

# DRAFT ENVIRONMENTAL SCOPING AND IMPACT ASSESSMENT

FOR THE PROPOSED MINERALS EXPLORATION FOR  
BASE & RARE METALS, INDUSTRIAL MINERALS,  
PRECIOUS METALS, AND SEMI-PRECIOUS STONES  
WITHIN **EPL 9110 near Tsumeb**

**Oshikoto & Otjozondjupa Regions**

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## NON-TECHNICAL SUMMARY

Alliance Environmental Consultancy CC (AEC) (herein referred to as the consultant) has been appointed by Philco One Hundred and Seventy-Three (Pty) Ltd (herein referred to as the proponent) to act on their behalf in obtaining an Environmental Clearance Certificate (ECC) for the proposed minerals exploration for base & rare metals, industrial minerals, precious metals, and semi-precious stones within EPL9110 near Tsumeb in the Oshikoto and Otjozondjupa regions. The project area is located approximately 16km East of Tsumeb and about 30km North of Grootfontein in the Oshikoto and Otjozondjupa Regions. The site is accessible via the D3039 or D3021 district roads from the M75 main road north and east of Tsumeb respectively. The EPL covers an area of approximately 78906 hectares in total. The licence covers portions of farmlands in the area (see **TABLE 1**).

In terms of the Environmental Management Act No.7 of 2007 and the Environmental Impact Assessment (EIA) Regulations of 2012, the project triggers listed activities that cannot be undertaken without an Environmental Clearance Certificate (ECC). An environmental clearance application will be submitted to the Ministry of Mines and Energy (MME) and the Ministry of Environmental, Forestry, and Tourism (MEFT) for approval before the commencement of the anticipated project activities.

The exploration activities will be executed through a series of stages which may involve a desktop review of existing data, regional reconnaissance assessment which includes field-based activities such as soil sampling and analysis, aerial or ground based geophysical surveys (including, but not limited to remote sensing, induced polarization, and magnetics ), geological mapping and drilling holes for exploration in selected targeted areas.

This Scoping Report (SR) has been compiled in support of an application for an Environmental Clearance Certificate and it includes an Environmental Impact Assessment section. This report describes the baseline bio-physical and socio-economic environment, legal requirements and it also documents the mitigation and control measures are also carried over into an Environmental Management Plan (EMP) which is bound to this report. The results of this scoping assessment were considered satisfactory and concluded that no further assessment was necessary for this phase of the project.

Generally, Tsumeb lies in the areas that receive higher annual rainfall in the country with more than 550mm annually, hence allowing successful intensive agricultural practices. Despite the importance of agriculture in the area, mineral occurrences in the surrounding are considered prominent. The Tsumeb climate is classified as hot semi-arid climate where the wet season is normally hot and mostly cloudy whilst the dry season is warm, windy, and clear. The hot season lasts for 3.5 months, from September to December, with an average daily high temperature above 31°C. The study area lies within the Karstveld of the Tree-and-shrub Savanna vegetation biome. The vegetation within the study site was

found to be dominated by mopane (*Colophospermum mopane*) and purple pod terminalia (*Terminalia prunioides*). Plant diversity is estimated at >500 species (Mendelsohn et al, 2002), notwithstanding the fact that terrain and water availability may contribute to local differentiation.

According to the Atlas of Namibia, nationally, the area is regarded as a relative medium - high mammal, reptile, and intermediate amphibian diverse. The soils in this area are broadly categorized to the group of leptosols and defined by a Mollic leptosols dominating soils and lies in the Owambo Groundwater basin. The water table in the area is extremely shallow; past research shows that at some places intersected at only 4m below surface. The basement in the EPL area is made up of Paleoproterozoic granitic gneiss and amphibolites which have been intruded by Mesoproterozoic granite. The company is targeting rare and base metal mineralization of the OML which can be associated with precious metals and industrial mineral mineralization.

The public is informed of the project via four (4) newspaper advertisements, public notices placed around accessible places near the project area including relevant local offices notice boards. Notification letters were sent to the affected landowners in consultation with the Ministry of Lands. Communication was also done through email with some affected landowners. There was a one-on-one face-to-face interaction held between the proponent with some farmers, however not for the purpose of the EIA process but the project in general. The draft documents were shared with the public via email for their review and commentary before submission to authorities. The concerns and comments received from the public and the local community members will form the basis for this report as well as the Draft EMP.

The identification of potential impacts included impacts that may occur during the planning, operational and decommissioning phases of the project. The following potential impacts on the socio-environment during exploration activities have been identified:

- Dust & Noise
- Health & Safety
- Visual
- Ecological
- Groundwater and surface water
- Heritage & Socio-Economic

The benefits that could arise from the project are:

- Creation of additional employment in the area.
- Generation of export and foreign exchange earnings.
- Skills transfer and training would develop the local workforce.

- Increase in knowledge on the subsurface which then contributes to development, and geoscience research.

Due to the limited scope of the proposed activities and the use of a step-by-step approach in advancing exploration operations, the overall severity of potential environmental impacts of the proposed project activities on the receiving environment will be of low to medium magnitude, temporally and permanent duration, localized extent, and high probability of occurrence. All impacts are provided with mitigation measures in order to minimize or avoid them to acceptable degrees provided that the measures are taken into consideration.

Based on the conclusions of this EIA Report, it is thus recommended that an Environmental Clearance Certificate be provided for the planned project activities. When implementing the proposed program, the Proponent shall consider the following critical requirements:

- Where applicable, the Proponent will negotiate Access Agreements with landowners/authorities.
- The Proponent is responsible for obtaining all additional permits that may be required.
- In accordance with all applicable national rules, the Proponent shall comply with all terms of the EMP.
- In cases where baseline information, national or international guidelines, or mitigation measures have not been supplied or do not adequately address the site-specific project effect, the Proponent must use the precautionary approach/principles.



## LIST OF ABBREVIATIONS

<b>AEC</b>	Alliance Environmental Consultancy
<b>BID</b>	Background information Document.
<b>CV</b>	Curriculum Vitae
<b>°C</b>	Degree Celsius
<b>DDH</b>	Diamond Drill Hole
<b>DEA</b>	Directorate of Environmental Affairs
<b>DoF</b>	Directorate of Forestry
<b>DWA</b>	Directorate of Water Affairs
<b>EA</b>	Environmental Assessment
<b>ECC</b>	Environmental Clearance Certificate
<b>EIA</b>	Environmental Impact Assessment
<b>EMA</b>	Environmental Management Act No 7 of 2007
<b>EMP</b>	Environmental Management Plan
<b>EPL</b>	Exclusive Prospecting Licence
<b>ESIA</b>	Environmental Scoping and Impact Assessment
<b>HSE</b>	Health Safety and Environment
<b>IAPs</b>	Interested and Affected Parties
<b>IUCN</b>	International Union for Conservation of Nature
<b>km</b>	Kilometers
<b>MAWLR</b>	Ministry of Agriculture, Water and Land Reform
<b>MEFT</b>	Ministry of Environment Forestry and Tourism
<b>MME</b>	Ministry of Mines and Energy
<b>MSDS</b>	Material Safety Data Sheet
<b>NBRI</b>	National Botanical Research Institute
<b>OML</b>	Otavi Mountain Land
<b>WHO</b>	World Health Organization
<b>OSHA</b>	The Occupational Safety and Health Administration
<b>NCAA</b>	Namibia Civil Aviation Authority
<b>PPP</b>	Public Participation Process
<b>UNCCD</b>	United Nations Convention to Combat Desertification
<b>RC</b>	Reverse Circulation
<b>SR</b>	Scoping Report
<b>ToR</b>	Terms of Reference

## GLOSSARY OF TERMS

<b>Alternatives</b>	A possible course of action, in place of another, that would meet the same purpose and need but which would avoid or minimize negative impacts or enhance project benefits. These can include alternative locations/sites, routes, layouts, processes, designs, schedules and/or inputs. The “no-go” alternative constitutes the ‘without project’ option and provides a benchmark against which to evaluate changes; development should result in net benefit to society and should avoid undesirable negative impacts.
<b>Competent Authority</b>	A body or person empowered under the local authorities act or Environmental Management Act to enforce the rule of law.
<b>Environment</b>	As defined in the Environmental Assessment Policy and Environmental Management Act - “land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, palaeontological or social values”.
<b>Environmental Assessment (EA)</b>	Process of assessment of the effects of a development on the environment.
<b>Environmental Management Plan (EMP)</b>	A working document on environmental and socio-economic mitigation measures, which must be implemented by several responsible parties during all the phases of the proposed project.
<b>Evaluation</b>	The process of ascertaining the relative importance or significance of information, the light of people’s values, preference and judgements in order to make a decision.
<b>Hazard</b>	Anything that has the potential to cause damage to life, property and/or the environment. The hazard of a particular material or installation is constant; that is, it would present the same hazard wherever it was present.
<b>Interested and Affected Party (I&amp;AP)</b>	Any person, group of persons or organisation interested in, or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.
<b>Mitigate</b>	The implementation of practical measures to reduce adverse impacts.
<b>Proponent (Applicant)</b>	Any person who has submitted or intends to submit an application for an authorisation, as legislated by the Environmental Management Act no. 7 of 2007, to undertake an activity or activities identified as a listed activity or listed activities; or in any other notice published by the Minister or Ministry of Environment & Tourism.

<b>Public</b>	Citizens who have diverse cultural, educational, political and socio-economic characteristics. The public is not a homogeneous and unified group of people with a set of agreed common interests and aims. There is no single public. There are a number of publics, some of whom may emerge at any time during the process depending on their particular concerns and the issues involved.
<b>Scoping Process</b>	Process of identifying: issues that will be relevant for consideration of the application; the potential environmental impacts of the proposed activity; and alternatives to the proposed activity that are feasible and reasonable.
<b>Significant Effect/Impact</b>	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>Stakeholder Engagement</b>	The process of engagement between stakeholders (the proponent, authorities and IAPs) during the planning, assessment, implementation and/or management of proposals or activities. The level of stakeholder engagement varies depending on the nature of the proposal or activity as well as the level of commitment by stakeholders to the process. Stakeholder engagement can therefore be described by a spectrum or continuum of increasing levels of engagement in the decision-making process. The term is considered to be more appropriate than the term "public participation".
<b>Stakeholders</b>	A sub-group of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term therefore includes the proponent, authorities (both the lead authority and other authorities) and all interested and affected parties (I&APs). The principle that environmental consultants and stakeholder engagement practitioners should be independent and unbiased excludes these groups from being considered stakeholders.

## 1. INTRODUCTION

Alliance Environmental Consultancy CC (AEC) has been appointed by Philco One Hundred and Seventy-Three (Pty) Ltd to act on their behalf in obtaining an Environmental Clearance Certificate (ECC) for the proposed minerals exploration for base & rare metals, industrial minerals, precious metals, and semi-precious stones within EPL9110 near Tsumeb. The potential environmental impacts associated with the proposed exploration activities will be assessed in this report and an Environmental Management Plan will be provided (**Appendix B**).

No specialist survey of the physical, chemical and biological characteristics of the actual site and surroundings was conducted. However, a number of studies have been completed for other projects around the vicinity of the project area. Though not a site-specific baseline study as such, this report represents a reference point for comparing any current and future data collected.

### 1.1. PROJECT LOCALITY

The project area is located approximately 16km East of Tsumeb and about 30km North of Grootfontein in the Oshikoto and Otjozondjupa Regions. The site is accessible via the D3039 or D3021 district roads from the M75 main road north and east of Tsumeb respectively (**FIGURE 1 & FIGURE 2**). The EPL covers approximately an area of 78906 hectares in total. The licence covers portions of farmlands (**TABLE 1**), and **FIGURE 3** renders a map of the EPL area relative to the farms.

TABLE 1 – FARMS OVERLAPPING EPL 9110

FARM NO.	FARM NAME						
540	VANADIA	826	OULAP	706	CLEVELAND	1232	N/A
541	WINDPOORT	827	KLIPRAND	707	ABENAB	1233	OLD SMITHFIELD
542	KARUCHAS REST	828	DON TSEBEB	714	DULUTH	1278	CUXHAVEN
659	AARHUIS	829	EMMANUEL	756	GROSSILMENAU	1342	BRISBANE
660	ACCRA	830	AANDVELD	825	EXCELSIOR	1343	GROOT BOSTON
662	ADEN	831	SWERWERSTROOM	698	DEAL	837	PANORAMA
669	BIRKENHEAD	832	AANDRUS	700	DETROIT	837	ETHANIE
670	BOMBAY	833	CALAIS	701	DOVER	837	BETHANIE
676	MOOIDRAAI	834	MIDDELIN	702	DEVON PORT	838	ELANDSVLAK
694	COLOMBO	835	UULKRAAL	703	DRONTHEIM	1147	STARNBERG
695	COOKTOWN	835	BRAKKIES	705	CHRISTIANA	1149	NAWIB
696	CORK	836	EBENEZER				

The proponent applied for the EPL area through the MME on 31 October 2022. The EPL is pending approval as it is subject to an ECC by MEFT which is the reason for conducting this environmental scoping and impact assessment.

The **FIGURE 1** below shows the locality of the EPL as displayed on the Namibia Mining Cadastral Portal that can be accessed through this link <https://portals.landfolio.com/namibia/>. The corner coordinates of the EPL are provided in **TABLE 2**.

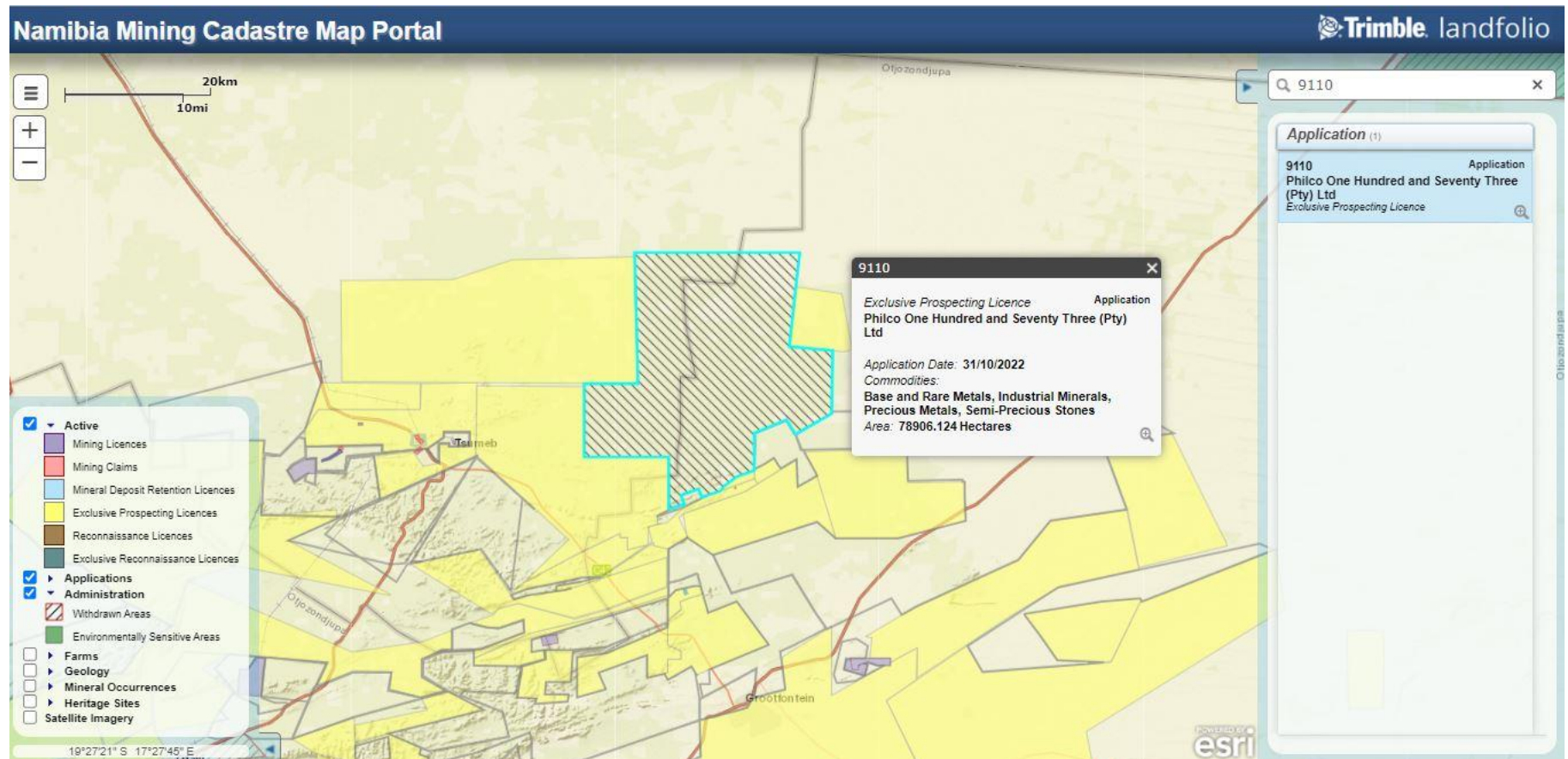


FIGURE 1 - LOCALITY DISPLAY ON THE MINING CADASTRE PORTAL (MME,2023) <https://portals.landfolio.com/namibia/>.

TABLE 2 - CORNER COORDINATES FOR THE EPL

ID	LATITUDE	LONGITUDE		LATITUDE	LONGITUDE		LATITUDE	LONGITUDE
<b>1</b>	-18.999317	17.957203	<b>10</b>	-19.280379	18.0926100	<b>19</b>	-19.256063	17.889912
<b>2</b>	-18.999608	18.176300	<b>11</b>	-19.292246	18.0764460	<b>20</b>	-19.164218	17.890282
<b>3</b>	-19.117619	18.162620	<b>12</b>	-19.299281	18.0703590	<b>21</b>	-19.164617	17.961144
<b>4</b>	-19.122401	18.220082	<b>13</b>	-19.307541	18.0459310			
<b>5</b>	-19.201562	18.219816	<b>14</b>	-19.297030	18.0422500			
<b>6</b>	-19.227700	18.170696	<b>15</b>	-19.304863	18.0184910			
<b>7</b>	-19.209812	18.159018	<b>16</b>	-19.315642	18.0224300			
<b>8</b>	-19.226063	18.116775	<b>17</b>	-19.321305	18.0028860			
<b>9</b>	-19.272577	18.1163400	<b>18</b>	-19.256065	18.002716			

