) significance rating, provided that the impact with a medium significance rating can be sufficiently controlled with the recommended mitigation measures. To maintain a low or medium significance rating, monitoring is recommended for a period of time to enable the confirmation of the significance of the impact as low or medium and under control.

The assessment of the exploration phases is done for pre-mitigation and post-mitigation.

The risk/impact assessment is driven by three factors:

**Source:** The cause or source of the contamination.

**Pathway:** The route taken by the source to reach a given receptor

**Receptor:** A person, animal, plant, eco-system, property or a controlled water source. If contamination is to cause harm or impact, it must reach a receptor.

A pollutant linkage occurs when a source, pathway and receptor exist together. Mitigation measures aim firstly, avoid risk and if the risk cannot be avoided, mitigation measures to minimize the impact are recommended. Once mitigation measures have been applied, the identified risk would reduce to lower significance (Booth, 2011).

This assessment focuses on the three project phases namely; the prospecting, exploration (and possible analysis) and decommissioning. The potential negative impacts stemming from the proposed activities of the EPLs are described, assessed and mitigation measures provided thereof. Further mitigation measures in a form of management action plans are provided in the Draft Environmental Management Plan.

### **7.3 Assessment of Potential Negative Impacts**

The key potential negative impacts associated with the project activities are identified and assessed below:

#### **7.3.1 Disturbance to the grazing areas**

The EPLs are overlying commercial farms and communal areas that practice livestock and game farming, the invasive exploration activities such as site clearing, trenching, and drilling can potentially lead to the disturbance of grazing land available to the livestock and wildlife. The land

owners greatly depend farming for subsistence and commercial purposes; therefore, their livelihood may be impacted through any eventual losses.

The effect of exploration work on the land (when done over a wider spatial extent), if not mitigated, may hinder animal husbandry in the area and its surrounding. The project area might experience loss of its pastoral system over time, which minimizes the number of animals on the farms and overall farming activity in the area, and lead to loss of livelihoods. Under the status, the impact can be of a low significance rating. With the implementation of appropriate mitigation measures, the rating will be reduced to a lower significance. The impact is assessed in Table 7-3 below.

**Table 7-3: Assessment of the impacts of exploration on grazing areas**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | M: -4   | M: -3    | M: -5     | M/H: 5      | M: -60       |
| Post mitigation   | L/M: -2 | L/M: -2  | L/M: -4   | L/M: 3      | L: -24       |

### 7.3.2 Land Degradation and Loss of Biodiversity

**Fauna:** The trenching, pitting and drilling activities carried out during exploration would result in land degradation, leading to habitat loss for a diversity of flora and fauna ranging from microorganisms to large animals and trees. Endemic species are most at risk, since even the slightest disruption in their habitat can result in extinction.

The presence and movement of the exploration workforce and operation of project equipment and heavy vehicles would disturb livestock and wildlife present farms. The proposed activities may also carry the risk of potential illegal hunting of local wildlife. This could lead to reduction of specific faunal species, which may limit tourism (sightseeing and safari) activity in the area.

Additionally, if the exploration sites are not rehabilitated, they could pose a high risk of injuries to animals by falling into holes and pits.

**Flora:** The direct impacts of exploration work on flora will mainly occur through clearing for exploration access routes and associated infrastructure. The dust emissions from drilling may also affect surrounding vegetation through the fall of dust, if excessive. Some loss of vegetation is an inevitable consequence of the development. However, given the abundance of the shrubs and site-specific areas of exploration on the EPLs, the impact will be localized, therefore manageable.

Under the status, the impact can be of a medium significance rating. With the implementation of appropriate mitigation measures, the rating will be reduced to a low significance rating. The impact is assessed in Table 7-4 below.

**Table 7-4: Assessment of the impacts of exploration on biodiversity**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | M: -4   | M: -4    | M: -6     | M/H: 4      | M: -56       |
| Post mitigation   | L/M: -3 | L/M: -3  | L/M: -4   | L/M: 3      | L: -30       |

### 7.3.3 Impact on Air Quality

Dust emanating from site access roads when transporting exploration equipment and supply to and from site may compromise the air quality in the area. Vehicular movements from heavy vehicles such as trucks would potentially create dust, even though it is anticipated to be low. The hot and dry environment, loose and sandy nature of the substrate and low vegetation cover causes ambient fugitive dust levels. Additionally, activities carried out as part of the exploration works such as drilling would contribute to the dust levels in the air. The medium significance of this impact can be reduced to a low significance rating by properly implementing mitigation measures. The impact is assessed in Table 7-5 below.