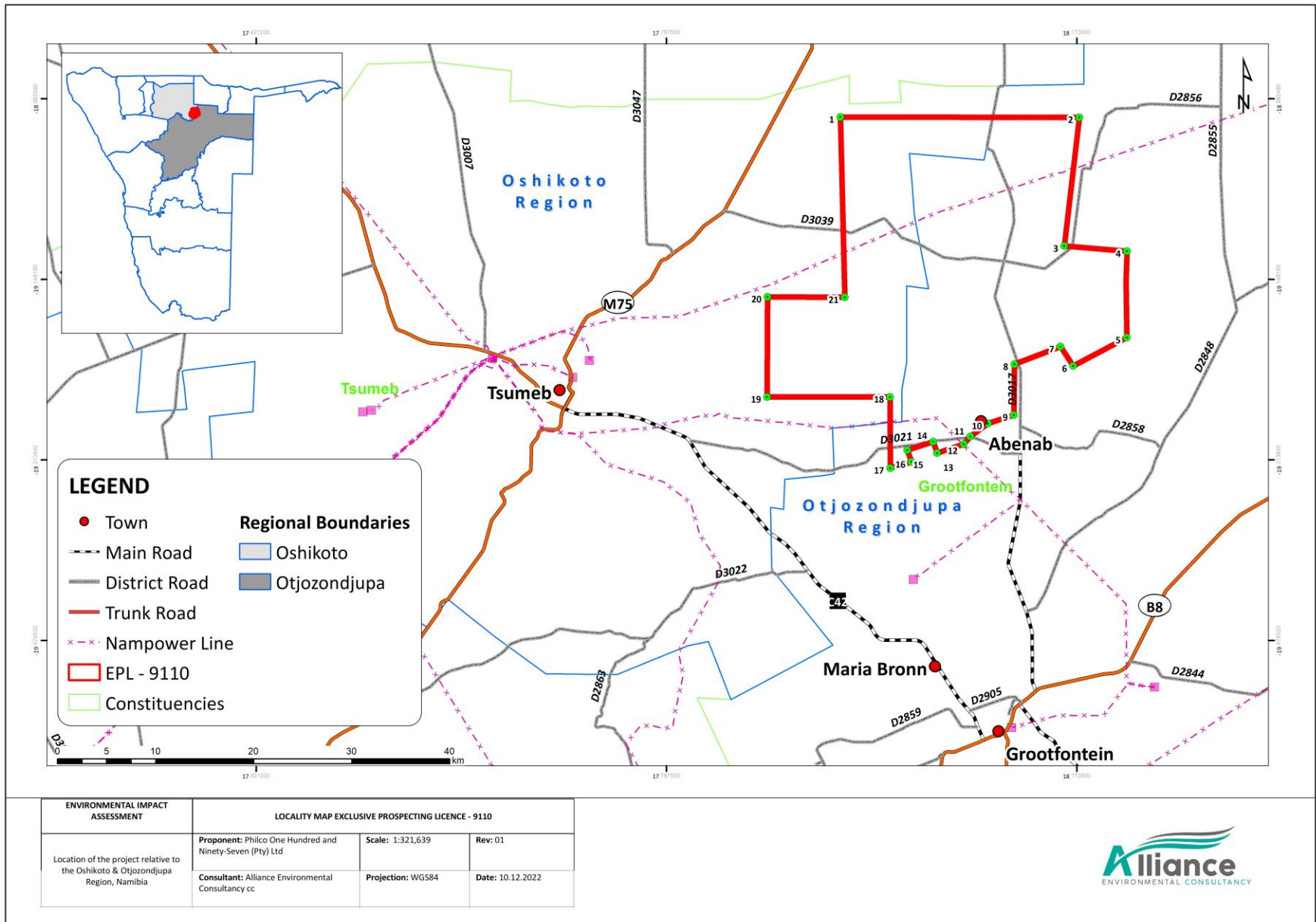


FIGURE 2 – LOCALITY MAP AND INFRASTRUCTURE OF THE PROPOSED PROJECT

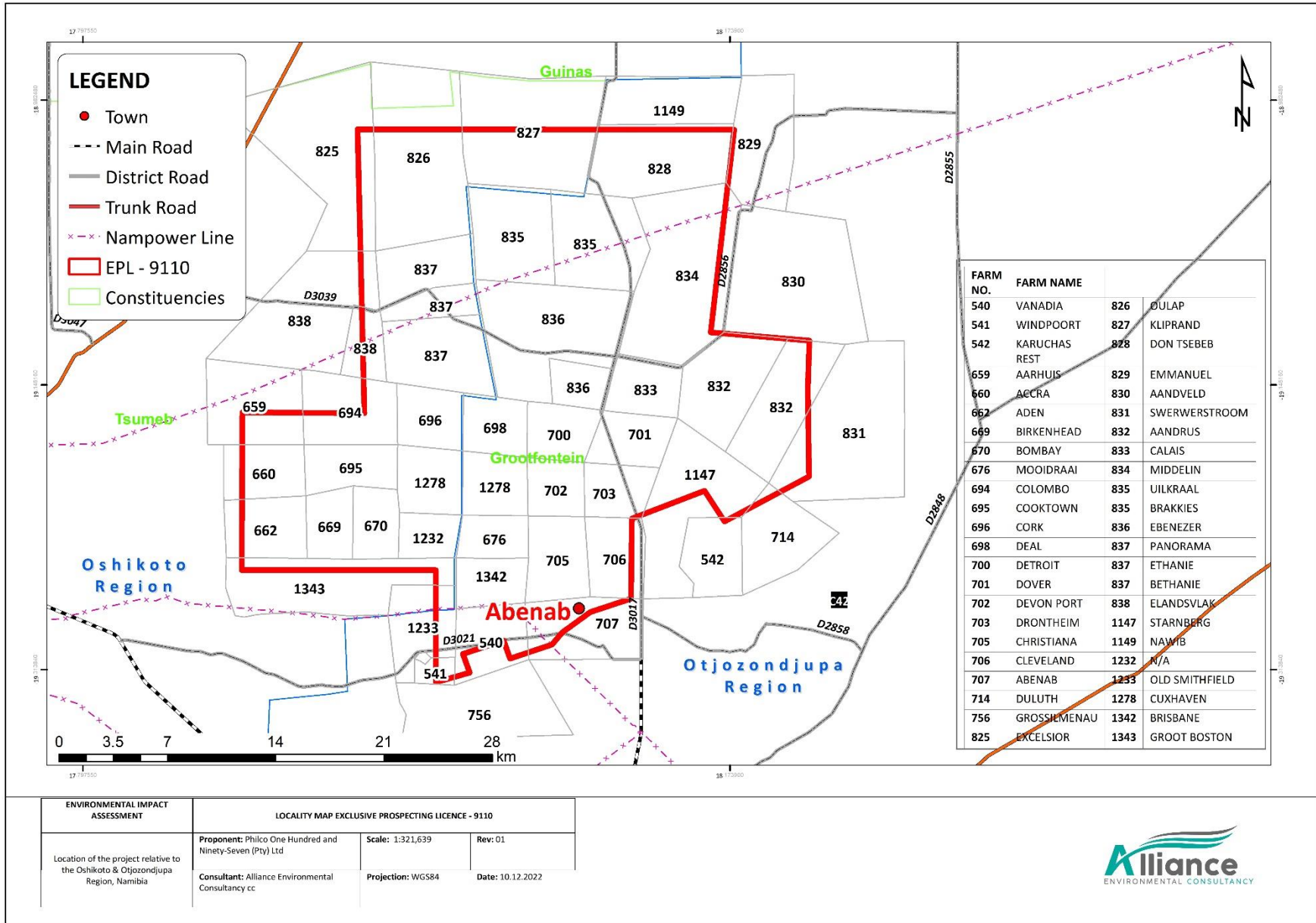


FIGURE 3 - FARMS OVERLAPPING THE EPL AREA



## **1.2. PROJECT MOTIVATION/RATIONALE**

Mining activities in Namibia are the biggest contributor to the country's revenue and mining is one of the largest economic sectors in the country. Although for exploration activities there are limited social benefits associated with the project, the following are the possible benefits of the proposed project activities:

- Contributions to annual license fees to the government through the MME.
- Payments of lease agreements and services rendered.
- Value adding to Namibian raw materials.
- Provision of contractual employment opportunities.
- Increase in knowledge on the subsurface which then contributes to development, and geoscience research.
- Contribute to the socio-economic development of the local area and region,
- Direct capital investment into Oshikoto and Otjozondjupa Regions

Should a feasible resource be located, it could provide social and economic development within the region and the country, subject to a Mining Licence (ML) being issued by MME and a separate, comprehensive (full) Environmental Impact Assessment (EIA) process.

## **1.3. PROJECT LIMITATIONS**

AEC assumes that all information and technical data for the Project relevant to the scope of the environmental scoping procedure provided by the Proponent are true and correct, and that all necessary information has been disclosed.

This report is compiled as a scoping assessment and no other specialist studies were done as part of this assessment. This is because the consultants believed that the magnitude of the proposed activities and the existence of similar projects in the vicinity can be used to sufficiently address these potential impacts from the proposed project under the impact assessment section of the SR and mitigation measures provided accordingly. Reviewed literature, and professional experience from similar studies in the Regions and elsewhere were also considered when addressing these effects. The project specific information used in this document is as provided by the Proponent, consultants experience and relevant literature reviewed/research.

## **1.4. PURPOSE OF THE DOCUMENT**

In terms of the Environmental Management Act No.7 of 2007 and the Environmental Impact Assessment (EIA) Regulations of 2012, the project triggers listed activities that cannot be undertaken without an Environmental Clearance Certificate (ECC). An environmental clearance application will be submitted to the Ministry of Mines and Energy (MME) as the competent authority and the Ministry

of Environment, Forestry, and Tourism (MEFT) as the issuing authority to make a decision as to whether an environmental clearance certificate can be issued or not before the commencement of the anticipated project activities.

The environmental scoping assessment report aims to address the following:

- i. Identification of potential positive and negative environmental impacts.
- ii. Evaluation of the nature and extent of potential environmental impacts
- iii. Identify a range of management actions that could mitigate the potential impacts to required levels.
- iv. Consult relevant stakeholders regarding the proposed development.
- v. Provide sufficient information to the MEFT to make an informed decision regarding the proposed project.

The provision of the listed activities are as follows:

#### **MINING AND QUARRYING ACTIVITIES**

3.1 *The construction of facilities for any process or activities which requires a license, right, or other forms of authorization, and the renewal of a license, right, or any other form of authorization in terms of Minerals (Prospecting and Mining Act), 1992.*

3.2 *Other forms of mining or extraction of natural resources whether regulated by law or not.*

3.3 *Resource extraction, manipulation, conservation, and related activities.*

#### **FORESTRY ACTIVITIES**

4.1 *The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorization in term of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.*

#### **HAZARDOUS SUBSTANCE TREATMENT, HANDLING AND STORAGE**

9.1 *The manufacturing, storage, handling, or processing of a hazardous substance defined in the Hazardous Substances Ordinance, 1974.*

## **1.5. TERMS OF REFERENCE**

The Terms of Reference (ToR) for the proposed project are based on the requirements set out by the Environmental Management Act (EMA) (2007) and its EIA Regulations (2012). The scope of this assessment is to identify and evaluate potential environmental impacts emanating from the proposed activity. Data has been compiled by making use of literature, and the information provided by the proponent.

The process covered the following steps, as divided into the sections below. Each section describes what was undertaken.

### **1.5.1. SCREENING PHASE (DECEMBER 2022 – JANUARY 2023)**

This involves project initiation discussions with the proponent to finalize the TOR for the study. The consultants identify potential environmental aspects and potential impacts that may be relevant to the project. Once the screening phase is concluded the scoping process is initiated.

### **1.5.2. SCOPING PHASE (FEBRUARY TO MARCH 2023)**

This phase constitutes the identification of further potential environmental issues associated with the proposed project, a description of the receiving environment, assessment of potential environmental impacts, and develop management and mitigation measures.

Other activities that can be conducted at this phase include site visits and identification as well as communication with potential affected parties and the compilation of Scoping Report and EMP. The reports are then distributed to Interested and Affected Parties (I&APs) for comment. This phase is further discussed under **Chapter 2**.

### **1.5.3. LEGAL FRAMEWORK**

All legislation, policies and guidelines that had reference to the proposed project are listed under **Chapter 5**. The activities for which clearance is required for the project were extracted from the EMA Regulations. As per legal requirements, any exploration activity requires the Environmental Commissioner within the Ministry of Environment & Tourism to render an Environmental Clearance Certificate (ECC) in terms of the Environmental Management Act, No 7 of 2007 (EMA).

### **1.5.4. AIM OF THE REPORT**

The aim of this report is to provide details on the proposed planning, operational, decommissioning and closure activities that will enable decision makers to make informed decisions regarding the development from an environmental perspective.

### 1.5.5. PUBLIC PARTICIPATION PROCESS

Inform I&APs and relevant authorities of the details of the proposed development and provide them with a reasonable opportunity to participate during the process.

Stakeholder engagement through the public consultation process, is described in a later section of this report (**Chapter 7**).

### 1.5.6. ENVIRONMENT DESCRIPTION

The 'environment' is defined in the Environmental Assessment Policy and Environmental Management Act as "land, water and air; all organic and inorganic matter and living organisms as well as biological diversity; the interacting natural systems that include components referred to in sub-paragraphs, the human environment insofar as it represents archaeological, aesthetic, cultural, historic, economic, paleontological or social values".

Relevant environmental data was compiled by making use of secondary information and stakeholder consultation. The report identified existing environmental (both ecological and socio-economic) conditions of the receiving environment in order to determine environmental sensitivities. Information regarding the biophysical and socio-cultural environment was sourced from a number of studies previously done in and around the study area. Please refer to **Chapter 6** and the document reference list for the sources of information consulted.

### 1.5.7. IMPACT ASSESSMENT

The scoping and assessment process aims to guide and promote sustainable and responsible development and not to discourage development. Potential environmental impacts and associated social impacts were identified and addressed in the report (**Chapter 9**). The EAP has assessed likely positive and negative impacts, including environmental and social impacts at the local and regional (Oshikoto and Otjozondjupa Regions) and national (Namibia) levels using the Hacking Assessment Method.

Possible enhancement measures have been listed for those positive impacts while prevention, mitigation and rehabilitation measures have been provided for negative impacts. The environmental assessment was conducted to comply with Namibia's Environmental Management Act, the requirements of Local Authorities and all other legal requirements applicable to the development and Namibia.

The assessment process involved merging various information streams into a description of the environment and the proposed project. If the environmental commissioner finds that the assessment

of potential impacts and the proposed mitigation measures proposed in this report, are acceptable, an ECC may be awarded.

#### **1.5.8. ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

This task involved the drafting of a standalone document that outlined the management, monitoring and mitigation measures that will avoid, minimise and/or mitigate potentially negative impacts. In some cases, remediation and rehabilitation will be required. The ECC should refer to the EMP contained in **Appendix B**, and the conditions stipulated therein, thus rendering the EMP a legally binding document to which the proponent must adhere.

#### **1.6. THE ENVIRONMENTAL CONSULTANT**

Alliance Environmental Consultancy CC (AEC) (hereinafter referred to as consultant) is an independent consultant developed to assist clients to meet environmental legislative requirements, relevant standards and uphold environmental safety throughout project developments and operation. We assess and monitor the social and environmental impacts of projects related to biomass, mining, energy, tourism, and other sectors. Our wide range of capabilities, disciplines, and services are fundamentally based on proactively delivering advice and solutions with the outlook of sustainability. This is done by awarding our clients the responsibility and opportunity to make unique differences in their industries. The consultant was assisted by Mr. Charles Adam and Ms. Lydia Kapolo who is an intern. The detailed CV of the team is presented in **Appendix A**.

AEC is in no way a direct affiliate of the applicant and has no personal or financial interest in the proposed project other than reasonable compensation for the professional services provided.

## 2. THE EIA APPROACH AND METHODOLOGY

The EIA and EMP methodology applied for this project will take into account the provisions of the Environmental Impact Assessment (EIA) Regulations, 2012, and the Environmental Management Act (EMA) Act No. 7 of 2007. The process followed is detailed below and in **FIGURE 4**.

### PHASE 1 – ENVIRONMENTAL SCREENING

#### **Project initiation and registration with the Competent Authority**

- This involves meeting with the client and discussing timeframes, logistics and project descriptions.
- Basic desktop site baseline analysis and compilation of a Background Information Document (BID)
- Project registration with Department of Environmental Affairs (DEA) to be done on the EIA online portal system.
- After the project is registered, the environmental commissioner will advise whether a full EIA or scoping assessment is required for the project, the required documents are outlined on the online system.

### PHASE 2: ENVIRONMENTAL SCOPING ASSESSMENT INCLUDING PUBLIC PARTICIPATION PROCESS (PPP)

- An extensive desktop baseline study and review for the area will be undertaken using remote sensing to identify and describe potential sites that are likely to be impacted by the project before on ground site verification.
- The consultants may conduct a site visit during this stage to form a basis for the assessment and determine the real sensitivity of the surrounding biophysical and socio-economic environment.
- The information obtained during the site visit (if done) will be supplemented by a literature review and will be used by the environmental consultant to: (a) Determine the actual/real risks associated with the project activities, (b) Provide practical mitigation measures to minimize the risks; and (c) Make recommendations for further studies, should it be required.

#### **Public Consultation Process and stakeholder engagement (21 Days)**

- Public consultation is an important stage of the EIA process as it ensures public involvement. The public consultation process begins with newspaper advertisement (Minimum two (2) local newspapers twice for two consecutive weeks), site notices to be placed at easily accessible places around the project area/town, radio announcements, when necessary, through respective constituency offices (especially in remote areas where newspapers might not reach on time) and then public meetings when critical. This is being done to provide the public with

the opportunity to be involved in the process, provide their views and input regarding the proposed activities in the area.

- The EAP approaches different organizations and government institutions to gather information on potential stakeholders' contact details.
- During this stage, potential stakeholders (local governments, constituency offices, farmers etc.) are identified and made aware of the project as advised in writing. Invitation letters and or emails will be sent to the identified I&APs. All I&APs contact details will be collected for future communications related to the project progress.
- The Background Information Document (BID) prepared in phase 1 will be shared with all identified and registered I&APs during this period. The BID usually contains summarized project information such as the project description of activities, project motivation, potential impacts, and EIA process followed. This document will be shared via email or delivered in hardcopy to the relevant/applicable parties. Other social media platforms such as WhatsApp will also be utilized in this case.
- All comments, inputs, issues and/ or concerns raised by I&APs during the process will be recorded for consideration in the environmental assessment report and development of the EMP.

### **PHASE 3: ENVIRONMENTAL REPORTING – ENVIRONMENTAL SCOPING ASSESSMENT REPORT (ESAR) AND ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

- This stage will include data reduction and analysis using appropriate techniques to produce suitable project results for interpretation and discussion. This stage will entail consolidation of the findings in the form of a report that can be presented to the client for review and comments. An EMP will be drafted to mitigate and manage all impacts identified in the scoping report.
- After approval of the documents by the Client, the draft ESAR and EMP will be prepared for circulation to the public (I&APs) for comments over a period of 7-14 days.
- All comments are consolidated and included in the reports and the ESAR and EMP are finalized for submission to the competent authority (Ministry of Mines and Energy) and issuing authority (MEFT).
- The registered and identified I&APs will be informed that the final documents have been submitted to the authorities for decision making and that for any further comments, they can directly contact the DEA. Furthermore, the DEA provides another 14 days period for public participation on the online portal in this regard.

### **PHASE 4: FOLLOW-UP WITH THE COMPETENT AUTHORITY UNTIL FEEDBACK IS GRANTED**

Should the DEA require further information, the EAP will be alerted.

FIGURE 4: BELOW PROVIDES A SIMPLIFIED EIA PROCESS FLOWCHART

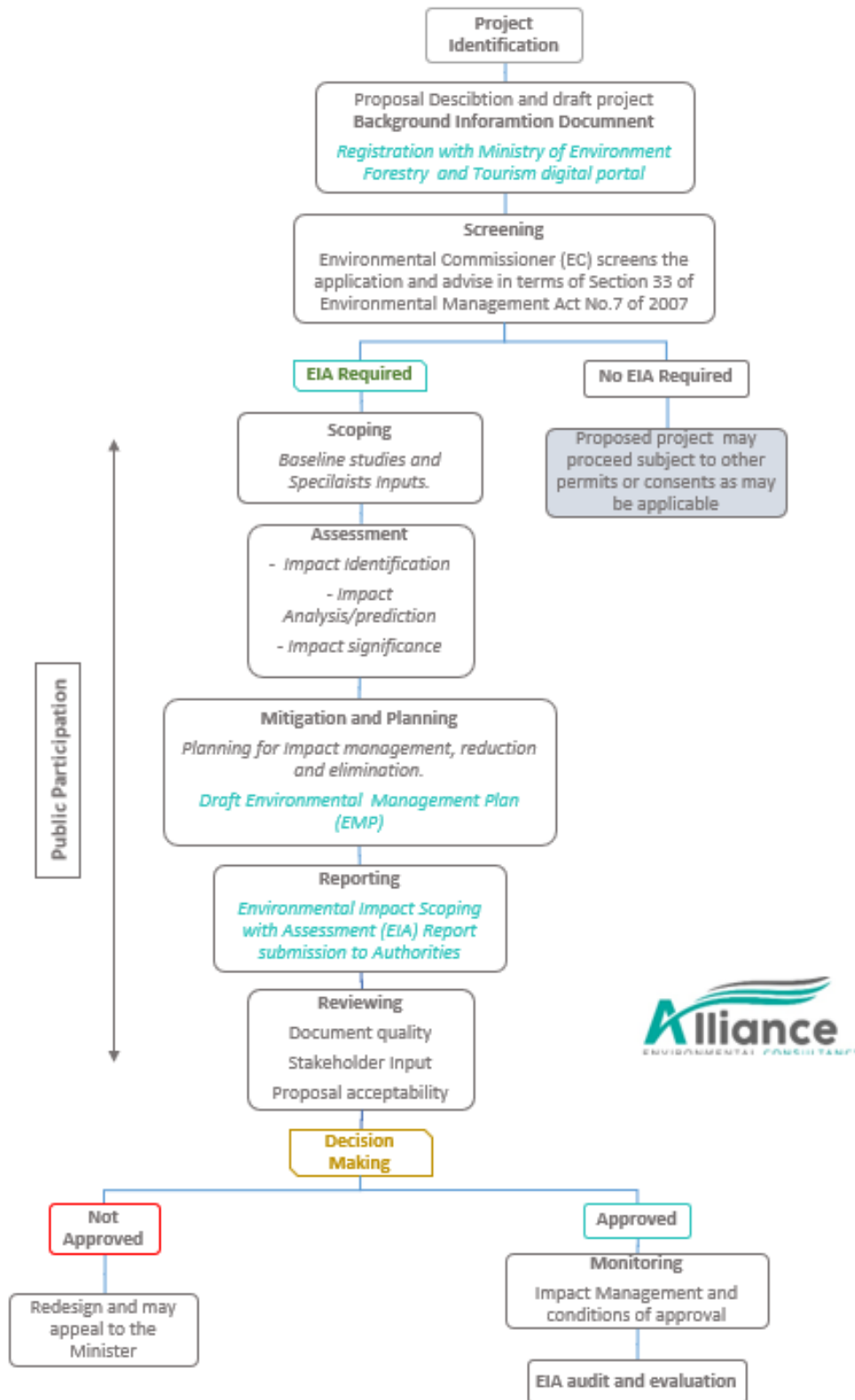


FIGURE 4 - EIA FLOW CHART BY AEC



### **3. PROJECT DESCRIPTION**

#### **3.1. PROJECT PLAN AND ACTIVITIES**

The proponent wishes to conduct an exploration program on EPL 9110 for base & rare metals, industrial minerals, precious metals, and semi-precious stones. Once granted by MME, the licence will be valid for three years with possible renewal after this period. The commencement of the project is planned as soon as the environmental clearance certificate and physical EPL licence has been issued. The exploration program will be carried out as outlined in more detail below:

##### **3.1.1. PLANNING PHASE**

This will incorporate the procurement of all required permits and agreements with various state and parastatal agencies as well as surface landowners/land custodians. These will result in various agreements to be entered into between the proponent and the respective parties.

Possible parties that will be/are being consulted include the following:

- Ministry of Mines and Energy (MME)
- Ministry of Environment Forestry & Tourism (MEFT, this application)
- Respective Regional Councils
- Ministry of Agriculture, Water & Land Reform (MAWLR)
- Landowners/ Land custodians

##### **3.1.2. INITIATION/PRE-OPERATIONAL PHASE**

###### *i. Accommodation*

During this phase, a provisional field camp is planned with basic infrastructure as required for operations within the boundaries of the EPL, such providing accommodation for approximately 5 to 10 (depending on the labour needs) on site. Alternatively, the workers can commute from the nearby town/settlement or any accommodation places that may be deemed sufficient by the proponent. Any infrastructure will be erected with the permission of the land custodians in the area, i.e., the farmers. The accommodation area will be demarcated to limit the movement of equipment and personnel beyond the footprint of the camp area, and also to limit the movement of animals onto the site from the surrounding.

###### *ii. Access*

Existing access roads will be utilized and if need be, upgraded to accommodate heavy motor vehicles and operational machines. The selective clearing of vegetation in areas designated for prospecting will be minimal from the foreseen operations. Usually, land is cleared at areas where drilling operations

will be conducted or where the camping area will be erected. When lateral expansion is required the removal of vegetation will be done in association with the Directorate of Forestry that issues the relevant permits.

*iii. Waste management*

Solid waste will be removed off site and taken to the nearest registered dumpsite (Tsumeb). The proponent intends to use portable toilets at work sites, when necessary. Alternatively, toilets may be established when the staff resides at the working area, with septic tanks to be emptied regularly using a tanker truck which removes the sewerage and takes it to the municipal sewerage works. For a longer-term field camp arrangement, a French drain system could be devised and constructed.

### **3.1.3. OPERATIONAL SUPPORT SERVICES**

*i. Water supply*

Water supply sources being considered are either.

- Ground water abstraction; and
- NamWater

The proponent does not expect to use much water, as the only main activities are for camp use and for drilling (approximately 2000L – 2500L or less a month). It is suggested that amounts of water can be sourced from the nearest NamWater supply scheme or from one of the surrounding neighbors or community boreholes and then be trucked to the exploration site and camp, this is the preferred option.

If for any reason more water is required then the proponent suggests abstraction of ground water, which can be done at minimal extraction cost, a borehole can be sunk to augment supply volumes or an existing borehole can be utilized with the owner's permission. However, for this option groundwater exploration would need to be undertaken followed by the required permit application process with the Directorate of Water Affairs (DWA).

*ii. Power supply*

No infrastructure development to get electricity from the national grid has been planned. All mobile equipment is diesel driven and self-propelled. Static equipment will use electricity generated by diesel generators. A small field of photovoltaic panels is also envisaged for power generation in the medium term.

*iii. Onsite fuel storage*

Diesel storage at the site will be only temporary and intermittent during drilling and bulk sampling operations. Approximately 200 – 400 litres of diesel will be stored in a bunded fuel tank system, conveniently placed and accessible for deliveries. This facility will be of modern construction, either double-skinned or 110% bunded to ensure spills are prevented.

Delivery systems will use sealed fittings to prevent spillage. The fuel facility is to be actively manned. Standardized spill kits and reporting systems will be in place to deal with any hydrocarbon spills. Contaminated soil will be transferred to a remediation site, which is specifically designed for such treatment.

### **3.1.4. PROSPECTING/OPERATIONAL PHASE ACTIVITIES**

The company is targeting rare and base metal mineralization of the Otavi Mountain Land (OML) which can be associated with precious metals and industrial mineral mineralization's. More than 620 mineral occurrences are known in the area, with the majority being located in the Gauss Formation of the Abenab Subgroup and in the Elandshoek Formation of the Tsumeb Subgroup. Operations are scheduled to operate 12 hours a day (6am to 6pm) seven days per week. The personnel will be transported to and from the operational site by company transport.

#### *i. Vehicle, machinery, and associated equipment*

Main equipment types to be used will include 4X4 bakkies, drill rigs (Reverse Circulation (RC) or Diamond Drill Hole (DDH)), excavators and front-end loaders to be used if overburden topsoil removal is required, water tankers for the camp site and to support drilling operations, portable geophysical equipment, sampling equipment (bags, sieves, spades etc.). The aforementioned will be stored in designated areas at the accommodation place.

The projected mineral exploration activities during prospecting follow a staged approach. The different work aspects and consecutive phases are summarized as follows:

#### *ii. Desktop studies including; geological mapping.*

High resolution data are purchased from the MME to assist in a desktop review of existing historic geological exploration reports data as well as all past research conducted in the general area to see if there are any prospective targets. The data available is used to understand the background of the area through remote sensing and topographic surveys. This involves a review of geological maps of the area and on-site ground traverses and observations. The maps and data will be updated where relevant information has been obtained.

#### *iii. Geophysical survey*

The geophysical surveys include the collection of information of the substrata, by ground and airborne techniques, through sensors such as radar, magnetic and electromagnetic to detect any

mineralization in the area. Ground geophysical surveys would be carried out using sensors mounted on vehicles or carried by hand. Aerial geophysical surveys would be carried out using sensors mounted on low flying aircraft or unmanned drones. The airborne geophysical technique tries to measure electrical conductivity and magnetic variations of the ground using measuring instruments suspended underneath a helicopter, drone or aircraft. Where necessary, permits will be obtained from Namibia Civil Aviation Authority (NCAA) to support the airborne geophysical surveys. Generally, these techniques are not intrusive in terms of impacts towards the environment.

iv. *Geochemical sampling*

This stage incorporates geochemical analyses, geochemical soil sampling programs, and additional ground geophysical surveys.

For soils sampling, it is done at depths of at least 10 - 30cm therefore firstly removing the upper surface of the soil that will be filled back once a sample is collected. The samples are collected into bags of approximately 100 - 500grams. Usually, soil samples are to be collected where drainage and catchment basins are poorly developed. Sampling can be carried out in up to 8 teams, each consisting of a field technician or geologist and local field assistants.

Once the exercise concludes, the samples are collected and sent to an analytical laboratory (as preferred by the proponent) for geochemical trace element analysis to determine if sufficient quantities of the desired mineralization are present.

Using the results obtained through the geophysical and geochemical surveys, a guided map is created. When target areas are determined, it may be necessary for drill pads to be established. Efforts will be made to limit or minimize the amount of clearing of trees and shrubs, including by considering alternative sites for drilling. Should sensitive/protected species be present in the target area a trees removal and clearing permit is applied for through the Department of Forestry (DoF).

v. *Exploration Drilling*

Exploration drilling is the process of sampling rock below surface from an area, where it is suspected that there may be mineralization. The most commonly used drilling techniques are Reverse Circulation Drilling (RC) or Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve.

Exploration Diamond Drilling differs from other geological drilling in that a solid core is extracted from depth, for examination on the surface. The key technology of the diamond drill is the actual diamond bit itself. It is composed of industrial diamonds set into a soft metallic matrix. The drill produces a "core" which is logged, photographed and which can be split longitudinally for sampling purposes. Half of the split core is assayed while the other half is permanently stored for future use and reference.

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 quick and cheap compared to Diamond Drilling. The RC technique is common for infill drilling, at a much higher density or narrower spacing to allow extrapolations of the rock units. Usually, the drill area is approximately 15 m x 15 m and during the drill process is off-limits to those not part of the exploration team for safety reasons.

Once the samples are analysed at the laboratory the information may be used for resource modelling and delineation of mineral resources for further study. These may develop into mining targets after several further phases of work over 3-5 years of evaluation.

*vi. Advanced prospecting/exploration*

In the advanced stage of exploration, larger amounts of rock sample material may be required for performing processing trials and for metallurgical testing programs. Ground conditions and geotechnical parameters also need to be established for planning and costing purposes.

Bulk sampling for metallurgical tests and processing trials will be done to complement the material obtained during drilling. Possibly, pits or trenches are to be dug / excavated to a depth of 5m, and several hundred cubic meters of samples are taken. The location of the pits will depend on the drilling results and will be in close proximity to where drilling has occurred. The size of the sample required depends on the nature of the mineralization as observed from drilling and sampling.

*vii. Pre-feasibility and feasibility studies*

If the detailed exploration activities yield positive results, the exploration data will be compiled into a pre-feasibility report, and upon positive results from further work, a detailed feasibility study will be conducted on the identified site-specific area where a mineral deposit is defined.

Additional detailed and site-specific drilling, bulk sampling, laboratory testing, and trial mining may be conducted.

*viii. Mining Licence Application or End of exploration Program*

Only if an economic mineral resource is discovered within the EPL area, the proponent will compile an application for a mining licence and a detailed environmental impact assessment study will be undertaken. The EIA will comprise of detailed site-specific specialists' studies of different aspects of the project these studies may include the following impact assessments; Hydrology and geohydrology, archaeology, air quality, traffic, biodiversity (fauna & flora), visual and soil etc.

Should there be no discovery of any economic minerals that warrants a Mining Licence, the proponent can decide to end the operations of the project and the area is rehabilitated.

### **3.1.5. DECOMMISSIONING AND FINAL REHABILITATION**

In accordance with the EMA, the proponent is required to make funds accessible which will specifically be available and allocated for rehabilitation efforts. This fund should continually be available during the period of the active operation yet also be sufficient to cover all decommissioning activities when required.

Decommissioning activities will include the removal of any temporary infrastructure, rehabilitation of roads and other linear infrastructure, drill sites and bulk sampling pits, as necessary. This is done in order to reduce the effects of soil erosion and to re-establish normal ecosystem functionality so as to rehabilitate the environment.

## 4. ALTERNATIVES CONSIDERED

In terms of the Environmental Management Act, No. 7 of 2007 and EIA Regulations, alternatives considered should be analyzed to identify different means of meeting the general purpose and requirements of the activity, which may include alternatives to, location, type of activity, design and layout, technology and operation aspects. This is to ensure that during the design evolution and decision-making process, potential environmental impacts, costs, and technical feasibility have been considered, which leads to the best option(s) being identified. The alternatives considered are tabulated below:

ALTERNATIVE	JUSTIFICATION
<b>Site/Location</b>	Minerals Occurrence Location: Several economic deposits are known to exist in various locations of Namibia, some of which have been explored and mined by various companies throughout the years. However, mineral occurrence is often highly localized and therefore primarily determined by the site geology. As part of the license, the proponent proposes to explore and mine for potential base & rare metals, industrial minerals, precious metals, and semi-precious stones economic minerals occurrences in this specific EPL area. There are no alternative locations considered for exploration.
<b>Infrastructure</b>	<p><b>Access Roads</b> – The access routes to target areas and around the EPL have not been determined yet, however the proponent will use the existing external and internal road networks during the various phases of the project, should any new access be created, it will be done with the permission of landowners/land custodians as well as MEFT.</p> <p><b>Equipment and infrastructure</b> – The equipment and infrastructure options considered by the proponent are deemed sufficient at this stage of the project. However, in the world of revolving technology, the proponent may opt to employ other improved and environmentally safe to use equipment/infrastructure in the future when deemed necessary in order to maximize the project output.</p>
<b>Water supply</b>	Water will be brought to site from the nearest town/settlement and stored in a tank on site. The alternative is to use existing boreholes or do a hydro search to drill a new borehole.
<b>Power supply</b>	Power will be sourced from a diesel generator; the alternative is to Install photovoltaic solar panels at a later stage

## **5.1. NO GO ALTERNATIVES**

Not conducting exploration will deprive the proponent an opportunity to pursue its business and to strive for mineral resource discoveries, but it will also constitute an opportunity loss for the Namibian economy and overall wealth of the Namibian people. As such it will also deny other key stakeholders an opportunity to earn a much-needed income. The local authority and central government agencies will not earn revenue through rates and taxes. Considering the above losses, the “no-action/go” alternative was not considered a viable option in the interest of the directly affected community and the proponent.



## 5. LEGAL REQUIREMENTS

### 5.1. LIST OF APPLICABLE LAWS AND LEGISLATIONS

A list of legislation that is applicable to the proposed project is presented in **TABLE 3**.

TABLE 3 - LIST OF APPLICABLE NATIONAL LAWS AND LEGISLATIONS

LAW	SUMMARY DESCRIPTION
Constitution of the Republic of Namibia, 1990	<p>The Constitution is the supreme law in Namibia, providing for the establishment of the main organs of state (the Executive, the Legislature, and the Judiciary) as well as guaranteeing various fundamental rights and freedoms.</p> <p>Provisions relating to the environment are contained in Chapter 11, article 95, which is entitled "promotion of the Welfare of the People". This article states that the Republic of Namibia shall –</p> <p>"Actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at; maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for all Namibians, both present and future. The Government shall provide measures against the dumping or recycling of foreign nuclear waste on Namibian territory."</p>
Minerals (Prospecting and Mining) Act, No. 33 of 1992	<p>Minerals (Prospecting and Mining) Act 33 of 1992 and special regulations</p> <p>Sections 50, 52, 54, 57 and 130 of this Act sets out provisions for environmental management for activities arising from mineral, Exploration, and exploitation of mineral resources</p>
Environmental Management Act (2007) - Ministry of Environment, Forestry and Tourism (MEFT)	<p>The purpose of the Act is to give effect to Article 95(l) and 91(c) of the Namibian Constitution by establishing general principles for the management of the environment and natural resources.</p> <ul style="list-style-type: none"> <li>- to promote the coordinated and integrated management of the environment to give statutory effect to Namibia's Environmental Assessment Policy.</li> <li>- to enable the Minister of Environment, Forestry and Tourism to give effect to Namibia's obligations under international conventions.</li> <li>- In terms of the legislation, it will be possible to exercise control over certain listed development activities and activities within defined sensitive areas. The listed activities in sensitive areas require an Environmental Assessment to be completed before a decision to permit development can be taken. The legislation describes the circumstances requiring environmental assessments.</li> </ul>

	<p>- Activities listed as per the provisions of the Act will require environmental assessment unless the Ministry of Environment, Forestry and Tourism, in consultation with the relevant Competent Authority, determines otherwise and approves the exception. The provision of listed activities is listed under <b>section 1.4.</b></p>
Environmental Assessment Policy (1994)	This policy aims to promote sustainable development and economic growth while protecting the environment in the long term by requiring environmental assessment prior to undertaking of certain activities. Annexure B of the policy contains a schedule of activities that may have significant detrimental effects on the environment, and which require authorisation prior to undertaking.
Water Act 54 of 1956 Water Resources Management Act (Act No. 11 of 2013)  Ministry of Agriculture, Water and Land reform (MAWLR)	This Act provides for the control, conservation, and use of water for domestic, agricultural, urban, and industrial purposes. In terms of Section 6, there is no right of ownership in public water and its control and use is regulated and provided for in the Act. In accordance with the Act, the proposed project must ensure that mechanisms are implemented to prevent water pollution. water permits will also be required to abstract groundwater as well as for "water works."
Forest Act 12 of 2001 - Minister of Environment, Forestry and Tourism (MEFT)	<p>The Act provide for the establishment of a Forestry Council and the appointment of certain officials; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires.</p> <p>Section 22 requires a permit for the cutting, destruction or removal of vegetation that are classified under rare and or protected species; clearing the vegetation on more than 15 hectares on any piece of land or several pieces of land situated in the same locality which has predominantly woody vegetation; or cut or remove more than 500 cubic metres of forest produce from any piece of land in a period of one year.</p> <p>Should the above be unavoidable, it will be necessary to obtain a permit from the Ministry.</p> <p>Minimal vegetation clearing will be required to support the project activities. The necessary permit should be obtained from the MEFT, where the application should satisfy that the cutting and removal of vegetation will not interfere with the conservation of soil, water, or forest resources.</p>
Hazardous Substance Ordinance 14 of 1974	Provisions for hazardous waste are amended in this act as it provides "for the control of substances which may cause injury or ill-health to or death of human

<p>Ministry of Health and Social Services (MoHSS)</p> <p>Petroleum Products and Energy Act (No. 13 of 1990) Regulations (2001)</p>	<p>beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances. to provide for the prohibition and control of the importation, sale, use, operation, application, modification, disposal or dumping of such substance and to provide for matters connected therewith."</p> <p>The project will require diesel storage for supplying power, and machinery operation. The necessary permits should be acquired in this regard.</p>
<p>Atmospheric Pollution Prevention Ordinance 11 of 1976.</p> <p>Ministry of Health and Social Services (MoHSS)</p> <p>WHO guideline on noise levels.</p> <p>Occupational Safety and Health Administration (OSHA) guidelines</p>	<p>This regulation sets out principles for the prevention of the pollution of the atmosphere and for matters incidental thereto. Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for Atmospheric pollution by gases emitted by vehicles.</p> <p>The proposed prospecting activities would not entail the discharge of large quantities of gaseous pollutants into air but may result in increased noise levels, dust generation, destruction of in situ soil structure during such operations.</p>
<p>The Nature Conservation Ordinance 4 of 1975, Ministry of Environment, Forestry and Tourism (MEFT)</p>	<p>Care must be taken to ensure that protected plant species and the eggs of protected, and game bird species are not disturbed or destroyed. If such destruction or disturbance is inevitable, a permit must be obtained in this regard from the Minister of Environment, Forestry and Tourism. Should the Proponent operate a nursery to propagate indigenous plant species for rehabilitation purposes, a permit will be required.</p>
<p>Soil Conservation Act, No. 76 of 1969 and the Soil Conservation Amendment Act, No. 38 of 1971</p>	<p>The act makes provision for the prevention and control of soil erosion and the protection, improvement and conservation of soil and vegetation</p>
<p>Labour Act, 1992, Act No. 6 of 1992 as amended in the Labour Act, 2007 (Act No. 11 of 2007</p>	<p>The Labour Act gives effect to the constitutional commitment of Article 95 (11), to promote and maintain the welfare of the people. This Act is aimed at establishing a comprehensive labour law for all employees. to entrench fundamental labour rights and protections. to regulate basic terms and</p>

Ministry of Labour, Industrial Relations, and Employment Creation (MLIREC)	conditions of employment. To ensure the health, safety and welfare of employees under which provisions are made in chapter 4. Chapter 5 of the act improvises on the protection of employees from unfair labour practice.
Affirmative Action (Employment) Act No. 29 of 1998	Fair employment practice
Regional Councils Act (Act No. 22 of 1992)	The Regional Councils Act legislates the establishment of Regional Councils that are responsible for the planning and coordination of regional policies and development. The main objective of this Act is to initiate, supervise, manage, and evaluate development in the regions.
Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation of 1995	Prescribes Environmental Impact Assessments for any developments with potential negative impacts on the Environment
Nature Conservation Amendment Act 5 of 1996	To provide for an economically based system of sustainable management and utilization of game in communal areas
Draft Pollution and Waste Management Bill (1999)	This Bill serves to regulate and prevent the discharge of pollutants to air and water as well as providing for general waste management. The Bill repeals the Atmospheric Pollution Prevention Ordinance (11 of 1976). In terms of water pollution, it will be illegal to discharge of, or dispose of, pollutants into any watercourse without a Water Pollution Licence (apart from certain accepted discharges). Similarly, an Air Quality Licence will be required for any pollution discharged to air above a certain threshold. The Bill also provides for noise, dust or odour control that may be considered a nuisance. The Bill advocates for duty of care with respect to waste management affecting humans and the environment and calls for a waste management licence for any activity relating to waste or hazardous waste management.
Convention on Desertification of 1994	Combating desertification and mitigation of the effects of drought
National Heritage Act 27 of 2004	This Act provides provisions for the protection and conservation of places and objects of heritage significance and the registration of such places and objects.

Ministry of Education, Arts and Culture (MEAC)	The proposed activities will ensure that if any archaeological or paleontological objects, as described in the Act, are found during the implementation of the activities, such a find shall be reported to the Ministry immediately. If necessary, the relevant permits must be obtained before disturbing or destroying any heritage
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TABLE 4 - INTERNATIONAL LAW TO WHICH NAMIBIA IS A SIGNATORY

INTERNATIONAL LAW TO WHICH NAMIBIA IS A SIGNATORY
Vienna Convention for the Protection of the Ozone Layer - 1985
Montreal Protocol on substances that deplete the Ozone Layer - 1987
The Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal – 1989
The Rotterdam convention on the Prior Informed Consent Procedure for Certain Hazardous chemicals and Pesticides in International Trade – 1989
The Rio de Janeiro Convention on Biological Diversity - 1992
United Nations Framework Convention on Climate Change - 1992

## 5.2. KEY REGULATORS / COMPETENT AUTHORITIES

The regulatory authorities responsible for environmental protection and management in relation to the proposed project, including their role in regulating environmental protection are listed in **TABLE 5**.

TABLE 5 - AGENCIES REGULATING ENVIRONMENTAL PROTECTION IN NAMIBIA.

AGENCY	RESPONSIBILITY
Ministry of Environment, Forestry and Tourism (MEFT)	Issuance of Environmental Clearance Certificate (ECC) based on the review and approval of the Environmental Assessments (EA) reports comprising Environmental Scoping and Environmental Management Plan (EMP) prepared in accordance with the Environmental Management Act (2007) and the Environmental Impact Assessment Regulations, 2012
Ministry of Mines and Energy (MME)	Competent authority. The national legislation governing minerals prospecting and mining activities in Namibia fall within the jurisdiction of the Ministry of Mines and Energy (MME) as the Competent Authority (CA) responsible for granting authorisations. The Minerals Prospecting and Mining Act No.33 of 1992 approves and regulates mineral rights in relation to exploration, reconnaissance, prospecting, small scale mining, mineral exploration, large-scale mining, and transfers of mineral licences.

### 5.3. PERMITS

Some permits related to exploration activities are listed in **TABLE 6**.

TABLE 6 - APPLICABLE PERMITS TO THE PROPOSED PROJECT

PERMITS/CERTIFICATES	ACTIVITY	VALIDITY
Fuel Consumer Installation Certificate - (MME)	Regulates the amount of fuel product in possession	Temporary/ permanent
Notice of intention to drill – (MME)	This is submitted to the mining commissioner prior to drilling operation	Valid for the drilling period in notice
Water abstraction permit – (DWA)	This is applied for at the Directorate of Water Affairs to outline the borehole locations and the quantities of water you intend to abstract ad for what sort of activities	Permit dependent
Forestry Permits – (DOF)	Regulates the forest species to be cleared.	Temporary.

## 6. BASELINE ENVIRONMENT/ STUDY AREA

This section lists the most important environmental characteristics of the study area. This provides a baseline where changes that occur as a result of the proposed project can be measured. The data was gathered through desktop analysis of existing data and through spatial analysis. The spatial data used for mapping under this section was obtained from various sources including the <https://digitalnamibia.nsa.org.na/> of Namibia Statistics Agency (NSA) as well as the MME minerals Cadastre portal <https://maps.landfolio.com/Namibia/> and The Environmental Information Services website at <http://www.the-eis.com/>. No site-specific specialist studies were conducted for this project.

### 6.1. SITE AND SURROUNDING LAND USE

Generally, Tsumeb lies in the areas that receive higher annual rainfall in the country with more than 550mm annually, hence allowing successful intensive agricultural practices. The EPL overlaps with more than 35 commercial farmlands and/or farm portions which is the predominant land use. Despite the importance of agriculture in the area, minerals occurrence in the surrounding is considered prominent. The importance of proactive communication between the proponent, farmers, and owners of nearby properties is emphasized. Excellent relationships should be maintained throughout the life of the project.

The area is known for its high base metal potential, mainly copper, lead, zinc, silver and vanadium, explaining why these are the metals that will be prospected for, as well as other critical battery minerals. Prospecting and exploration activities, which include termite mound sampling and drilling, have been conducted around the larger area in the past by Ongopolo Mining & Processing Ltd in ~1980-1990 and Anglo American between 2005 and 2012.