**Table 7-5: Assessment of the impacts of exploration on air quality**

| Mitigation Status | Extent | Duration | Intensity | Probability | Significance |
|-------------------|--------|----------|-----------|-------------|--------------|
| Pre mitigation    | M: -3  | M: -3    | M/L: -4   | M/H: 4      | M: -40       |
| Post mitigation   | L - 2  | L - 2    | L - 2     | L - 1       | L - 6        |

### 7.3.4 Water Resources Use

Water resources is impacted by project developments/activities in two ways - through pollution (water quality) or over-abstraction (water quantity) or at times both.

The abstraction of more water than can be replenished from low groundwater potential areas would negatively affect the local communities (communal and commercial farmers and livestock) that depend on the same low potential groundwater resource (aquifer).

The impact of the project activities on the resources would be dependent on the water volumes required by each project activity. Exploration activities use a lot of water, mainly for drilling.

However, this depends on the type of drilling methods employed (diamond drilling is more water-consuming compared to drilling methods such as reverse circulation for instance) and the type of mineral being explored for.

The drilling method to be employed for this project’s exploration activities is Reverse Circulation. The required water for exploration is about 4,000 litres per month. This water will be used for drilling purposes, as well as such cooling and washing of equipment, drinking and other domestic purposes. Given the low to medium groundwater potential of some project site areas, the Proponent may consider carting some of the water volumes from outside the area and stored in industry standard water reservoirs/tanks on site. The exact amounts of water required for proposed operations would be dependent on the duration of the exploration works and number of exploration boreholes required to make reliable interpretation on the commodities explored for. The exploration period is temporally limited, therefore, the impact will only last for the duration of the exploration activities, and ceases upon their completion.

Without the implementation of any mitigation measures, the impact can be rated as medium to high, but upon effective implementation of the recommended measures, the impact significance would be reduced to medium as presented in the Table 7-6 below.

**Table 7-6: Assessment of the project impact on water resource use and availability**

| Mitigation Status | Extent | Duration | Intensity | Probability | Significance |
|-------------------|--------|----------|-----------|-------------|--------------|
| Pre mitigation    | M - 3  | M/H - 4  | L/M - 4   | M/H - 4     | M - 44       |
| Post mitigation   | L - 1  | L - 1    | L - 2     | L/M - 2     | L - 8        |

**7.3.5 Soil and Water Resources Pollution**

The proposed exploration activities are associated with a variety of potential pollution sources (i.e., lubricants, fuel, and wastewater) that may contaminate/pollute soils, and eventually, groundwater and surface water. The anticipated potential source of pollution to water resources from the project activities would be hydrocarbons (oil) from project vehicles, machinery, and equipment as well as potential wastewater/effluent from exploration related activities.

The spills (depending on volumes spilled on the soils) from machinery, vehicles and equipment could infiltrate into the ground and pollute the fractured or faulted aquifers on site, and with time reach further groundwater systems in the area. However, it should be noted that the scale and

extent/footprint of the activities where potential sources of pollution will be handled is relatively small. Therefore, the impact will be moderately low.

Pre-mitigation measure implementation, the impact significance is low to moderate and upon implementation, the significance will be reduced to low. The impact is assessed in Table 7-7 below.

**Table 7-7: Assessment of the project impact on soils and water resources (pollution)**

| Mitigation Status | Extent | Duration | Intensity | Probability | Significance |
|-------------------|--------|----------|-----------|-------------|--------------|
| Pre mitigation    | M - 4  | M/H - 3  | M - 6     | M - 4       | M - 52       |
| Post mitigation   | L - 2  | M - 3    | L - 3     | L/M - 3     | L - 24       |

### 7.3.6 Waste Generation

During the prospecting and exploration phase, domestic and general waste is produced on site. If the generated waste is not disposed of in a responsible way, land pollution may occur on the EPLs or around the sites. The EPLs are in an area of moderate sensitivity to pollution. Improper handling, storage and disposal of hydrocarbon products and hazardous materials at the site may lead to soil and groundwater contamination, in case of spills and leakages. Without any mitigation measures, the general impact of waste generation has a medium significance. The impact will reduce to low significance, upon implementing the mitigation measures. The assessment of this impact is given in Table 7-8.