### 6.2. CLIMATE

#### 6.2.1. TEMPERATURE

The climate data presented in this report is referenced to Tsumeb which is the nearest town to the project area. The Tsumeb climate is classified as hot semi-arid climate where the wet season is normally hot and mostly cloudy whilst the dry season is warm, windy, and clear (EIS, 2023). The hot season lasts for 3.5 months, from September to December, with an average daily high temperature above 31°C. The hottest month of the year in Tsumeb is October, with an average high of 33°C and low of 20°C (**FIGURE 5**). The cool season lasts for 2.1 months, from May to August, with an average high temperature below 26°C. The coldest month of the year in Tsumeb is July, with an average low of 9°C and high of 25°C (**FIGURE 5**).

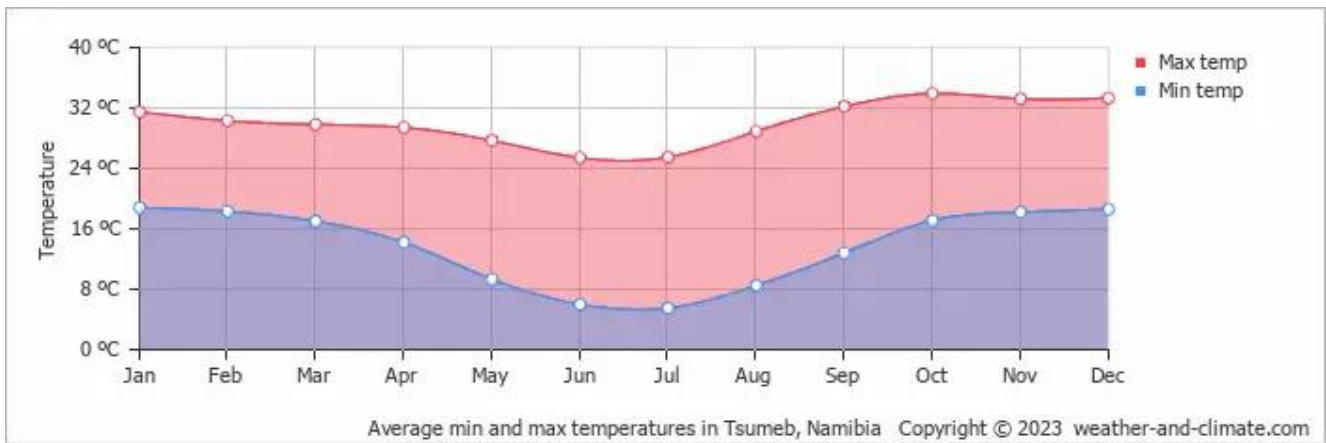


FIGURE 5 - AVERAGE HIGH AND LOW TEMPERATURE FOR TSUMEB ([WWW.WEATHER-AND-CLIMATE.COM](http://WWW.WEATHER-AND-CLIMATE.COM))

**6.2.2. RAINFALL**

Tsumeb receives an average precipitation of 528mm per year. Only 8% of the Namibian land surface receives more than approximately 500mm of annual rainfall. This rainfall is caused by the orographic uplift over the Grootfontein-Otavi-Tsumeb hills. Most rainy season is seen in January and February, the dry period in the area starts from May up to September. On average, January is the wettest month with 133 mm of precipitation whilst July is the driest month with 0 mm of precipitation (FIGURE 6).

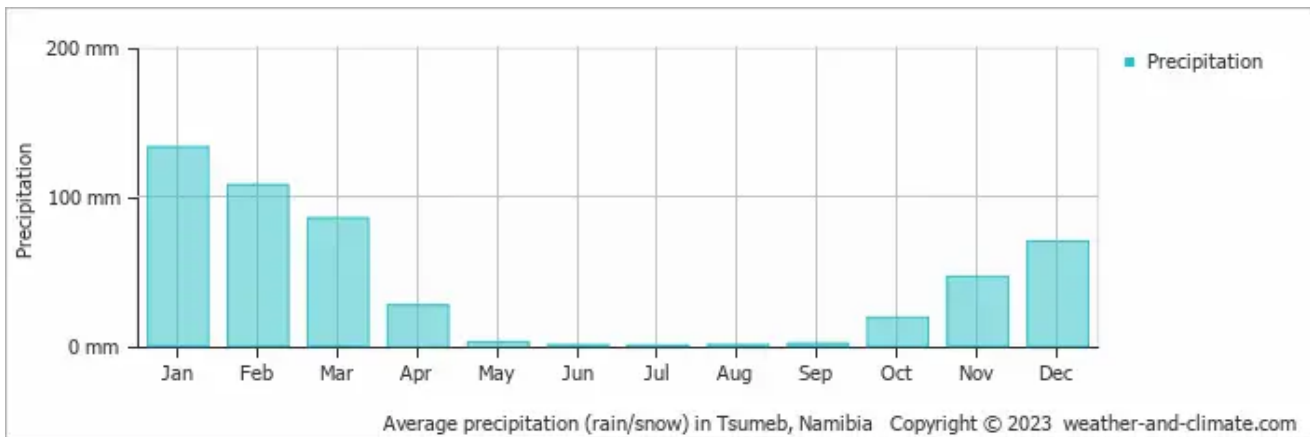


FIGURE 6 - AVERAGE RAINFALL IN TSUMEB ([WWW.WEATHER-AND-CLIMATE.COM](http://WWW.WEATHER-AND-CLIMATE.COM))



### 6.2.3. CLOUD COVER

The average percentage of cloud cover near the Tsumeb surrounding area fluctuates seasonally over the course of the year. The clearer part of the year in the EPL's surrounding area begins around May and lasts for about 5 months, ending around September. The clearest month of the year is August. The cloudier part of the year begins around October and lasts for 7 months, ending around April, the same period has the most humidity with April being the highest. The cloudiest month of the year in Tsumeb is January (FIGURE 7) ([www.worldweatheronline.com](http://www.worldweatheronline.com)).

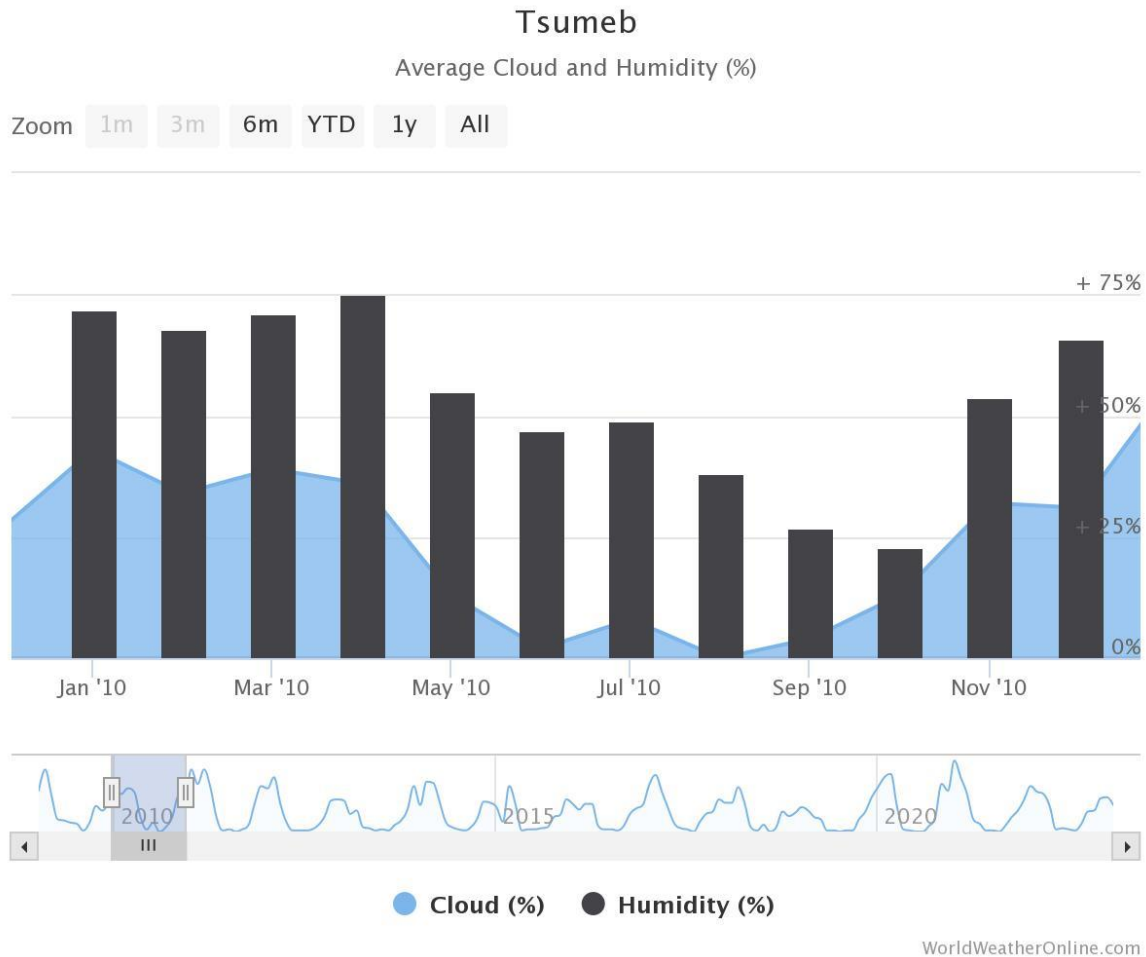


FIGURE 7 - AVERAGE CLOUD AND HUMIDITY (WORDWEATHERONLINE.COM)

### 6.2.4. SUNSHINE AND WIND

The number of hours of sunshine refers to the time when the sun is visible. That is, without any obstruction of visibility by clouds, fog, or mountains. The sun hours data is reference to Grootfontein town which has the closest recording station to the EPL area. July is the sunniest month in the area whilst in April, the sun shines the least (FIGURE 8).

The maximum windspeed recorded for areas around Tsumeb in the Error! Reference source not found. below ranges from 1.0 – 5.9 mps eastern wind with an average of 1.4mph (Iowa weather, 2023).

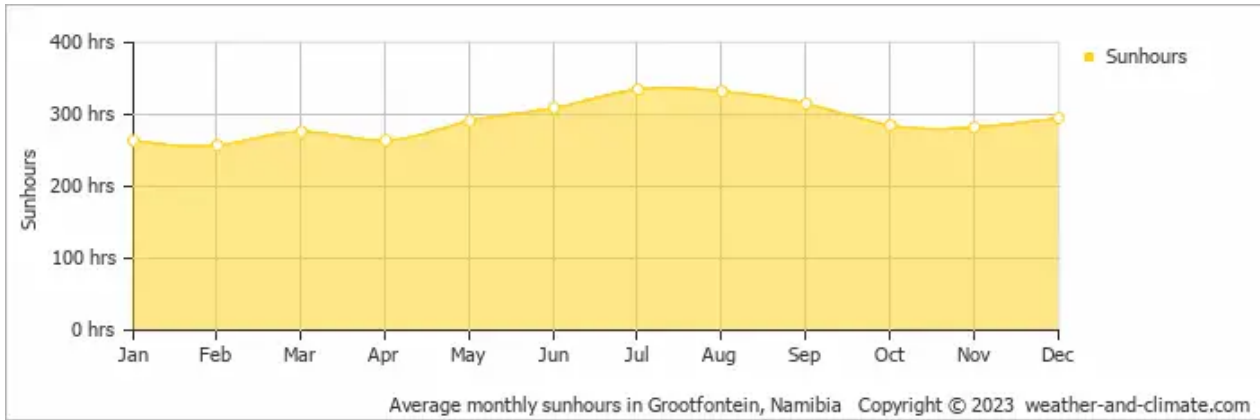


FIGURE 8 - AVERAGE MONTHLY SUN HOURS IN GROOTFONTEIN ([www.weathr-and-climate.com](http://www.weathr-and-climate.com))



Windrose Plot for [FYTM] Tsumeb  
 Obs Between: 29 Jun 2004 01:00 PM - 08 Aug 2015 09:00 AM Africa/Windhoek

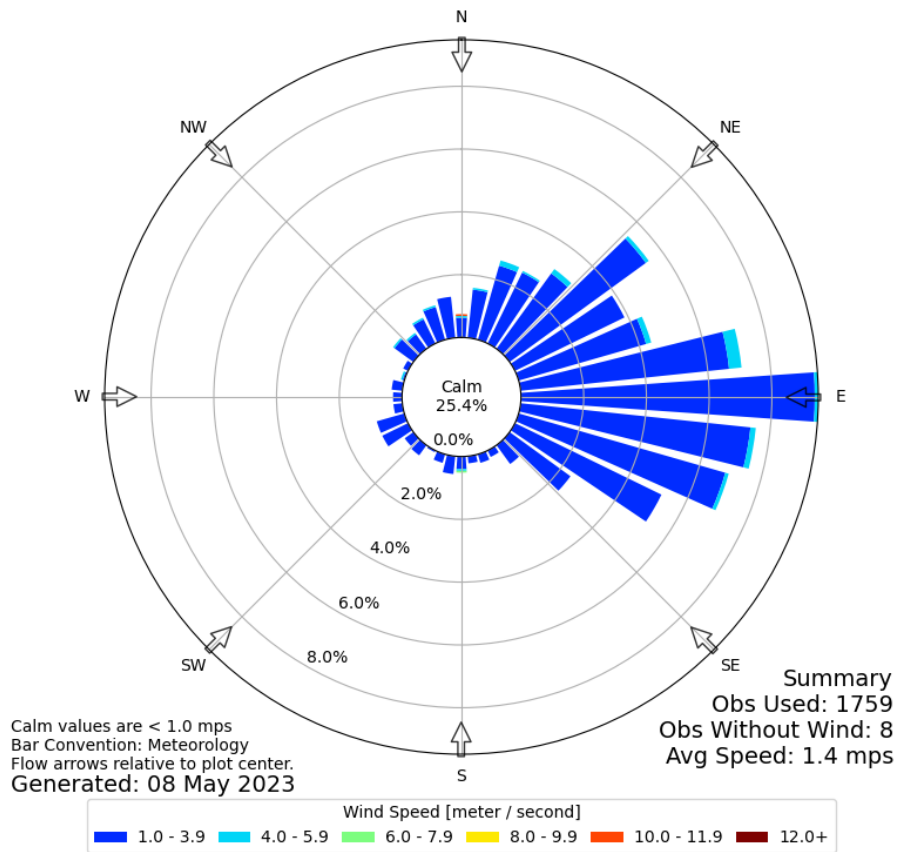


FIGURE 9 - WINDROSE FOR TSUMEB FROM 2004 TO AUGUST 2015 (Iowa weather, 2023)

## 6.3. BIOPHYSICAL ENVIRONMENT

### 6.3.1. FLORA

The majority part of Namibia is arid to semi-arid. Hence livestock farming is the most prevalent land use activity, while dryland and irrigated crop agriculture are minor sectors in the Namibian economy (Strohbach, 2000). Namibia's vegetation is strongly influenced by rainfall patterns. The study area lies within the Karstveld of the Tree-and-shrub Savanna vegetation biome refer to **FIGURE 10**. The most dominant species in the area is the mopane tree (*Colophospermum mopane*). Bush encroachment can be seen in large areas of the Oshikoto and Otjozondjupa Regions, primarily because of prolonged periods of cattle selective grazing. Several farms' carrying capacities have been reduced as a result of the invasion, and as a result, the invader bush is handled in several methods, one of which being the manufacturing of charcoal for export. The sickle bush or *Dichrostachys cinerea* is the main problem species (Enviro Dynamics, 2014).

Plant diversity is estimated at >500 species (Mendelsohn et al, 2002), notwithstanding the fact that terrain and water availability may contribute to local differentiation. The area as recorded to host the highest occurrence of plant diversity in Namibia, and some local endemics occur. The distinctiveness of mountain vegetation is not highlighted by biophysical baseline data, and the variety of plant species may congregate in very small places where microclimate, elevation, and sheltered areas provide a variety of habitats and niches. A number of indigenous trees could be observed around the larger area around and within the EPL, some of which will deserve protection even though the most are not "Protected". According to the Forestry Act, some species are protected, making it necessary to obtain a permit before removing them. This may include Marula tree (*Sclerocarya birrea*) and Buffalo thorn (*Ziziphus mucronata*) species.

Other species with commercial potential that could occur in the general area include *Hyphaene petersiana* (Makalani palm) – a palm tree native to the subtropical, low-lying regions of south-central Africa, *Combretum imberbe* (Lead wood), *Terminalia prunioides* (Purple-pod Terminalia) *Peltophorum africanum* (African Wattle), *Acacia mellifera detinens* (Black-thorn acacia) and *Acacia luederitzii* (Kalahari acacia) (Enviro Dynamics, 2014). A detailed vegetation study may identify matters that require further investigation. Also refer to **Appendix E** plant species list.

TABLE 7 - FLORA DATA FOR THE AREA (Mendelsohn et al, 2002)

<b>Biome</b>	Tree-and-shrub Savanna
<b>Vegetation structure type</b>	Karstveld
<b>Number of plant species</b>	More than 500
<b>Dominant plant species 1</b>	<i>Colophospermum mopane</i>

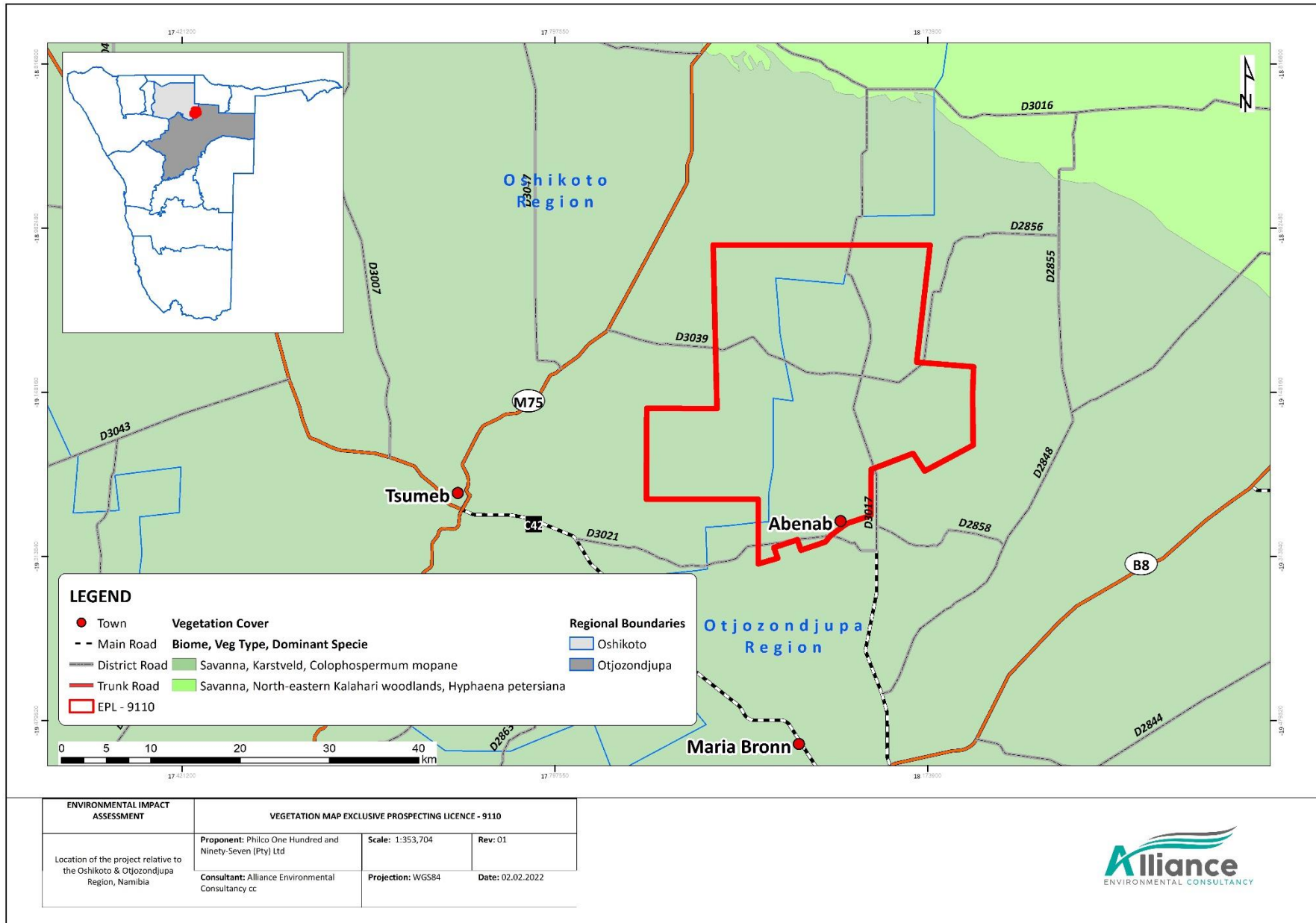


FIGURE 10 -VEGETATION COVER OF THE SURROUNDING AREA.

Some bush clearing may be required during exploration where access roads, drill pads and bulk sample sites are chosen. The clearing of any vegetation would not be on the scale, which triggers a full EIA, but permits to fell trees and clear bush for exploration will require a Forestry Permit. In addition to this, vegetation clearing restrictions within 100m of rivers must be taken into account as outlined in the draft regulations of the Water Resource Management Act (Rothauge 2017). Any relaxation of this rule needs to be confirmed and approved by the Ministry of Agriculture, Water and Land Reform.

**Appendix E** contains a list of species list that could potentially occur within the study area as obtained from the National Botanical Research Institute (NBRI).

### 6.3.2. FAUNA

This section borrows much from the book of Mendelsohn et al. 2002.

Nationally, the area is regarded as a relative medium - high mammal, reptile and intermediate amphibian diverse. Furthermore, the study area is known to have a relative high number of reptile and mammal species that are endemic to Namibia. Although many endemic species are known to occur from the general area, it cannot be determined if any of these are expected within the EPL area.

Between 76 and 90 species can be found in the larger area around the EPL, which is more than the majority of other regions in the country, where an average of 60 species are found. According to the information that is currently available, this region is home to 6 of the 8 large herbivores and 5 of Namibia's native large carnivores. With 71 to 80 different species recorded, the research region contains a very high diversity of reptile species. Frog diversity is not very high in the study area; approximately 12 to 15 of the 35 listed species may be observed.

Mammals classified as rare (*Cistugo seabrae*, *Zeltomys woosnami*, *Felis nigripes*) under Namibian legislation and vulnerable (*Smutsia temminckii* *Acinonyx jubatus*, *Panthera pardus*, *Felis nigripes*) and near threatened (*Eidolon helvum*, *Hyaena brunnea*) by the IUCN (2017) are viewed as the most important although they do not necessarily occur in the area throughout the year, but rather pass through occasionally dependent on environmental conditions, etc.

Species most likely to be adversely affected by exploration would be the variety of reptiles and ground nesting birds specifically associated with this area. Mitigation measures aimed to prevent any serious or lasting damage to this diversity including limiting damage to habitat in general and prohibiting poaching is detailed in the EMP. Generally, in the area of EPL 9110, there are numerous anthropomorphic influences – e.g., long term farming activities and associated infrastructures, roads, and private farm tracks, etc. affecting the general natural landscape.

## 6.4. SOIL

The soils in this area are broadly categorized to the group of leptosols and defined by a mollic leptosols domination soils as indicated in **FIGURE 11**. The southern parts of EPL are covered by rocky outcrops associated with leptosols. Mollic Leptosols, the predominant soil type in the EPLs, have strong surface structure but poor water-holding capacity. When thunderstorms, which are common in this region, strike, water prefers to run off instead of infiltrating. Mollic Leptosols have a low water-holding capacity due to their shallowness and gravelly nature, which also renders them very limited in agricultural potential. Their depth is restricted by a Petro-calcic horizon. The soil is highly fertile, but their usage is restricted by their shallow and rocky nature.

Other characteristics of these soil type are brownish black to dark brown color, fine sand to loamy sand texture, slightly to highly alkaline pH level, well drained, highly calcareous, loose consistence, many to abundant fragments of limestone and abundant fine roots in the topsoil (Strohbach,2014).

Hydrocarbon spillages should thus be regarded as an emergency and every action should be taken to immediately remedy the situation before spreading occurs.

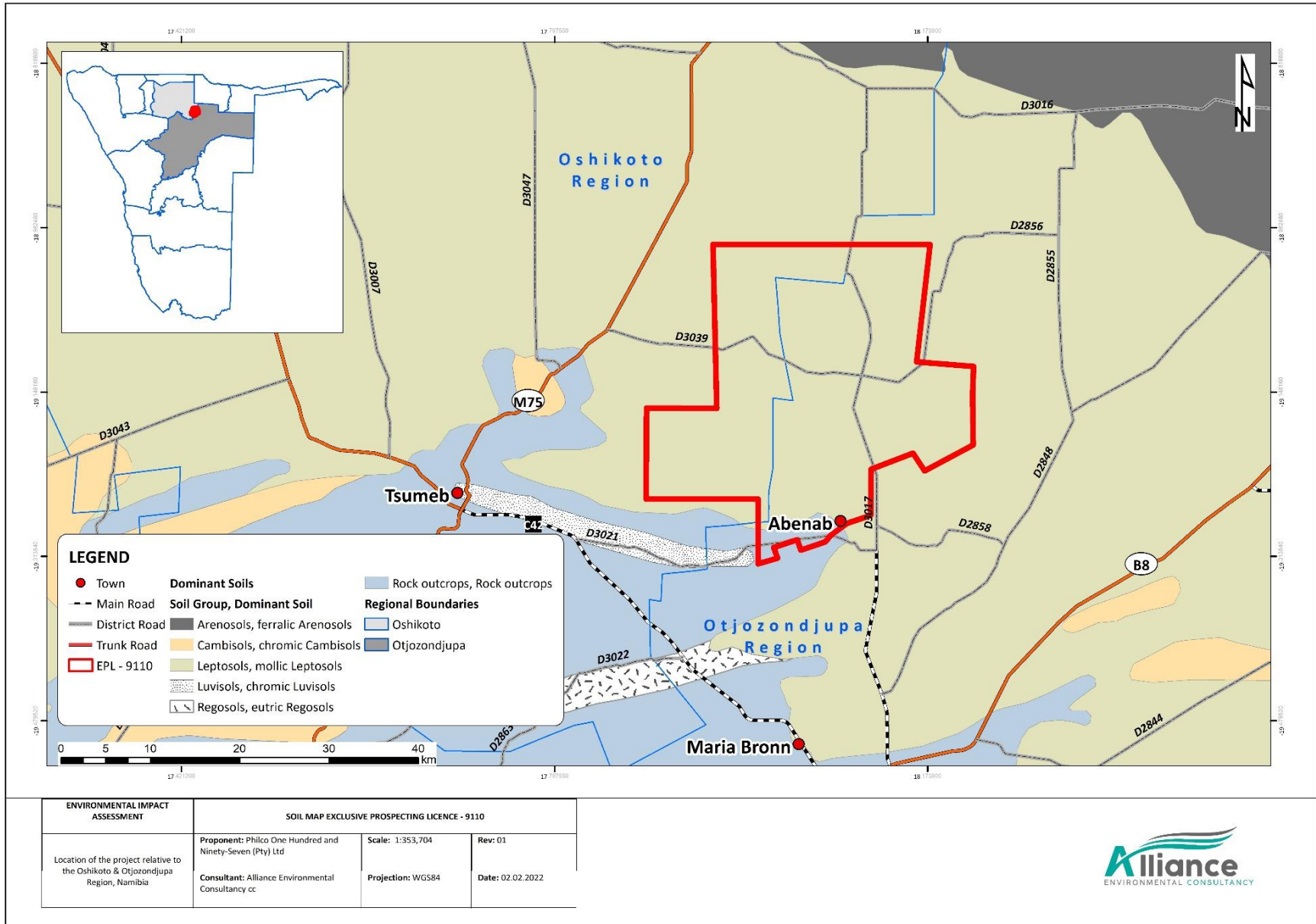


FIGURE 11 - DOMINANT SOIL AROUND THE STUDY AREA

## 6.5. GEOLOGY

The EPL area consists of Kalahari and Namib sands as well as Otavi group (**FIGURE 12**). The basement in the EPL area is made up of Palaeoproterozoic granitic gneiss and amphibolites which have been intruded by Mesoproterozoic granite. The underlying geology primarily consists of limestones (including calcrete), dolomites and marbles. Pre-historic weathering of surface and underground limestone by water caused them to dissolve and a “karst landscape” developed. Overlying the basement are lithologies of the Damara Supergroup which in the Otavi Mountain Land (OML) consists of three groups, oldest to youngest, the Nosib, the Otavi and the Mulden Groups.

The company is targeting rare and base metal mineralization of the OML which can be associated with precious metals and industrial mineral mineralization. The most significant mineralization of the OML as worked over the past decades are as follows:

**The Nosib Group :** Askevold Formation: Nosib and Askevold copper deposits

**The Otavi Group:** Gauss Formation: Berg Aukas zinc-lead-vanadium deposit, Auros Formation: Abenab West lead-zinc-vanadium deposit, Maieberg Formation: Abenab vanadium and Khusib Springs copper-lead-zinc deposit, Hüttenberg Formation: Tsumeb lead-copper-silver-zinc-(germanium), Tsumeb West copper, Kombat copper-lead-(zinc) deposits

**The Mulden Group:** Tschudi Formation: Tschudi copper-silver deposits

Although the OML's mineralization is structurally constrained, it is also known that some stratigraphic control exists over the OML's distribution. There are more than 620 recognized mineral occurrences in the area, with the Gauss Formation of the Abenab Subgroup and the Elandshoek Formation of the Tsumeb Subgroup housing the majority of them. Just 10% of the EPL, which is covered in sand, gravel, and calcrete, has rock outcrops of the Elandshoek and Hüttenberg Formations that have been mapped. The first exploration targets on the EPL will be the Elandshoek and Hüttenberg Formations under cover along with possible alkali intrusives hosting rare earth mineralization. Due to the EPL's vicinity to the Abenab and Abenab West types of mineralization, they are the second target.



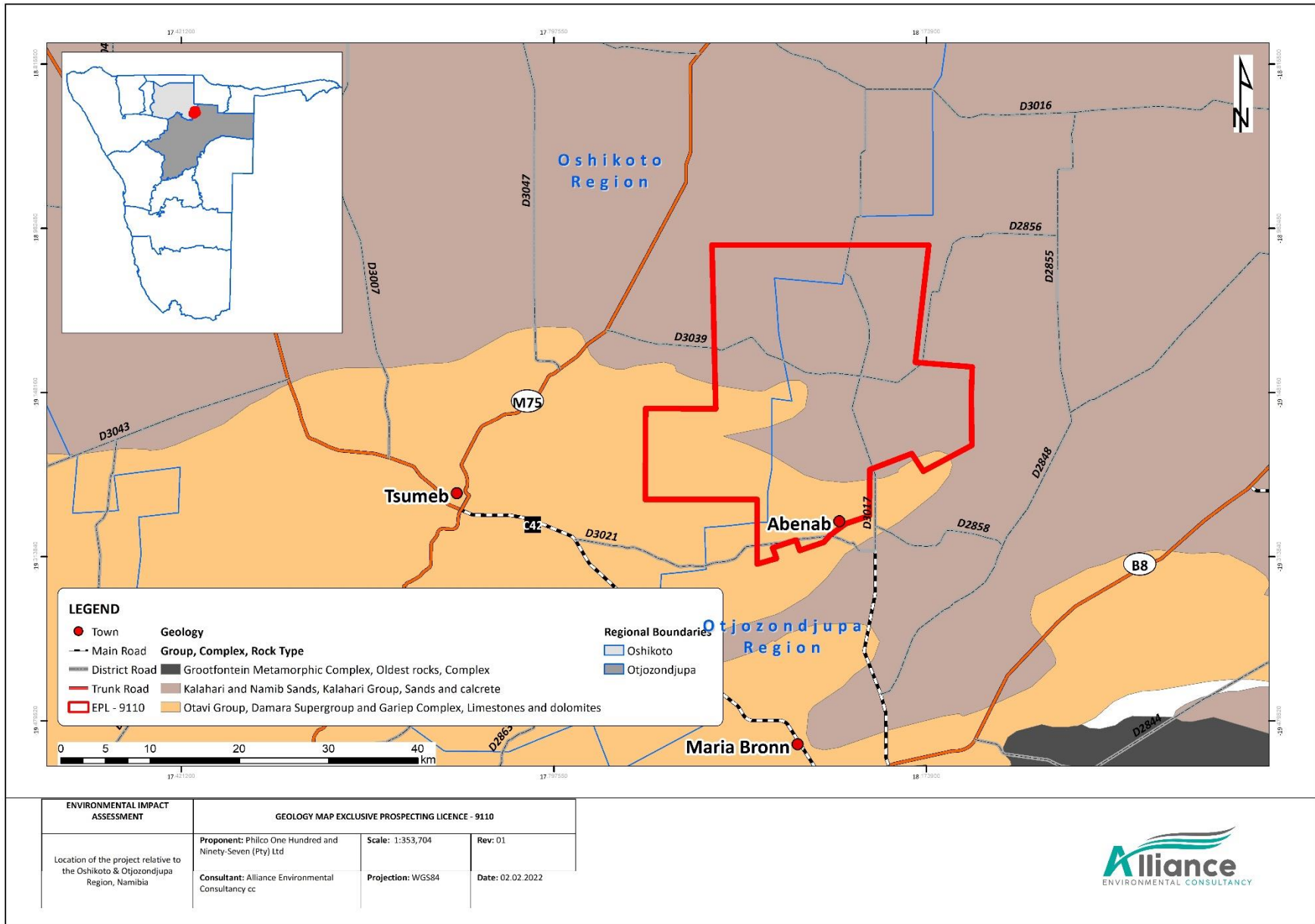


FIGURE 12 - GEOLOGY OF THE SURROUNDING AREAS.

## 6.6. HYDROLOGY

The proposed EPL lies in the Owambo Groundwater basin (**FIGURE 13**). The EPLs fall within the hydrogeological region of the Otavi Mountain Land (OML), an area characterized by a productive fractured aquifer mainly recharged through rainfall and water quality is generally of a high standard (Christelis, 2001). The general direction of the groundwater flow is south, towards the Omatako Basin. Dolomites, which underlie the region, exhibit a high potential for groundwater with an increased potential when localized fractures and faults occur. The water table in the area is extremely shallow; past research shows that at some places intersected at only 4m below surface (Enviro Dynamics, 2014). The majority of the area has been designated a "Groundwater Control Area," highlighting the value of its potential for groundwater on a national scale (Christelis, 2001).

There are more than 30 boreholes situated within and around the EPL area and farmers around the area predominantly use water from borehole abstraction. Provided that the boreholes within the area are operational, it is highly probable assumed that water will be obtained from some of these existing boreholes during the exploration activities. Appropriate permits should be obtained from the DWA should borehole water use be realized. Accounting the nature and scale of the proposed exploration, drilling is unlikely to impact groundwater.

Considering the shallowness of the groundwater basin, this poses risk of contamination. Therefore, storage of any material substance that may cause pollution to water sources should be handled and stored in accordance with appropriate legislation.

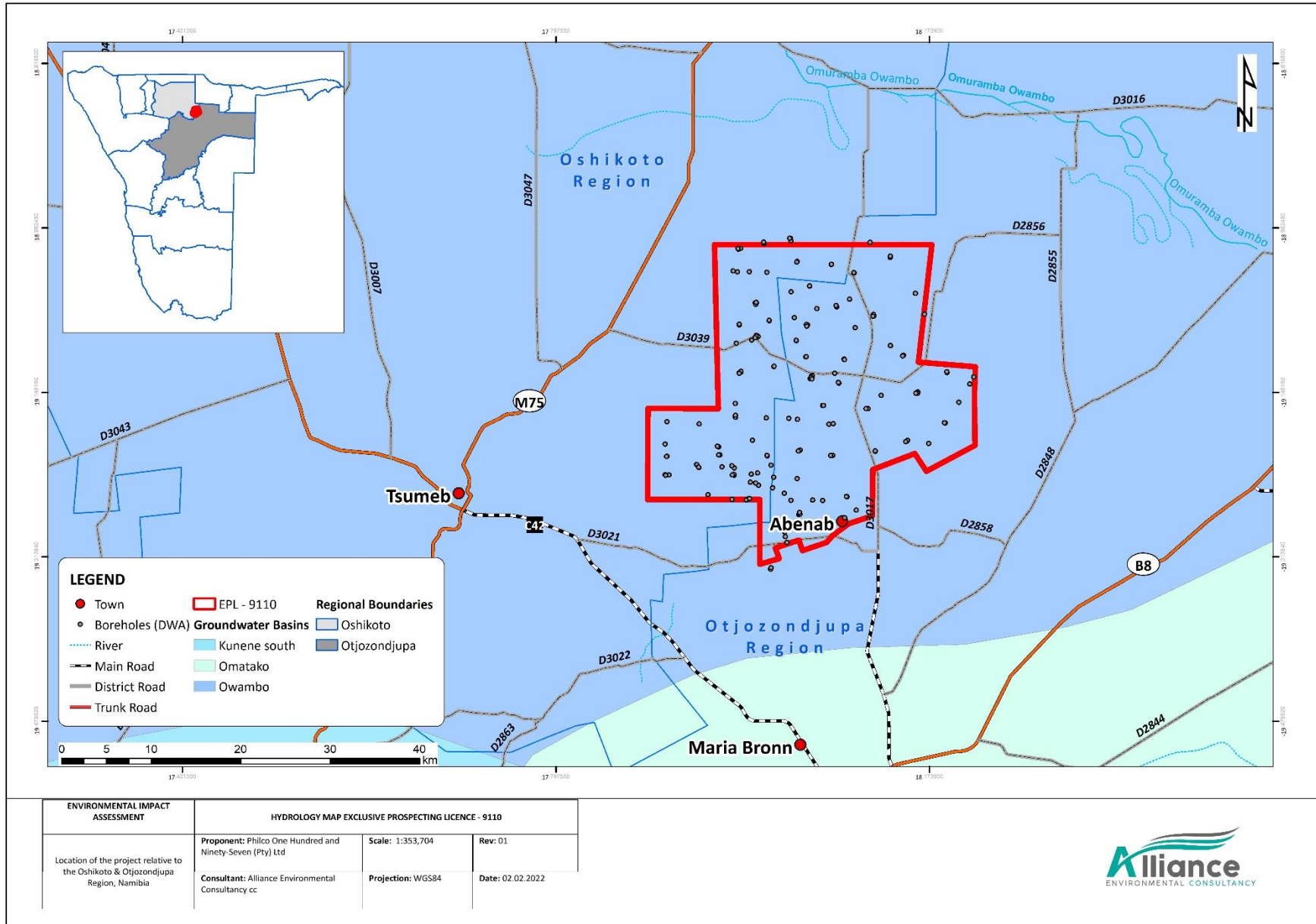


FIGURE 13 - HYDROLOGY SETTING OF THE SURROUNDING AREA.

## **6.7. SOCIO-ECONOMIC SETTING**

### **6.7.1. REGIONAL AND LOCAL PROFILE**

The EPL 9110 is located within the Oshikoto and Otjozondjupa Regions in the north central part of Namibia. The name Oshikoto lends it well to this region as it describes the most prominent natural heritage, the Otjikoto Lake. Oshikoto has a total surface area of 38,653km square and is home to the Etosha National Park to its west and it is bordered by the Omusati and Oshana Regions in the west, the Ohangwena to the north and Kavango-West and Otjozondjupa Regions to the east (NSA, 2014).

Otjozondjupa is the fourth largest region in the country with a total surface area of 105 460 km<sup>2</sup>, representing about 7.8% of the total area of Namibia. The Region is bordering Kavango Region on the north, Oshikoto Region in the north-west, Kunene and Erongo regions in the west, Omaheke and Khomas regions in the south, and the Botswana border to the east (NSA, 2014).

Oshikoto consists of eleven (11) constituencies whereas Otjozondjupa has seven (7). The constituencies are headed by the political office bearers in the form of Honorable Councilors. The EPL falls within the Grootfontein and Tsumeb constituencies. The regions are further divided into municipalities and village councils that operate as the custodians of the land.

### **6.7.2. DEMOGRAPHY**

The 2011 Namibia Population and Housing Census results show that Otjozondjupa had a population of 143 903 people of which 70 001 were women and 73 902 were men. The population grew at an average annual rate of 0.6 per cent between 2001 and 2011. The Oshikoto Region recorded a total population of 181,973 in 2011. The population density (is 4.7 persons per km<sup>2</sup>) the growth rate was estimated at 1.2%. Tsumeb had a population of 19,275 residents in 2011 (NSA, 2014).

### **6.7.3. EDUCATION AND EMPLOYMENT**

Any region's socioeconomic growth can be greatly accelerated by education because it significantly increases the literacy, knowledge, and competency that people and communities require to function on a daily basis. The education sector in these regions covers Pre-primary education, Primary education, Secondary education and adult education.

A higher proportion of the Otjozondjupa population in rural areas had never attended school (26.8%) compared to urban areas (10%). Likewise, 40.4 percent of the population had completed their primary education and 19 percent had completed their secondary education before leaving school. Only 4.1 percent of the population had completed their tertiary education (NSA, 2014). Oshikoto shows that 38.7 percent of the population had completed their primary education and 15.1 percent had completed their secondary education before leaving school. 41.9 percent had not completed primary

school, and only 3 percent of the population had completed their tertiary education. Oshikoto as a whole, was marked by low education levels, which affected employability and prevented many households to earn a decent income (NSA, 2011).

The unemployment rates in Namibia, particularly among the youth are high. As of 2018, the overall unemployment rate in Namibia was estimated at 33.4%, which is a slight decrease of 0.6% compared to 34.0% in 2016. According to the Namibia Labour Survey (2018), the unemployment rate of the Oshikoto and Otjozondjupa Regions was 26.6% and 36.1% respectively, while the unemployment rate for people between 15 and 34 years of age was 47.4% in 2018, slightly higher than the national average of 46.1% (NSA, 2011).

The 2011 census data on the primary industries within which workers are employed shows that Oshikoto and Otjozondjupa are heavily reliant on the agricultural sector (49% of jobs). The next most prominent sectors were the administrative and support services (7% of jobs), followed by education and activities of private households at (6% of jobs each). For Otjozondjupa elementary occupations made up the largest occupational group (23.5%), followed by skilled agricultural workers (21.5%). Also, a major employer, about 1.7% of the formal labour force of Namibia is directly employed by the mining sector (NSA, 2011).

#### **6.7.4. LAND USE AND ECONOMIC ACTIVITIES**

The Regions are strategically located to attract economics activities. They are predominantly communal and rural in character, the administrative center for Oshikoto is Omuthiya and business center is Tsumeb surrounded by commercial farms whereas Otjiwarongo is the administrative center for Otjozondjupa. Oshikoto is also known for its copper mine near the town of Tsumeb. The Region is a leader in the production of fruits and vegetables because of the underground water that can be found in Tsumeb and Oshivelo.

Around the EPL area the socioeconomic setting is dominated by commercial agriculture of cattle and small stock. Agriculture has been a proven viable practice for 50 years in the area providing continued employment and food production on a sustainable basis. Agriculture activities, both communal and commercial in the area have opened up a window of hope for crop and livestock farming in the Regions. Most of the households in the communal area engage in subsistence farming. Outside the veterinary cordon fence, also referred to as the "red line," is where commercial farming is primarily conducted. Local marketplaces in the area are dominated by the sale of agricultural goods. The livelihood of those living in the region who are engaged in agriculture is a source of both income and domestic consumption. The bulk of the population in the regions relies on farming of both crops and cattle for their livelihood. Etosha National Park is one of the famous tourist attraction areas which offer

tourists and other interested people to view wildlife and the beautiful Andoni Plateau. The Hoba Meteorite was discovered in the 1920's on the farm Hoba, 19 km west of Grootfontein in the Otjozondjupa Region. It is estimated that the meteorite fell to earth about 80,000 years ago. It is the world's largest meteorite and weighs 60 tonnes. It is approximately 2.7m x 2.7m x 0.9m in size and is made up of 82% iron 16,4% nickel and 0.76% cobalt. The Hoba meteorite was declared a national monument in March 1955, and it is a National Heritage Site (Otjozondjupa Regional Council, 2020).

An important part of Namibia's economy is mining, which contributes 25% of the nation's GDP and has continually been the largest source of revenue for Namibia (NSA, 2011). Uranium, gold, diamonds, copper, zinc, lead, salt, and dimension stone are the principal commodities.