**Table 7-8: Assessment of waste generation impact**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | L/M - 2 | L/M - 2  | M - 4     | M - 4       | M - 32       |
| Post mitigation   | L - 1   | L - 1    | L - 2     | L/M - 2     | L - 8        |

### 7.3.7 Occupational Health and Safety Risks

Project personnel (workers) involved in the exploration activities may be exposed to health and safety risks such as accidents from heavy machinery or vehicles as well as mishandling of hazardous material. The heavy vehicle, equipment and fuel storage area should be properly secured to prevent any harm or injury to the Proponent's personnel or local domestic animals.



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. If machinery and equipment are not properly stored and packed, the safety risk may be a concern for project workers and local residents.

The impact is probable and has a medium significance rating. However, with adequate mitigation measures, the impact rating will be reduced to low. This impact is assessed in Table 7-9 below and mitigation measures provided.

**Table 7-9: Assessment of the impacts of exploration on health and safety**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | M - 3   | M/L - 2  | M - 6     | M/H - 4     | M - 44       |
| Post mitigation   | L/M - 2 | L/M - 2  | L - 2     | L/M - 2     | L - 12       |

**7.3.8 Vehicular Traffic Use and Safety**

The EPLs are accessible via the main B1 road that is connected to the B1 road from Mariental to Keetmanshoop and M0032 roads from Gibeon connecting to the main road B1. These are some of the main transportation routes for all vehicular movement in the area and provide access to the EPLs and connect the project area to other towns. Traffic volume will therefore increase on these district roads during exploration as the project would need a delivery of supplies and services on site.

Depending on the project needs, trucks, medium and small vehicles will frequent the area to and from exploration sites on the EPLs. This would potentially increase slow moving heavy vehicular traffic along these roads, and add additional pressure on the roads. However, transportation of materials and equipment is expected to occur on a limited schedule and only for the duration of the project. Therefore, the risk is anticipated to be short-term, not frequent, and therefore of medium significance. Pre-mitigation, the impact can be rated medium and with the implementation of mitigation measures, the significance will be low as assessed in Table 7-10.

**Table 7-10: Assessment of the impacts of exploration on road use (vehicular traffic)**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | M - 4   | M/H - 3  | L/M - 4   | M/H - 5     | M - 55       |
| Post mitigation   | L/M - 2 | L/M - 2  | L - 2     | L/M - 2     | L - 12       |

### 7.3.9 Noise and vibrations

Prospecting and exploration work (especially drilling) may be a nuisance to surrounding communities due to the noise produced by the activity. Excess noise and vibrations can be a health risk to workers on site. The exploration equipment used for drilling on site is of medium size and the noise level is bound to be limited to the site only, therefore, the impact likelihood is minimal. Without any mitigation, the impact is rated as of medium significance. To change the impact significance from the pre-mitigation significance to low rating, the mitigation measures should be implemented. This impact is assessed in Table 7-11 below.

**Table 7-11: Assessment of the impacts of noise and vibrations from exploration**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | L/M - 2 | L/M - 2  | M - 6     | M/H - 3     | M – 30       |
| Post mitigation   | L - 1   | L/M - 2  | L - 2     | L/M -2      | L - 10       |

### 7.3.10 Disturbance to Archaeological and Heritage Resources

The proposed prospecting and exploration area contain some archaeological significances, therefore, the project indicates that some sections within the boundaries of the proposed project site area are highly sensitive and archaeologically significant in terms of heritage resources that characterizes the need of a detailed investigation of any other existing archaeological/cultural materials in the areas, and they should be protected either by fencing them off or demarcation for preservation purposes or excluded from any development i.e., no exploration activities should be conducted near these recorded areas through establishment of 500 m to 1.5 km buffer zones.

Therefore, this impact can be rated as medium significance if there are no mitigation measures in place. Upon implementation of the necessary measures, the impact significance will be reduced to a lower rating. The impact is assessed in Table 7-12.