The copper mine at Tsumeb, which was constructed in 1961–1962, is renowned for housing one of the few industrial smelting facilities in Africa. One of only a few smelters in the world that can handle polymetallic concentrates with high arsenic levels is the Tsumeb smelter, which makes it special. Because of this, the Tsumeb smelter acts as a smelting facility for a number of nations that produce copper, including Botswana, Zambia, and the Democratic Republic of the Congo. The Otjozondjupa region hosts one of the country's biggest gold mines (B2Gold) which employs a vast number of Namibian citizens.

#### **6.7.5. ARCHAEOLOGICAL AND HERITAGE**

The EPL and surrounding areas were previously disturbed through agricultural practices and minerals exploration in the past. There was no site-specific heritage assessment carried out for this project. However, a review of the National Heritage Council and the environmental information services database was conducted, and no known heritage sites were identified in the project area. In cases where heritage sites are discovered, the chance finds procedure will be used where appropriate measures will be undertaken upon discovering sites of archaeological importance. All archaeological remains are protected under the National Heritage Act (2004) and will not be destroyed, disturbed or removed.

## 7. STAKEHOLDER ENGAGEMENT

### 7.1. PUBLIC PARTICIPATION

Public participation is the cornerstone of the Environmental Impact Assessment process. These include the ongoing provision of sufficient information (in a transparent manner) to Interested and Affected Parties (I&APs). During the public participation process, I&APs will be given the opportunity to comment on the findings of the reports, over the specified comment periods.

Good consultation helps foster genuine and positive relationships with mutual respect, shared concerns and objectives between the company pursuing development and the community. The public participation facilitator's role is to facilitate that process of dialogue to ensure there is transparency and accountability in decision-making and public confidence in the proposed project and its management. The following approaches were employed in an attempt to get in contact with the potential affected and interested parties around the project area.

#### 7.1.1. BACKGROUND INFORMATION DOCUMENT

A Background Information Document (BID) was provided to the various I&APs through the public participation process. This document gives an overview and non-technical summary of the proposed development and acts as an easy reference to the proposed project. The BID is included in **Appendix C**. The draft EIA and EMP will be circulated to the registered stakeholders in order to provide their further input and comments before submission to the authorities.

#### 7.1.2. NEWSPAPER ADVERTS

Public notices/invitations were placed in the following newspapers for two consecutive weeks (**12<sup>th</sup> and 16<sup>th</sup> /19<sup>th</sup> of December 2022**): **Appendix D** provides Tear sheets of the adverts.

- The Republikein newspaper
- The Allgemeine Zeitung
- The Sun newspaper
- The Windhoek Observer newspaper

#### 7.1.3. SITE NOTICE AND VISIT

Site notices were placed around accessible places in Tsumeb which is the closest town to the EPL and where most farmers get their supplies. The notices are included in **Appendix D**. The locations include notice boards at:

- The Tsumeb Municipality.
- The Agra supermarket.

- The Tsumeb police Station.
- Pupkewitz mega build.
- Open market.
- Tsumeb Engine Wimpy service station.

#### **7.1.4. STAKEHOLDER ENGAGEMENT**

Written notices/invitations were sent to several farmers organizations/institutions in order to obtain details for farmers that overlaps with the EPL boundaries and inform them about the proposed project. AEC visited the Directorate of Lands and Resettlement offices for the same purpose of obtaining details to communicate with landowners. Written notices were posted to the affected and identified farmers that overlay the EPL area. The proof of notice postage and template is attached under **Appendix D**. No public meeting was held for this project as it was not deemed necessary at this stage of the project. However, a visit to the site was conducted by the proponent and more farmers' details were obtained and shared. The draft scoping report and EMP were shared with the identified and registered stakeholders for a period of 7-14 days to provide their further input and comments regarding the proposed exploration project.

During this period less than five (5) registrations were received during the public participation process. In the event that the ECC is granted the proponent shall ensure ongoing consultation with all relevant affected parties for access to land and other resources.

#### **7.1.5. STAKEHOLDER ENGAGEMENT OUTCOMES**

Issues received were regarding the access agreements and legal provisions pertaining to prospecting, orchards and plantations. Other issues were pertaining to dust in the area due to the project activities as well as concerns pertaining to contamination of the groundwater. The correspondences are included **Appendix D**.



## 8. EVALUATION OF IMPACTS

### 8.1. ASSESSMENT PROCEDURE

The purpose of this section is to assess and identify the most pertinent environmental impacts by describing certain quantifiable aspects of these impacts and to provide possible mitigation measures to minimize the magnitude of the impacts that are possibly deriving from the various activities that constitute the proposed prospecting and exploration activities on EPL 9110 by the proponent.

The identification of potential impacts included impacts that may occur during the pre-operational, operational, and decommissioning phases of the project. The assessment of impacts includes direct, indirect as well as cumulative impacts. In order to identify potential impacts (both positive and negative) it is important that the nature of the proposed projects is well understood so that the impacts associated with the projects can be assessed.

The process of identification and assessment of impacts includes:

- Determining the current environmental conditions in sufficient detail to establish a baseline against which impacts can be identified and measured.
- Determining future changes to the environment that will occur in a case where the activity does not proceed.
- Develop an understanding of the activity in detail to understand its consequences; and
- The identification of significant impacts which are likely to occur if the activity is undertaken.

The following potential impacts on the environment during the different stages of the project have been identified:

#### **Possible Positive Impacts**

- Contributions to annual license fees to the government through the MME.
- Payments of lease agreements and services rendered.
- Value adding to Namibian raw materials.
- Provision of contractual employment opportunities.
- Increase in knowledge on the subsurface which then contributes to development, and geoscience research.
- Contribute to the socio-economic development of the local area and region,
- Direct capital investment into Oshikoto and Otjozondjupa Regions

### **Possible Negative Impacts**

– **Ecological disturbances**

Potential removal of vegetation to allow project activities and erect temporary site shade structures during field work and exploration operations. Habitat disturbance, especially reptile habitats due to drilling, and increased flow of traffic. Loss of wildlife to poaching due to presence of exploration personnel.

– **Dust & Noise**

Dust emanating from the increased movement of vehicles, trucks and other operational machinery may degrade the ambient air quality in the area. Potential increase in noise levels from project vehicles and machinery may be a nuisance to the locals.

– **Visual**

Changes to the aesthetic appeal of the area due to the presence of people, vehicles and machinery. Visible changes to habitats due to human activities.

– **Health & Safety**

From the handling of equipment and use of machinery as well as potential risks of contracting diseases linked to prolonged exposure to dust.

– **Waste**

Resulting from maintenance work performed on the machinery as well as littering in the area include packaging from food or other products and consumables.

Soil pollution includes petrochemical spills from vehicles (bakkies), water trucks, diesel operated generator as well as the trailer mounted diesel tank for fuel storage.

– **Groundwater and surface water**

Due to inadequate management of waste, discharge, and infiltration of non-contained wastewater as well as potential spillages of drill fluid, lubrication or drilling that penetrates the ground water table. This may also be influenced by site operations such as maintenance activities or accidental fuel spills.

– **Topography**

Disturbance of the topography due to clearing drill pads, camp sites and removal of samples during exploration.

– **Heritage & Socio-Economic**

Potential disturbance and damage to unforeseen archaeological or heritage sites during project activities and movements in the area.

– **Impact of poor communication**

Miscommunication may lead to negative insulence in the community towards the project. Increased movement in the surrounding area and inadequate delivery of notice for exploration and or operational activities in the community may result in conflicts with landowners and the affected community.

The following methodology is applied to the prediction and assessment of impacts and risks. Potential impacts and risks have been rated in terms of the direct, indirect, and cumulative where:

<b>Status</b>	Whether the impact/risk on the overall environment will be
	<ul style="list-style-type: none"> <li>• <b>Positive</b> - Environment overall will benefit from the impact/risk.</li> <li>• <b>Negative</b> - Environment overall will be adversely affected by the impact/risk.</li> <li>• <b>Neutral</b> - Environment overall not be affected.</li> </ul>

<b>Direct impacts</b>	Impacts are directly caused by the activity and usually occur at the same time and place of the activity. These impacts are often related to the construction, operation or maintenance of an operation and are often obvious and quantifiable.
<b>Indirect impacts</b>	These types of impacts include all the potential impacts that are not evident immediately when the activity is carried out, or which occur at a different place due to the activity.
<b>Cumulative impacts</b>	Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present, or reasonably foreseeable future activities.

In addition to the above, the impact assessment methodology includes the following aspects:

<b>Spatial Extent</b>	The size of the area that will be affected by the impact:
	<ul style="list-style-type: none"> <li><b>Site specific</b> - Only within the site boundaries</li> <li><b>Local</b> - limited to within 15 km of the area.</li> <li><b>Regional</b> - limited to ~100 km radius</li> <li><b>National</b> - limited to within the borders of Namibia.</li> <li><b>International</b> - extending beyond Namibia's borders</li> </ul>

<b>Consequence</b>	The anticipated consequence of the impact:
	<ul style="list-style-type: none"> <li>• <b>Extreme</b> - Environmental functions and processes are altered such that they permanently cease;</li> <li>• <b>Severe</b> - Environmental functions and processes are altered such that they temporarily or permanently cease.</li> <li>• <b>Substantial</b> - environmental functions and processes are altered such that they temporarily or permanently cease.</li> <li>• <b>Moderate</b> - Environment continues to function but in a modified manner; or</li> <li>• <b>Slight</b> - No natural systems/environmental functions, patterns, or processes are affected.</li> </ul>

<b>Duration</b>	The timeframe during which the impact/risk will be experienced
	<ul style="list-style-type: none"> <li>• <b>Very short term</b> - instantaneous.</li> <li>• <b>Short term</b> - less than 1 year.</li> <li>• <b>Medium term</b> - 1 to 10 years.</li> <li>• <b>Long term</b> - The impact will occur for the project duration.</li> <li>• <b>Permanent</b> - The impact will occur beyond the project decommissioning.</li> </ul>

<b>Reversibility of the Impacts</b>	The extent to which the impacts/risks are reversible assuming that the project has reached the end of its life cycle (decommissioning phase)
	<ul style="list-style-type: none"> <li>• <b>Yes</b> - High reversibility of impacts (impact is highly reversible at end of project life);</li> <li>• <b>Partially</b> - Moderate reversibility of impacts; or</li> <li>• <b>No</b> - Impacts are non-reversible (impact is permanent).</li> </ul>

Using the criteria above, the impacts will further be assessed in terms of the following:

<b>Probability</b>	The probability of the impact/risk occurring
	<ul style="list-style-type: none"> <li>• Very likely.</li> <li>• Likely.</li> <li>• Unlikely.</li> <li>• Very unlikely; and</li> <li>• Extremely unlikely.</li> </ul>

To determine the significance of the identified impact/risk, the consequence is multiplied by probability. This approach incorporates internationally recognized methods from the IPCC (2014) assessment of the effects of climate change and is based on an interpretation of existing information in relation to the proposed activity. The significance is then rated qualitatively as follows against a predefined set of criteria (i.e., probability and consequence) as indicated below:

IMPACT = CONSEQUENCE X PROBABILITY						
PROBABILITY	Very Likely				Very High Impact	
	Likely			High Impact		
	Unlikely		Moderate Impact			
	Very Unlikely	Low Impact				
	Extremely Unlikely	Very Low Impact				
		Slight	Moderate	Substantial	Severe	Extreme

Where:

Significance	Will the impact cause a notable alteration of the environment?
	<ul style="list-style-type: none"> <li>• <b>Very low (5)</b> - The risk/impact may result in very minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures and will not have an influence on decision-making.</li> <li>• <b>Low (4)</b> - The risk/impact may result in minor alterations of the environment and can be easily avoided by implementing appropriate mitigation measures and will not have an influence on decision making.</li> <li>• <b>Moderate (3)</b> - The risk/impact will result in moderate alteration of the environment and can be reduced or avoided by implementing the appropriate mitigation measures and will only have an influence on the decision-making if not mitigated.</li> <li>• <b>High (2)</b> - The risk/impact will result in major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision making; and</li> <li>• <b>Very high (1)</b> - The risk/impact will result in very major alteration to the environment even with the implementation on the appropriate mitigation measures and will have an influence on decision making.</li> </ul>

Confidence	The degree of confidence in predictions based on available information and specialist knowledge
	<ul style="list-style-type: none"> <li>• <b>Low</b> - Based on the availability of specialist knowledge and other information.</li> <li>• <b>Medium</b> - Based on the availability of specialist knowledge and other information.</li> <li>• <b>High</b> - Based on the availability of specialist knowledge and other information</li> </ul>

Impacts are evaluated for the different phases of the proposed project. Impacts have been evaluated with and without mitigation in order to determine the effectiveness of mitigation measures on reducing the significance of a particular impact. The Assessment is presented in the following section and further in the Environmental Management Plan (EMP).

## 9. IMPACTS ASSESSMENT

The purpose of this section is to assess and identify the most pertinent environmental impacts by describing certain quantifiable aspects of these impacts and to provide possible mitigation measures to minimize the magnitude of the impacts that are possibly deriving from the various activities that constitute the proposed minerals prospecting and exploration activities within EPL 9110. Comments and concerns raised during the public consultation process have been considered and included.

TABLE 8 – ECOLOGICAL/BIODIVERSITY IMPACT ASSESSMENT TABLE

<b>Impact</b>	Minerals prospecting and exploration activities in general pose impacts towards the diversity of species within the various habitats by reducing population numbers of certain species.
<b>Nature of impact</b>	<p>Loss of Habitat and species during exploration activities such as drill rig preparation, tracks creation and general movement in the area. The most vulnerable species are reptiles and birds.</p> <p>Some exploration activities such as tracks creation, drill site preparations and, camping area preparation require removal of some plants to a small extent therefore affecting the flora status of the area.</p> <p>Taking into account that the EPL overlays farmlands where commercial farming is practiced, the presence of project personnel and vehicles may disturb domestic animals and scare away the wild animal.</p> <p>The presence of people in the area could also influence livestock left, illegal hunting or poaching.</p> <p>No specialist fauna and flora studies were commissioned for the EIA. Specialist studies were deemed unnecessary for this environmental impact assessment due to low intensity and extent of the activities. Exploration may occur at designated sites throughout the EPL but the total activity footprint as a percentage of the total areas of each habitat is estimated to be very low.</p>
<b>Status</b>	Negative
<b>Spatial Extent</b>	Local
<b>Duration</b>	Long term

<b>Consequence</b>	Substantial
<b>Probability</b>	Very Likely
<b>Reversibility</b>	Partially
<b>Mitigation Measures</b>	<ul style="list-style-type: none"> <li>- Though the habitats will remain relatively undisturbed due to the very low percentage footprint of activities planned, without prior knowledge of the whereabouts of the vulnerable, threatened and critically endangered species and their preferred habitat, it may not be possible to prevent an impact, regardless of how small it might be.</li> <li>- The planning of the activity's layout must endeavor to reduce the footprint to a minimum without compromising the realistic needs of the business operation and making decisions that will safeguard against indiscriminate habitat alteration.</li> <li>- If any topsoil or grass exists, when removal is required then this should be stockpiled for use during rehabilitation.</li> <li>- Engage interested stakeholders to participate on site in the rescue and relocation of indigenous and protected flora.</li> <li>- Undertake Plant and animal Search and Rescue prior to the commencement of operations.</li> <li>- Driving only on existing roads (national roads and existing tracks) as far as practically possible.</li> <li>- Habitat loss for fauna and flora species should be kept to a minimum with footprint areas being restricted to the direct operational areas only.</li> <li>- In addition, where possible, activities are to be aligned along previously disturbed areas.</li> <li>- No wandering around the site, collecting of plant species or hunting should be allowed.</li> <li>- Rehabilitation must restore the disturbed sites, as far as is possible to their prior state to mitigate the visual impact and to allow for the best possible re- colonization of the site, by plants and animals.</li> <li>- If targeted rock units have protected or special plants, the proponent should seek a specialist opinion on how to preserve that plant species, with possible relocation.</li> <li>- Notice should be given at least two (2) weeks in advance to indicate the flying times for geophysical surveys, so that these surveys do not coincide with hunting seasons to scare away the animals.</li> <li>- Cleared vegetation that might be of interest to the biomass or coal production must be gathered and handed over to ensure harmonious continuation of both activities.</li> <li>- No onsite vegetation should be cut or used for firewood related to the project's operations. The Proponent should provide firewood for his onsite camping workers from authorized firewood producer or seller.</li> </ul>



		<ul style="list-style-type: none"> <li>- Working sites should be fenced off to keep wild and domestic animals out.</li> <li>- Environmental awareness on the importance of biodiversity preservation should be provided to the workers.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	Without Mitigation	Moderate (3)
	With Mitigation	Low (4)
<b>Ranking of Impact</b>		3
<b>Confidence Level</b>		Medium

TABLE 9 - NOISE IMPACT ASSESSMENT TABLE

<b>Impact</b>	Noise cause by project activities (drilling operations, machineries, and vehicular movements)
<b>Nature of impact</b>	<p>Disturbance of sense of place and the effect on tranquil ambient noise levels.</p> <p>Hearing problems to operators if noise generation is prolonged and not managed.</p> <p>Potential noise sources during the exploration activities could originate from vehicles, hammers, powered hand tools, excavators, and drill rigs. The nuisance factor of these noise sources will depend on the proximity of the activities to the national road, homesteads and sensitive animal habitats.</p>
<b>Status</b>	Negative
<b>Spatial Extent</b>	Local
<b>Duration</b>	Temporary/ Permanent
<b>Consequence</b>	Substantial/Severe
<b>Probability</b>	Likely
<b>Reversibility</b>	Partially
<b>Mitigation Measures</b>	<ul style="list-style-type: none"> <li>- The Occupational Safety and Health Administration (OSHA) guidelines set legal limits on noise exposure in the workplace. These limits are based on a worker's time weighted average over an 8-hour day. With noise, OSHA's permissible exposure limit (PEL) is 90dBA for all workers for an 8-hour day. The OSHA standard uses a 5dBA exchange rate. This means that when the noise level is increased by 5dBA, the amount of time a person can be exposed to a certain noise level to receive the same dose is cut in half.</li> <li>- The WHO guideline on maximum noise levels to prevent hearing impairment set noise level limits at an average of 70 dBA over a 24-hour period with maximum noise levels not exceeding 110 dBA during the period. These latter limits would apply if the daytime shift were prolonged beyond the 8-hour day.</li> <li>- The nuisance factor of these noise sources will depend on the proximity of the exploration activities to the national road, homesteads, and sensitive animal habitats.</li> <li>- PPE is considered an acceptable mitigation, but a less desirable option to control exposures to noise.</li> </ul>

		<ul style="list-style-type: none"> <li>- Limiting the amount of time, a person spends at a noise source.</li> <li>- Monitoring personnels' hearing, before, during (each year if employed longer than one year) and after employment, as a minimum.</li> <li>- Machineries and vehicles (moving and stationed) should be serviced regularly.</li> <li>- A noise management standard operating procedure (SOP) for the activities happening on-site should be developed.</li> <li>- Avoid generating unnecessary noise by making sure that equipment that are not in use are always turned off and by avoiding operations during odd hours.</li> <li>- Landowners should be informed prior drilling over the weekends or at other times not outlined in this document.</li> <li>- It is recommended that any complaints regarding noise be recorded and included in the environmental reports. Should complaints persist then a survey by a suitably qualified and independent hygienist will be required.</li> <li>- Transportation routes should be planned for trucks such that they pass as far away as possible from noise sensitive receivers, a restriction of the hours of movement, e.g., not allowing the transport of material during the noise sensitive hours of the night can mitigate noise impacts.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	<b>Without Mitigation</b>	Moderate (3)
	<b>With Mitigation</b>	Low (4)
<b>Ranking of Impact</b>		3
<b>Confidence Level</b>		Medium

TABLE 10 - DUST IMPACT ASSESSMENT TABLE

<b>Impact</b>	Dust generation during exploration activities (e.g., vehicular movement, drilling operation, drill rig preparation) may result in dusty conditions.
<b>Nature of impact</b>	<p>Tempering of the ambient air quality in the surrounding area</p> <p>Fauna and flora alike could be impacted as ecosystem functioning is possibly affected.</p> <p>Negative effects of dust on personnel working at the drilling site are likely to occur if dust suppression techniques are not employed and personal protection equipment is not used to safeguard the health of personnel.</p>
<b>Status</b>	Negative
<b>Spatial Extent</b>	Local
<b>Duration</b>	Medium term
<b>Consequence</b>	Substantial
<b>Probability</b>	Very Likely
<b>Reversibility</b>	Partially
<b>Mitigation Measures</b>	<ul style="list-style-type: none"> <li>- Natural weather conditions can create very dusty atmospheric conditions. The exploration activities contribute very little to the widespread ambient conditions that often prevail. Cars travelling on the access roads can create dust plumes trailing behind them.</li> <li>- Dust suppression techniques should be employed. However, this scarce resource cannot be applied continuously and indiscriminately.</li> <li>- Avoid activities that create excessive dust on extremely windy days.</li> <li>- Personnel are required to wear personal protection equipment if excessive dust is created for prolonged working periods.</li> <li>- Employees should be made aware of negative effects of dust inhalation.</li> <li>- Water sprays at the various components will effectively keep dust from blowing into the atmosphere.</li> </ul>

		<ul style="list-style-type: none"> <li>- The road network within the EPL site can be sprayed with water and other dust suppressants during dry dusty conditions.</li> <li>- To mitigate gaseous pollutants released from the combustion of hydrocarbons, use of high-quality fuels will ensure quantities released per unit weight of product are at levels within environmental limits.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	Without Mitigation	Moderate (3)
	With Mitigation	Low (4)
<b>Ranking of Impact</b>		3
<b>Confidence Level</b>		Medium