**Table 7-12: Assessment of the impacts of exploration on archaeological & heritage resources**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | M - 3   | M/H - 4  | M - 6     | M/H - 4     | M – 52       |
| Post mitigation   | L/M - 2 | L/M - 2  | L - 2     | L/M - 2     | L - 12       |

### 7.3.11 Impact on Local Roads/Routes

Exploration projects are usually associated with frequent movement of heavy trucks and equipment or machinery on local roads. Heavy trucks travelling on the local roads exert pressure on the roads, and heavy vehicles may make the roads difficult to use. This will be a concern if maintenance and care is not taken during the exploration phase. The impact would be short-term (during exploration only) and therefore, manageable.

Without any management and or mitigation measures, the impact can be rated as medium and to reduce this rating to low, the measures will need to be effectively implemented. The assessment of this impact is presented in Table 7-13.

**Table 7-13: Assessment of exploration on local services (roads and water)**

| Mitigation Status | Extent  | Duration | Intensity | Probability | Significance |
|-------------------|---------|----------|-----------|-------------|--------------|
| Pre mitigation    | M/H - 4 | M - 3    | M - 6     | M - 3       | M – 39       |
| Post mitigation   | L - 1   | L - 1    | M/L - 4   | M/L - 2     | L - 12       |

### 7.3.12 Social Nuisance: Local Property intrusion and Disturbance/Damage

The presence of some non-resident workers may lead to social annoyance to the local community. This could particularly be a concern if they enter or damage local private property. The private properties of the locals may include houses, fences, vegetation, livestock and wildlife, or any properties of economic or cultural value to the farm/landowners or users of the land. The damage or disturbance to properties may not only be private but local public properties. The unpermitted and unauthorized entry to private property may cause clashes between the affected property (land) owners and the Proponent.

The impact is rated as of medium significance. However, upon mitigation (post-mitigation), the significance will change from medium to low rating. The impact is assessed below Table 7-14).

**Table 7-14: Assessment of social impact of community property damage or disturbance**

| Mitigation Status | Extent | Duration | Intensity | Probability | Significance |
|-------------------|--------|----------|-----------|-------------|--------------|
| Pre mitigation    | M - 2  | M - 3    | M - 4     | M/H - 3     | M – 27       |
| Post mitigation   | L - 1  | L - 1    | M/L - 4   | M/L - 2     | L - 12       |

## 7.4 Cumulative Impacts Associated with Proposed Exploration

According to the International Finance Corporation (2013), cumulative impacts are defined as “impacts that result from the successive, incremental, and/or combined effects of an action, project, or activity (collectively referred to in this document as “developments”) when added to other existing, planned, and/or reasonably anticipated future impacts”.

Similar to many other exploration projects, some cumulative impacts to which the proposed project and associated activities potentially contribute, are the:

- **Impact on road infrastructure:** The proposed exploration activity contributes cumulatively to various activities such as farming activities and travelling associated with tourism and local daily routines. The contribution of the proposed project to this cumulative impact is however not considered significant, given the short duration, and spatial extent of the intended mineral exploration activities.
- **The use of water:** While the contribution of this project will not be significant, mitigation measures to reduce water consumption during exploration are essential.

## 7.5 Mitigations and Recommendations for Rehabilitation

The rehabilitation of explored (disturbed) sites will include but not be limited to the following:

- Backfilling of trenches and or pits in such a way that subsoil is replaced first, and topsoil replaced last.
- Closing off and capping of all exploration drilling boreholes. The boreholes should not only be filled with sand alone, as wind may scour the sand and re-establish the holes.
- Carrying away all waste generated from the site.
- Transporting all machinery and equipment as well as vehicles to designated offsite storage facilities.

# 8 RECOMMENDATIONS AND CONCLUSIONS

## 8.1 Recommendations

The potential positive and negative impacts of the proposed exploration activities on EPLs No. 8271, 8272, and 8288 were identified, assessed and appropriate management and mitigation measures (to negative impacts) made thereof for implementation by the Proponent, their contractors and project related employees.