TABLE 11 - WASTE IMPACT ASSESSMENT TABLE

<b>Impact</b>	Generation of waste during the proposed project activities.
<b>Nature of impact</b>	<p>Domestic waste and waste from maintenance work performed on the machinery can potentially cause unpleasant odor, sight for the people in the surrounding as well as disturbance to surface and ground water.</p> <p>The dumping of general waste within the camp, drilling sites and surrounding areas could prove hazardous to wildlife and livestock. This could also lead to general environmental degradation.</p>
<b>Status</b>	Negative
<b>Spatial Extent</b>	Local
<b>Duration</b>	Medium term
<b>Consequence</b>	Moderate
<b>Probability</b>	Likely
<b>Reversibility</b>	Partially
<b>Mitigation Measures</b>	<ul style="list-style-type: none"> <li>– Waste generation is likely to be limited on site and will primarily be domestic waste. This material will be stored properly until safe disposal off-site.</li> <li>– The domestic waste, which is separated from all paper and organic materials, is taken to the nearest official dumpsite.</li> <li>– Collection and disposal of waste must be effective enough to not impact any of the receptors.</li> <li>– Oil from the servicing of the vehicles and machines is collected in drums and is taken together with all other industrial waste that is generated on site to the nearest hazardous waste site.</li> <li>– A certificate of disposal needs to be kept on file.</li> <li>– Personal protection equipment (PPE) can protect personnel from exposure to disease or toxic chemicals.</li> <li>– Groundwater is a scarce and valuable resource in Namibia and must be protected at all costs. It must still be protected from pollutants since it can act as a conduit for the transfer of pollutants to secondary receptors such as the ocean. Additional boreholes are to be drilled to generate data about the groundwater quality and quantity when exploration intensifies.</li> </ul>

		<ul style="list-style-type: none"> <li>- The proponent must follow the provisions of the Water Act so that they do not in any way damage the susceptible water resources.</li> <li>- Sewerage created at the camp or management offices either needs to be deposited directly into approved and permitted French drains or removed offsite. If the latter is to be done, then sealed sewerage tanks are required. The regulations under the Water Resource Management Act need to be consulted with regards to the erection of French drains near water courses. They cannot be constructed within 100m of the banks of a water course.</li> <li>- Some wastes are dangerous to fauna and flora; Animals should not be able to access the waste management area; waste must be contained so that it cannot enter the naturally vegetated areas beyond the accessory works area.</li> <li>- Storage of hazardous liquid waste must by law follow industry standards. These standards will be communicated in fuller details by the fuel supplier. Ideally, self-110% bunded containers should be brought to site and placed upon sealed surfaces with waste collection sumps.</li> <li>- Soil which is contaminated by used hydrocarbons needs to be relocated to a remediation cell where the addition of fertilizer, air and water will within a year be suitable for re-use.</li> <li>- Good housekeeping</li> <li>- Training and awareness for company personnel and the public will inform them of those wastes that may cause harm, pollute the soil, groundwater, or air (if particulate).</li> <li>- Practice reusing, recycling of products.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	<b>Without Mitigation</b>	Moderate (3)
	<b>With Mitigation</b>	Very low (5)
<b>Ranking of Impact</b>		4
<b>Confidence Level</b>		Medium

TABLE 12 - VISUAL IMPACT ASSESSMENT TABLE

<b>Impact</b>	Visual impact caused by the operational activities
<b>Nature of impact</b>	Impact on visual resources would be considered unfavorable if the landscape were significantly degraded or modified. Changes to the aesthetic appeal of the area due to the presence of people, vehicles, and machinery . Visible changes to habitats due to human activities
<b>Status</b>	Negative
<b>Spatial Extent</b>	Local
<b>Duration</b>	Temporary
<b>Consequence</b>	Moderate
<b>Probability</b>	Very Likely
<b>Reversibility</b>	Yes
<b>Mitigation Measures</b>	<ul style="list-style-type: none"> <li>– The domestic waste, which is separated from all paper and organic materials, is taken to the nearest official dumpsite.</li> <li>– As far as is possible existing roads and tracks are used to access target sites for exploration.</li> <li>– Personnel to be trained regarding the observable signs of faunal and floral biodiversity and the avoidance of habitat disturbance.</li> <li>– Minimize the footprint of personnel, vehicles, and machinery.</li> <li>– Where new roads are constructed, the methods should be low intensive and possibly use manpower and not machines.</li> <li>– The remains of all structures that may have been erected at the EPL shall be demolished and removed on completion of the project.</li> </ul>



		<ul style="list-style-type: none"> <li>- Care must be taken to ensure that all rehabilitated areas are similar to the immediate environment in terms of visual character, vegetation cover and topography and any negative visual impacts will be rectified to the satisfaction of the MEFT officials.</li> <li>- Overburden topsoil will be placed back into excavation as part of the rehabilitation programme.</li> <li>- Rehabilitate habitats through the removal of obvious signs of human presence.</li> <li>- Remove all waste daily and dispose of it in the appropriate manner.</li> <li>- Removal of machinery from the sites if periods of inactivity are protracted.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	Without Mitigation	Moderate (3)
	With Mitigation	Low (2)
<b>Ranking of Impact</b>		3
<b>Confidence Level</b>		Medium

TABLE 13 - HERITAGE IMPACT ASSESSMENT TABLE

<b>Impact</b>	Heritage sites destruction during prospecting and exploration activities	
<b>Nature of impact</b>	Possible destruction to heritage sites	
<b>Status</b>	Neutral	
<b>Spatial Extent</b>	Local	
<b>Duration</b>	Long term	
<b>Consequence</b>	Substantial	
<b>Probability</b>	Unlikely	
<b>Reversibility</b>	Partially	
<b>Mitigation Measures</b>	– A 'chance find' of any potential heritage site should be communicated to the police and the National Heritage Council of Namibia. If activities occur at the location where a 'chance find' has been made, then the activities should cease until the necessary authorities have visited the site and provided the go ahead to proceed with activities.	
<b>Significance of Impact = Consequence x Probability</b>	Without Mitigation	Moderate (3)
	With Mitigation	Low (4)
<b>Ranking of Impact</b>	4	
<b>Confidence Level</b>	Medium	

TABLE 14 - LANDUSE IMPACT ASSESSMENT TABLE

<b>Impact</b>		Conflict with lands use of the area
<b>Nature of impact</b>		Possible conflict with community during the implementation of the project (e.g., issues related to access and security)
<b>Status</b>		Negative
<b>Spatial Extent</b>		Local
<b>Duration</b>		Short term
<b>Consequence</b>		Substantial
<b>Probability</b>		Unlikely
<b>Reversibility</b>		Partially
<b>Mitigation Measures</b>		<ul style="list-style-type: none"> <li>- The EMA requires that permission be provided by the competent authorities for the listed activity.</li> <li>- Update stakeholders register regularly.</li> <li>- Actively engage landowners regularly to maintain open channels of communication</li> <li>- The proponent is subservient to the conditions laid down by the guidelines / conditions and the law that upholds it. The implementation of the exploration programme will be in accordance with the approved Environmental Management Plan (EMP).</li> <li>- The communities of neighboring farms may have a claim to the grazing rights of the area. Good communications for example may prevent livestock injury where excavations are present during exploration.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	<b>Without Mitigation</b>	Moderate (3)
	<b>With Mitigation</b>	Low (4)
<b>Ranking of Impact</b>		3
<b>Confidence Level</b>		Medium

TABLE 15 - SOCIO ECONOMIC IMPACT ASSESSMENT TABLE

<b>Impact</b>		Exploration activities related to the project
<b>Nature of impact</b>		Employment creation
<b>Status</b>		Positive
<b>Spatial Extent</b>		National
<b>Duration</b>		Long term
<b>Consequence</b>		Slight
<b>Probability</b>		Very Likely
<b>Reversibility</b>		Yes
<b>Mitigation Measures</b>		<ul style="list-style-type: none"> <li>- Where possible, local persons should be employed depending on the level of skills they have.</li> <li>- Employment will result should the project be permitted.</li> <li>- Promote local procurement of goods and services.</li> </ul>
<b>Significance of Impact = Consequence x Probability</b>	<b>Without Mitigation</b>	Low + (4)
	<b>With Mitigation</b>	Very low + (5)
<b>Ranking of Impact</b>		5
<b>Confidence Level</b>		Medium

## 10. DECOMMISSIONING AND REHABILITATION

Disturbance of the earth's surface by exploration activities may result in removal of existing vegetation and ecosystems within the disturbed area. The impacts are significant, but localized to the disturbed area, and the overall extent of the impact is determined by the concentration of the activity and the sensitivity of the disturbed ecosystems. The impact on the environment can be lessened by planning with future closure in mind. When an exploration area is abandoned the infrastructure and altered landscape can affect the safe access of wildlife and public if not rehabilitated. The altered habitat may or may not promote the re-establishment of organisms once found there. Visual rehabilitation to the original state is not always practical due to economic factors.

The objectives of the closure and decommissioning are to:

- Provide a safe and stable landform compatible with the intended final use.
- Comply with relevant regulatory requirements and attain regulatory consensus on the successful closure and rehabilitation of the Project area.
- Complete the closure, decommissioning and rehabilitation works as quickly and cost effectively as possible whilst achieving primary objectives
- Produce a final “walk away” landform that is stable and that blends aesthetically into the surrounding landforms, yet as far as possible does not limit possible future land uses

### 10.1. SITE REHABILITATION

Proponent should keep the disturbed areas to a minimum, plants should not be removed unless necessary; selective exploration should be adopted so that the entire site is not cleared and affected at once; backfilling the topsoil should be done as soon as possible where soil was removed, therefore topsoil should not be piled up for a long time as it will lose its natural nutrient content.

### 10.2. PLANNING FOR REHABILITATION

The proposed post exploration land-use will also influence the procedure and the plant species used for rehabilitation.

The following are the basic rehabilitation practices as summarized after the Minerals Council of Australia (1998), which with appropriate modifications, will apply to most disturbed areas.

1. Making Safe: After planning for rehabilitation, the first step is to clean up and make the area rehabilitated, safe. This involves the following:
  - Removal of infrastructure and unused or unwanted equipment. No facilities or equipment should remain on site unless with the written approval of the landowner or relevant authority.

- Removal of rubbish for disposal at approved sites. Care is required with residual toxic or hazardous materials including contaminated packaging and containers.
2. Erosion Control: Progressive rehabilitation will be undertaken to stabilize disturbed areas as quickly as practical and to limit erosion.
- Restrict clearing to areas essential for the works.
  - Windrow vegetation debris along the contour
  - Minimize length of time soil is exposed.
  - Divert run-off from undisturbed areas away from the works.
3. Topsoil Management: The rehabilitation strategy may include the following measures which are designed to minimize the loss of topsoil material, respread on rehabilitated areas and promote successful vegetation establishment.
- Minimize the length of time that topsoil material is to be stockpiled.
  - Respread topsoil material in even layers at a thickness appropriate for the landform and land capability of the area to be rehabilitated.
  - Topsoil stockpiles are located in areas away from drainage lines or windy areas in order to minimise the risk of soil and wind erosion.
  - Rehabilitation areas of returned topsoil will be ripped, with care taken not to bring subsurface materials to the surface (e.g., large rocks). Ripping should only be sufficient to allow equipment to work efficiently. Ripping along slopes should be along contour.

## 11. CONCLUSION AND RECOMMENDATION

The aim of this environmental scoping assessment was to identify the potential impacts associated with the proposed exploration activities on EPL 9110, to assess their significance and recommend practical mitigation measures. The public and all directly affected stakeholders are consulted as required by the EMA and its 2012 EIA Regulations (Section 21 to 24). The public is informed via the four (4) newspapers advertisement used for this assessment. Posted notices and emails were also shared with some identified stakeholders.

Due to the limited scope of the proposed activities and the use of a step-by-step approach in advancing operations, the overall severity of potential environmental impacts of the proposed project activities on the receiving environment will be of medium magnitude, temporary duration, localized extent, and high probability of occurrence.

All impacts are provided with mitigation measures, minimized, or avoided to acceptable degrees provided that the measures are taken into consideration.

Overall, the following are the primary sensitivities in the area: The risk of groundwater pollution is increased by the water table's extreme shallowness; The area is home to a wide variety of indigenous and protected tree species, as well as native fauna; the scorching summers may have an impact on the workforce by leading to dehydration and sunburn; and commercial farming activities support the local population. These systems of subsistence will be impacted by uncontrolled exploration activities.

Based on the conclusions of this EIA Report, it is thus recommended that an Environmental Clearance Certificate be provided for the planned project activities (ECC). When implementing the proposed program, the Proponent shall consider the following critical requirements:

- If applicable, the Proponent will negotiate Access Agreements with landowners.
- The Proponent is responsible for obtaining all additional permits that may be required.
- In accordance with all applicable national rules, the Proponent shall comply with all terms of the EMP and conditions of the Access Agreement to be signed between the Proponent and the landowner/s.
- In cases where baseline information, national or international guidelines, or mitigation measures have not been supplied or do not adequately address the site-specific project effect, the Proponent must use the precautionary approach/principles.

## REFERENCES

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## **APPENDIX A – ENVIRONMENTAL CONSULTANTS CV**



# LOVISA NANGULA AMWELE

ENVIRONMENTALIST (Cand.Sci.Nat)

## ABOUT

I am a skillful environmentalist with an aggregate experience of over five (5) years in the field of environmental management and related sphere. I have a vast knowledge and understanding of various environmental management policies and legislation. I have been hard at work establishing my personal reputation as a mature critical problem solver and effective communicator driven by a strong set of ethical principles founded in social and environmental awareness. My objectives are to secure a challenging position, where I can utilize my abilities when granted the opportunity.

## WORK EXPERIENCE



ENVIRONMENTAL OFFICER  
GECKO EXPLORATION AND GEOKEY CONSULT CC  
APRIL 2021 TO DATE

- Writing and compilation of Environmental Impact Assessments (EIAs) and Environmental Management Plans (EMPs) for relevant company activities;
- Compiling of bi-annual environmental compliance reports for all company's projects as a requirement by the Ministry of Environment Forestry and Tourism (MEFT);
- Application for water abstraction and discharge permits from the Department of Water Affairs (DWA);
- Compilation of new applications and renewals of different Mineral licenses for the company from the Ministry of Mines and Energy (MME);
- Compilation of minerals export, fuel/diesel tanks installation permits applications from MME;
- Various activities pertaining to environmental baseline and continuous monitoring at various projects held by the company;
- Enforcement of Environmental compliance as required by certain policies, legislations and standards;
- Stakeholders engagement and communication;
- Spatial analysis and maps compilation using Geographic Information System (GIS) services as required for various projects using Google Earth, QGIS and ArcGIS;
- Project Management;
- Implementation of Environmental Management Systems
- Review and evaluation of Bid documents
- General administrative duties.

ASSISTANT ENVIRONMENTAL AND GIS PRACTITIONER  
ENVIRONMENTAL COMPLIANCE CONSULTANCY (ECC)  
FEBRUARY 2020 TO MARCH 2021

- Managing the company's Geographic Information System (GIS) services as required and compile professional maps for various projects using Google Earth and ArcGIS;
- Involvement and leading the compilation of Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) reports for exploration, tourism, energy, biomass, telecommunication and construction activities;
- Application for environmental clearance certificates renewals and writing environmental compliance report for exploration and renewable energy related projects (solar parks and wind farms);
- Liaise and communicate with clients and relevant stakeholders
- Project Management & General administrative duties.

## PERSONAL DETAILS

NATIONALITY: Namibian  
PASSPORT/ ID: P0974884/  
93091000184  
DRIVERS LICENCE: Code B

RESIDENTIAL ADDRESS:  
Namibia : ERF 4414/3 Kemi Street,  
Ojomuise 8ste laan

LANGUAGE PROFICIENCY  
Oshiwambo - Excellent  
English - Excellent  
Afrikaans - Fair

## PROFESSIONAL SKILLS



1. Computer skills: Microsoft word, outlook, power point, excel, publisher and Internet.
2. Programs: Google Earth, ArcGIS, QGIS, MATLAB, SDT, SanFuture

## PERSONAL SKILLS



- Creative spirit
- Excellent Analytical and problem solving skills
- Reliable and professional
- Organized
- Team player
- Excellent communicator

## CONTACT



P: +264 814351689  
E: lovisanangula@gmail.com  
P.O. Box 51006, Bachbrecth, WHK  
Namibia

**MEMBERSHIPS**

Environmental Assessment  
Professionals of Namibia (EAPAN) -  
Emerging specialist and/or practitioner  
No. 224

International Association for Impact  
Assessment South Africa. No. 6542

South African Council of Natural  
Scientific Professions (SACNASP)  
No. 148697 (Cand. Sci. Nat)

**REFERENCES**

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Geokey Consult CC & Gecko Namibia  
T: +264 61 30 5444  
E: oliver@gecko.na

Philip Hooks - EAP  
Philip Hooks Consultant  
Cell: +44 7340 238047  
E: philip.nigel.hooks@gmail.com

Laina Wilhelm - Environmentalist  
Environmental Compliance Consultancy  
Cell: +264 81 438 2391  
E: lainawilhelm@gmail.com

Emerita Ashipala - EAP  
Earth Environmental Services  
Cell: +264 81 701 6851  
E: emerita.ashipala@gmail.com

Prof Karabo Shale - Faculty Research  
Manager - CPUT  
C: +27 82 042 7485  
E: shalek@cput.ac.za

CONTRACT ENVIRONMENTAL ASSESSMENT PRACTITIONER  
PHILIP HOOKS ENVIRONMENTAL CONSULTANT - 2018 to 2020

- Compilation of Environmental Impact Assessments (EIA) and Environmental Management Plans (EMP) for various projects.

ASSOCIATE ENVIRONMENTAL ASSESSMENT PRACTITIONER  
OMAVI GEOTECHNICAL & GEO - ENVIRONMENTAL CONSULTANTS CC

- Compilation of Environmental Impact Assessments (EIA) and Environmental Management Plans (EMP) for various projects

ASSOCIATE ENVIRONMENTAL ASSESSMENT PRACTITIONER  
EARTH ENVIRONMENTAL SERVICES

- Compilation of Environmental Impact Assessments (EIA) and Environmental Management Plans (EMP) for various projects

ENVIRONMENTAL MANAGEMENT INTERN  
GECKO NAMIBIA (Pty) Ltd  
JULY 2018 - JAN 2019

- Compiling of bi-annual environmental reports to comply with the requirement of Ministry of Environment Forestry and Tourism for exploration activities;
- Various activities pertaining to environmental baseline and monitoring (air and water quality) at the Okorusu Fluorspar mine, the Imerys-Gecko Okanjande Graphite mine, Gecko Salt project and at the Opuwo cobalt project;
- Maps compilation for various projects using Google Earth and ArcGIS;
- Involvement in the writing and compilation of Environmental Impact Assessment (EIA) reports for exploration activities;
- Data entry, data organization with quality control;
- Liaise and communicate with clients and relevant stakeholders
- Data interpretation and verification;
- Site visits and various aspects of fieldwork at Gecko's mineral exploration projects
- Enforce Environmental compliance as required by certain policies and standards

DEPARTMENT STUDENT TUTOR  
CAPE PENINSULA UNIVERSITY OF TECHNOLOGY :  
JANUARY 2018 - NOVEMBER 2019

- Review class material with students by discussing text, working solutions to problems, reviewing worksheets and other assignments
- Determining student's needs for assistance in other areas such as counseling and refers as necessary
- Assessed the students progress throughout weekly tutoring sessions

ENVIRONMENTAL INTERN  
ONIIIPA TOWN COUNCIL DEPARTMENT OF ENVIRONMENTAL HEALTH :  
JUNE 2017 and DECEMBER 2017

- Business inspection to ensure compliance
- Training on food safety manual
- Risk assessment at work and public places
- Environmental pollution and monitoring control
- Waste management and health education

**EDUCATION**

MASTERS: ENVIRONMENTAL MANAGEMENT

Cape Peninsula University Of Technology - CPUT | 2020 to 2022

B-TECH: ENVIRONMENTAL MANAGEMENT

Cape Peninsula University of Technology - CPUT | 2019

ND: ENVIRONMENTAL MANAGEMENT

Cape Peninsula University of Technology - CPUT | 2016 to 2018

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**CERTIFICATIONS**

ADVANCE PROJECT MANAGEMENT

University of Capetown | Present

SAFETY HEALTH AND ENVIRONMENT REPRESENTATIVE

National Occupational Safety Association (NOSA) | 2022

RADIATION SAFETY OFFICER

Namibian Uranium Institute | 2022

INTRODUCTORY EIA REPORT WRITING

International Association of Impact Assessment (IAIA) RSA | 2020

**SCHOLASTIC ACHIEVEMENTS  
AND AWARDS**



2019: Best 4th Year Student (CPUT)

2018: Best 3rd Year Student (CPUT)

2011: Overall best student in 4 subjects at TUCSIN

2009: Exemplary Hostel girl (Otjikoto SSS)

2009 – 2010: Member of the Learners Representative Council and Hostel Prefect (Otjikoto SSS)

2008: Awarded Best top 10 performers in Grade 10 (Otjikoto SSS)

## **APPENDIX B – ENVIRONMENTAL MANAGEMENT PLAN (EMP)**

## **APPENDIX C – BACKGROUND INFORMATION DOCUMENT**

EPL 9110

BACKGROUND INFORMATION DOCUMENT

## **BACKGROUND INFORMATION DOCUMENT**

For the proposed minerals  
exploration for base & rare  
metals, industrial minerals,  
precious metals, and semi-  
precious stones within **EPL 9110**

Near Tsumeb

**Oshikoto & Otjozondjupa Regions**



EPL 9110

BACKGROUND INFORMATION DOCUMENT

## INTRODUCTION

Alliance Environmental Consultancy CC (AEC) (herein referred to as the consultant) has been appointed by Philco One Hundred and Seventy-Three (herein referred to as the proponent) to act on their behalf in obtaining an Environmental Clearance Certificate (ECC) for the proposed minerals exploration on Exclusive Prospecting License (EPL) 9110. The project area is located approximately 16km East of Tsumeb and about 30km North of Grootfontein in the Oshikoto and Otjozondjupa Regions.

This site is accessible via the D3039 from the M75 main road north of Tsumeb. Alternatively, the EPL can also be accessible through D3021 from the C42 main road to Grootfontein. The EPL covers an area of approximately 78906 hectares. Figure (1 - 3) gives a detailed layout locale for the site.