Mitigation measures to identified issues have been provided, thereof, to avoid and/or minimize their significance of impacts on the environmental and social components. Most of the potential impacts were found to be of medium rating significance. With effective implementation of the recommended management and mitigation measures, a reduced rating in the significance of adverse impacts is expected from Medium to Low. To maintain the desirable rating, the implementation of management and mitigation measures should be monitored by the Proponent directly, or their Environmental Control Officer (ECO). The monitoring of this implementation will not only be done to maintain low rating, but also to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed right away.

The Environmental Consultant is confident that the potential negative impacts associated with the proposed project activities can be managed and mitigated by the effective implementation of the recommended management and mitigation measures and with more effort and commitment put on monitoring the implementation of these measures.

It is therefore, recommended that the proposed prospecting and exploration activities may be granted an Environmental Clearance Certificate, provided that:

- All the management and mitigation measures provided herein are effectively and progressively implemented.
- All required permits, licenses and approvals for the proposed activities should be obtained as required. These include permits and licenses for land use access agreements to explore and ensuring compliance with these specific legal requirements.
- The Proponent and all project workers and contractors must comply with the legal requirements governing the project and ensure that all required permits and or approvals are obtained and renewed as stipulated by the issuing authorities.
- Site areas where exploration activities have ceased are rehabilitated, as far as practicable, to their pre-exploration state.

## **8.2 Conclusion**

It is crucial for the Proponent and their contractors to effectively implement the recommended management and mitigation measures to protect the biophysical and social environment throughout the project duration. This would be done with the aim of promoting environmental

sustainability, while ensuring a smooth and harmonious existence and purpose of the project activities in the community and environment at large. It is also to ensure that all potential impacts identified in this study and other impacts that might arise during implementation are properly identified in time and addressed accordingly. Lastly, should the ECC be issued, the Proponent will be expected to be compliant with the ECC conditions as well as legal requirements governing the mineral exploration and related activities.

## 9 REFERENCES

- Booth, P. (2011). Environmental Conceptual Site Model Exercise: Source – pathway – receptor. WSP Global: Semantic Scholar.
- Kinahan, J. (2001) the presence of the past: archaeology, environment and land rights on the lower Cunene River. *Cimbebasia* 17: 23-39.
- Kinahan, J. (1997) Epupa Hydropower Feasibility Study. Phase 2, Archaeological Survey. Commissioned by Burmeister & Partners on behalf of NAMANG. QRS Project Report No. 8
- Manheimer. (2018). Retrieved from Tree Atlas of Namibia:  
<http://treeatlas.biodiversity.org.na/viewspec.php?nr=20>
- Mendelsohn. (2006). A digest of information on key aspect of Otjozondjupa and Omaheke geography. Namibia: Research and Information Services of Namibia.
- Mendelsohn. (2003). *The Atlas of Namibia: A Portrait of the land and its people*. pg 14 -18
- Mendelsohn, J. (2003). Atlas of Namibia: A Portrait of the Land and its People. Windhoek: The Ministry of Environment and Tourism of Namibia.
- Miller, R. McG. 1983a. The Pan-African Damara Orogen of South West Africa/Namibia, 431-515. In: Miller, R.McG. (Ed.) Evolution of the Damara Orogen of South West Africa/Namibia. Spec. Publ. geol. Soc. S. Afr., 11, 515 pp.
- Moll, Eugene (2013). Watter Boom is dit?. ISBN 978-1-77007-832-1.
- NSA. (2011). Retrieved from <https://digitalnamibia.nsa.org.na/>
- NSA. (2011). Digital Namibia: Namibia statistics of Namibia. Retrieved February 17, 2021, from <https://digitalnamibia.nsa.org.na/>
- SASSCAL WeatherNet, 2020. [http://www.sasscalweathernet.org/weatherstat\\_monthly\\_we.php](http://www.sasscalweathernet.org/weatherstat_monthly_we.php)
- Vigne. P (2000). Options for Livelihoods Diversification in Omaheke Region. A Report on a semi-structured interview Survey conducted by Oxfam Canada in Collaboration with the Ministry of Agriculture, Water and Rural Development. Windhoek: Oxfam Canada
- Wagner, P. A. (1910). The geology of a portion of the Grootfontein District of German South-West Africa. *South African Journal of Geology*, 13(1), 107-128.