The land - use of the EPL includes agriculture and freehold tourism and covers portions of the farms in the table below:

FARM NO.	FARM NAME		
540	VANADIA	826	OULAP
541	WINDPOORT	827	KLIPRAND
542	KARUCHAS REST	828	DON TSEBEB
659	AARHUIS	829	EMMANUEL
660	ACCRA	830	AANDVELD
662	ADEN	831	SWERWERSTROOM

669	BIRKENHEAD	832	AANDRUS
670	BOMBAY	833	CALAIS
676	MOOIDRAAI	834	MIDDELIN
694	COLOMBO	835	UIKRAAL
695	COOKTOWN	835	BRAKKIES
696	CORK	836	EBENEZER
698	DEAL	837	PANORAMA
700	DETROIT	837	ETHANIE
701	DOVER	837	BETHANIE
702	DEVON PORT	838	ELANDSVLAK
703	DRONTHEIM	1147	STARNBERG
705	CHRISTIANA	1149	NAWIB
706	CLEVELAND	1232	N/A
707	ABENAB	1233	OLD SMITHFIELD
714	DULUTH	1278	CUXHAVEN
756	GROSSILMENAU	1342	BRISBANE
825	EXCELSIOR	1343	GROOT BOSTON

## PURPOSE OF THE DOCUMENT

This document serves the purpose of informing interested and affected parties (I&AP) of the following:

- Proposed project location;
- Proposed activities pertaining to the project;
- The EIA process to be followed;
- How you can get involved.

We hereby encourage all I&APs to submit their comment/inputs/concerns on the proposed project activities.

Your comments will add value and enrich the Environmental Impact Assessment (EIA) Report as well as the Environmental Management Plan (EMP) that will be submitted to the competent authorities for decision making.



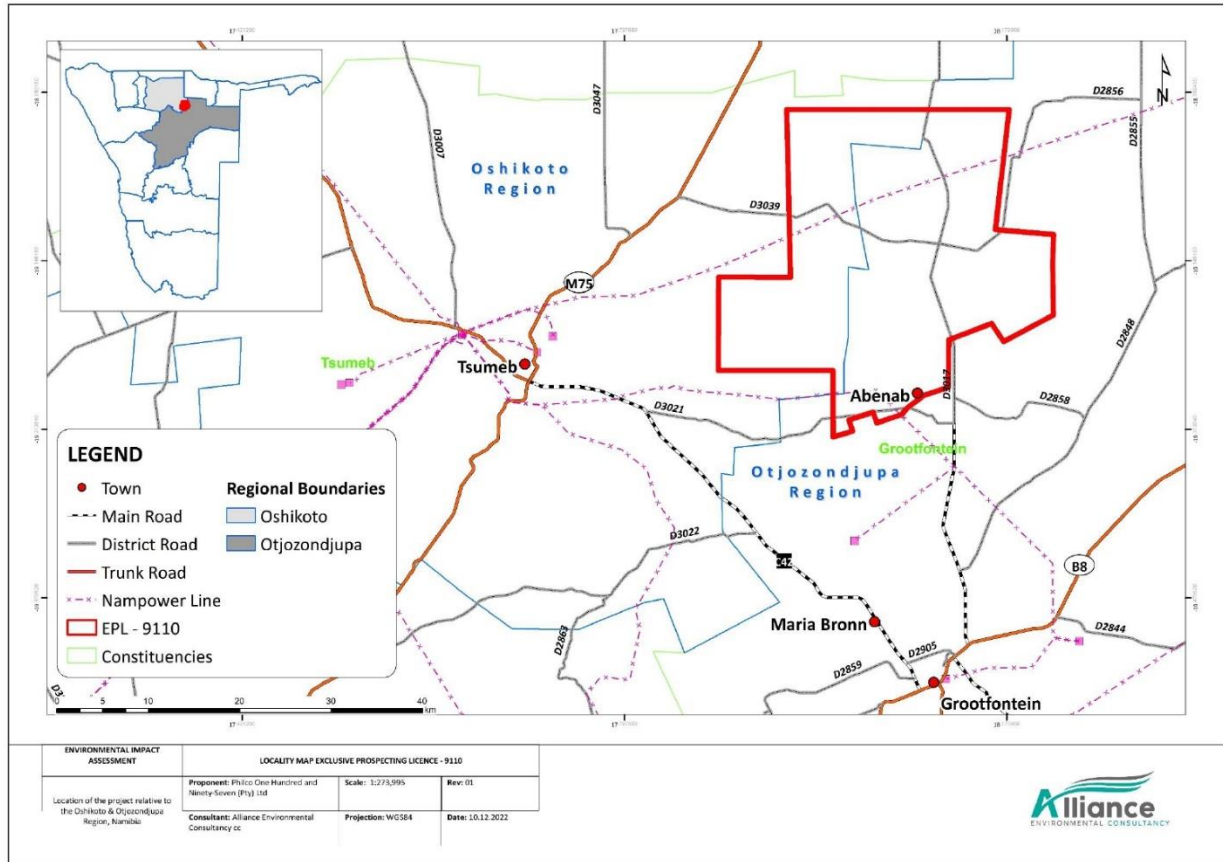


FIGURE 1 - PROJECT LOCALITY MAP

EPL 9110

BACKGROUND INFORMATION DOCUMENT

## PROJECT MOTIVATION

Mining activities in Namibia is the biggest contributor to the country's revenue and one of the largest economic sectors in the country. Although during exploration activities there are limited social benefits associated with the project, the following are the possible benefits of the proposed project activities:

- Contributions to annual license fees to the government through the Ministry of Mines and Energy (MME).
- Payments of lease agreements and services rendered.
- Provisional contracting opportunity for companies interested in mineral explorations are carried out throughout the mineral prospecting phase, which might take several years.
- Provision of contractual employment opportunities.
- Increase in knowledge on the subsurface which then contributes to development, and geoscience research.
- Contribute to the socio-economic development of the local area and region, even more, should viable discoveries be made.

## PROPOSED PROJECT PLAN AND ACTIVITIES

The projected mineral exploration activities are summarized as follows:

1. Exploration activities include a desktop review of existing data as well as past research. This is conducted in the general area to see if there are any prospective targets. This is done by purchasing high-resolution data from the Government and interpreting it as part of the first stage of exploration.
2. Regional reconnaissance assessment, which includes field-based activities such as regional mapping and sampling in order to identify and validate prospective targeted areas identified during stage 1. This step is only carried out if the stage 1 has identified some possible targets that need to be explored further.
3. Initial field-based activities such as widely distributed geological mapping, sampling, geo-physical surveying, and maybe widely spaced trenching and drilling to verify the feasibility of any identified local target based on the regional data acquired in step 2 above. The degree or depth of exploration carried out at this stage is contingent on the discovery of viable/prospective mineral resources.

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BACKGROUND INFORMATION DOCUMENT

To assess the viability of the delineated local targets, detailed local field-based operations such as localized site-specific detailed geology mapping, trenching, bulk sample, surveying, and detailed drilling are carried out. The most commonly used drilling techniques are Reverse Circulation Drilling (RC) or Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve. If the detailed exploration activities yield positive results, the exploration data will be compiled into a pre-feasibility report, and if the prefeasibility results are positive, a detailed feasibility study will be conducted on the identified site-specific area, which will include detailed site-specific drilling, bulk sampling, and laboratory testing/test mining. The following is a summary of the envisaged project development process that will be implemented during the proposed exploration activities:

- Planning and permitting
- Site preparation for the exploration team if required (temporary camps).
- Supporting infrastructure, access, energy, and water supply.
- Preparation of drill sites and drilling operations
- Decommissioning, final rehabilitation

#### ACCESS AND TRANSPORT

The location will be accessible through existing tracks and farm roads from the D3039 that branches from the M75 main road north of Tsumeb. Alternatively, the EPL can also be accessible via the D3021 that branches from the C42 main road to Grootfontein as far as practically possible. There will be no creation of tracks if the need arises, new access roads will be assessed for any environmental sensitivity and will be done in consultation with the landowners.

If the Proponent intends to continue with field-based activities, it is the Proponent's responsibility to negotiate access agreements with landowners and to ensure that all security measures to protect the land and the landowner's interests are always observed and as may be agreed upon with the landowners individually. Permission from landowners and appropriate authorities is required for any new tracks.

#### RESOURCES (WATER AND ELECTRICITY)

Exploration activities usually needs a supply of water which will be brought to the site. Should the company find good groundwater during the exploration activity, a borehole may be used as a

EPL 9110

BACKGROUND INFORMATION DOCUMENT

water source provided the permission of the community is given and the necessary abstraction permit is attained from the department of water affairs. Alternatively, if there are existing boreholes in the vicinity, they could be utilised with the landowner's permission and necessary permits in place. Again, only sustainable yields may be abstracted.

A diesel-powered generator will be used as needed for exploration equipment and lighting for the project. Alternatively, the use of solar power could be an option in this regards.

ACCOMMODATION, SUPPORTING  
INFRASTRUCTURE, AND EXPLORATION  
METHOD

- The exploration team will either be commuting from nearby settlements or will establish camp sites within the license area and with the permission of the community. The exploration team is envisioned to consist of fifteen (15) skilled and non-skilled workers.
- Portable toilets will be installed on-site and regularly serviced.
- Vehicles (especially pick up bakkies) and heavy machinery including drill rigs and truck will be used during the exploration phase of the project.

- Waste will be collected and deposited to the nearest municipal dumpsite e.g., Tsumeb Town dumpsite.
- Hydrocarbon tanks could be stored on-site. All hydrocarbon tanks will be appropriately stored and banded to hold 110% of the capacity of the tanks and all relevant permits should be applied for by the proponent as required (MME).
- The most commonly used drilling techniques are Reverse Circulation Drilling (RC) or Diamond Drilling. Both methods are applied in exploration, resource evaluation and subsequently in defining an ore reserve. The method is further explained in the EIA scoping report.

### **ALTERNATIVES CONSIDERED**

In terms of the Environmental Management Act, No. 7 of 2007 and EIA Regulations, alternatives considered should be analyzed. This is to ensure that during the design evolution and decision-making process, potential environmental impacts, costs, and technical feasibility have been considered, which leads to the best option(s) being identified.

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BACKGROUND INFORMATION DOCUMENT

Site Location

Minerals Occurrence Location: Several economic deposits are known to exist in various locations of Namibia, some of which have been explored by various companies throughout the years.

As part of the license, the proponent proposes to explore / prospect for potential economic minerals occurrences in this specific EPL. There are no alternative locations considered for explorations.

Equipment and infrastructure

The equipment and infrastructure options considered by the proponent are deemed sufficient at this stage of the project. However, in the world of revolving technology, the proponent may opt to employ other improved equipment/infrastructure in the future when deemed necessary in order to maximize the project output.

## **ENVIRONMENTAL ASSESSMENT PROCESS AND STEPS**

The EIA and EMP methodology applied for this project takes into account the provisions of the Environmental Impact Assessment (EIA) Regulations, 2012, and the Environmental Management Act (EMA) Act No. 7 of 2007. The process followed is detailed below and in Figure 2,

- a. Preparation of the Background Information Document (BID).
- b. Project registration or notification through the MEFT online Portal ([www.eia.met.gov.na](http://www.eia.met.gov.na)) or hand submission to the DEA.
- c. Project screening process.
- d. Preparation of the public notice to be published in two local newspapers twice for two consecutive weeks as well as site notices as part of the public consultation process as well. This process runs for (21 days). However, comments received after the stipulated period and before submission to the competent authority are also welcome.
- e. Preparation of the first Draft EIA/ Scoping and EMP Reports for client review, public and stakeholder inputs.
- f. Incorporation of comments and inputs from the client and I&APs into the reports for finalization.
- g. The final EIA/ Scoping and EMP reports are submitted to the competent authorities and the Environmental Commissioner in fulfilment of all the requirements of the Act and its Regulations.
- h. Stakeholders who are interested or affected by the proposed project will have additional fourteen (14) days to submit comments directly to the

EPL 9110

BACKGROUND INFORMATION DOCUMENT

Environmental Commissioner (EC). The application will be made available for additional comments on the MEFT digital Portal [www.eia.mef.gov.nq](http://www.eia.mef.gov.nq).

- i. If the Environmental Commissioner requires additional information about the project, the environmental practitioner will be alerted. Once provided-
- j. Wait for the Record of Decisions.

The process is also depicted in the diagram presented in Figure 3.

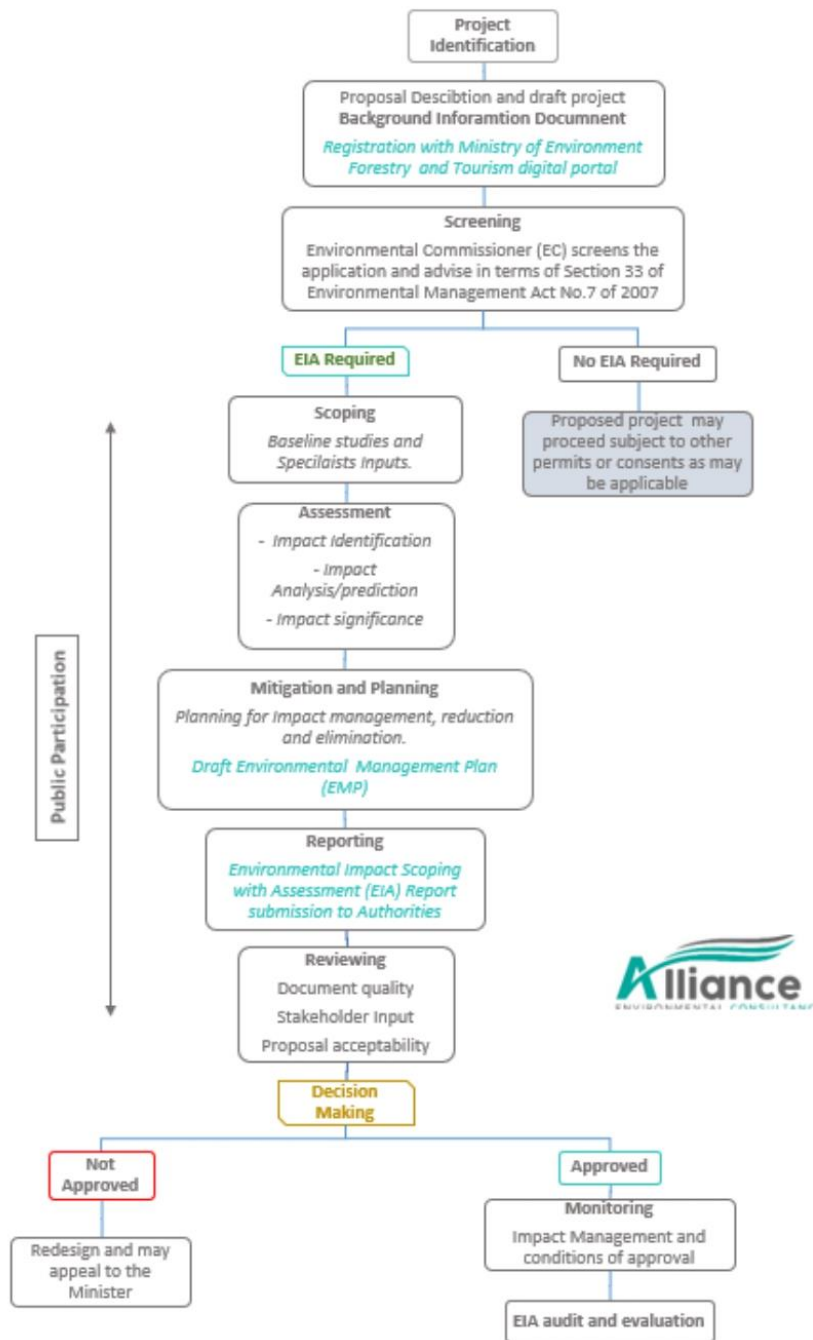


FIGURE 4 - EIA FLOW CHART BY AEC

EPL 9110

BACKGROUND INFORMATION DOCUMENT

## **EVALUATION OF POTENTIAL ENVIRONMENTAL IMPACTS**

Impacts are assessed and evaluated to identify the most pertinent environmental impacts by describing certain quantifiable aspects of these impacts and to provide possible mitigation measures to avoid and/or minimize the magnitude of the impacts that are possibly deriving from the various activities that constitute the proposed exploration activities by the proponent.

The identification of potential impacts included impacts that may occur during the exploration phases of the project. The assessment of impacts includes direct, indirect as well as cumulative impacts. In order to identify potential impacts (both positive and negative) it is important that the nature of the proposed projects is well understood so that the impacts associated with the projects can be assessed.

The process of identification and assessment of impacts includes:

- Determining the current environmental conditions in sufficient detail to establish a baseline against which impacts can be identified and measured.

- Determining future changes to the environment that will occur in a case where the activity does not proceed.
- Develop an understanding of the activity in detail to understand its consequences; and
- The identification of significant impacts which are likely to occur if the activity is undertaken.

The following potential impacts on the social environment during exploration and activities have been identified below and further discussed in the table that follows:

- Dust & Noise
- Health & Safety
- Visual
- Waste
- Ecological
- Groundwater and surface water
- Heritage & Socio-Economic



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BACKGROUND INFORMATION DOCUMENT

**POTENTIAL ENVIRONMENTAL ISSUES AND MITIGATION MEASURES**

The following table summarizes the potential environmental impacts associated with the proposed project.

POTENTIAL IMPACTS
NEGATIVE
- Possible destruction of vegetation and fauna through disturbance of the surface
- Mining projects if not proceeding with necessary precautions are likely to cause soil and water contamination, due to hazardous chemical spills and leaks from machinery/ heavy vehicles
- Noise pollution from sources such as power generation, drill rig operations, heavy vehicle engines as well as other sources
- Air pollution from the emission of carbon dioxide by machinery during the exploration of minerals
- Exploration activities are accompanied by huge equipment and camping which are foreign to the environment and therefore causes a visual impact to the environment and the community members.
- Possible disturbance to heritage/historically important area of interest.
POSITIVE

- The project will positively contribute to the socio-economic development of the country by creating wealth, job creation, the country's GDP through tax and license payments
- This proposed project will however also contribute to achieving the country's national goals of poverty reduction through skills and human development (improving living conditions of locals)

Any negative environmental impacts that will arise from the proposed activities will be substantially minimized, avoided, and/or mitigated in accordance with the Environmental Management Plan (EMP) and the best industry practices.

EPL 9110

BACKGROUND INFORMATION DOCUMENT

## **PUBLIC PARTICIPATION PROCESS**

Public participation is the cornerstone of the Environmental Impact Assessment process. These include the ongoing provision of sufficient information (in a transparent manner) to Interested and Affected Parties (I&APs). During the public participation process, I&APs will be given the opportunity to comment on the findings of the reports, during the specified comment periods.

I&APs are hereby invited to comment on environmental, social, and economic issues relating to the proposed project. The inputs from a broad variety of stakeholders will complement the EIA.

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BACKGROUND INFORMATION DOCUMENT

**GET INVOLVED**

To ensure that you are registered as an Interested & Affected party, complete the form with your comments, issues/concerns below and forward it to [info@enviro-aec.com](mailto:info@enviro-aec.com)

Your involvement is highly appreciated

**FOR THE PROPOSED MINERALS EXPLORATION ON EPL 91 10 NEAR TSUMEB, OSHIKOTO AND OTJOZONDJUPA REGIONS**

**REGISTRATION AND RESPONSE FORM FOR INTERESTED AND AFFECTED PARTIES**

DETAILS OF THE INTERESTED AND AFFECTED PARTY	
FULL NAME:	
NAME OF ORGANIZATION:	
POSTAL ADDRESS:	POSTAL CODE:
STREET ADDRESS:	POSTAL CODE:
TELEPHONE NUMBER:	FAX NUMBER:
CELL PHONE NUMBER:	E-MAIL ADDRESS:
INTEREST IN THE PROPOSED PROJECT:	
COMMENTS/QUESTIONS:	

## **APPENDIX D – ADVERTS, SITE NOTICES, STAKEHOLDER LIST, COMMUNICATION**

NEWSPAPER ADVERTS

Market Watch

Kleinadvertensies • Classifieds

SPERTYE: 13:00 TWE WERKSDAE VOOR PLASING
DEADLINES: 13:00 TWO WORKING DAYS PRIOR TO PLACEMENT

TEL: 061\*297 2175 FAX: 061\*239 638
EMAIL: classifieds@synergi.com.na

Geen advertensies sal telefonies aanvaar word nie.

No advertisements will be accepted telephonically.

Table with 2 columns: INHOUDSOPGAWE and CONTENTS. Lists various categories like Death Notices, Memorials, Lost, etc.

RATES & DEADLINES

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GINGERBREAD HOUSE DAY
Today is... Die opwindende nuwe manier om jou Kleinadvertensies bo die ander te laat uitstaan, teen net N55,00 meer word die opsak in KLEUR gedruk!

009 Vakatures Vacancies
CARWASH DRIVERS: Various positions available, (valid driver's license required), car washer cleaners, as well as cleaners for office and building cleaning in Windhoek.

010 Spesiale dienste Services
DO YOU URGENTLY NEED CASH? Park your car and get up to 45% of it's value! Cash in your account in 30 mint!

013 Bou en verf Construction
SPECIALS, SPECIALS, SPECIALS! Adriaan Oberholzer: Building & renovations. Specializes in roof sealing, painting, plumbing, building, paving, welding, etc.

016 To huur To Let
EON REAL ESTATE: Moth Centre (Maerua Mall). Up-market, 1 bedroom flat on first floor, under roof parking, N\$7 500 available December. Annelize: 081-1285-451.

035 Regskenningsgewings Legal Notices
LIQUIDATION ACCOUNTS AND PLANS OF DISTRIBUTION IN SEQUESTERED ESTATESOR COMPANIES BEING WOUND UP

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PUBLIC NOTICE
ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 8739, KHOMAS REGION

035 Regskenningsgewings Legal Notices
PUBLIC NOTICE
ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 9110, OSHIKOTO & OTJOZONDJIPA REGIONS

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All Interested and Affected Parties (I&APs) are hereby invited to register and submit comments duly motivated in writing on or before the 30 January 2023.

YOUR BLOOD IS THE BEST CHRISTMAS GIFT YOU CAN GIVE
WE NEED YOU! PLEASE DONATE BLOOD.
Monday, 12 December 2022
Tuesday, 13 December 2022
NAMBTS donate life
www.bts.com.na
e: pro@bts.com.na
t: 061 386 300

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AL-ANON Family groups offer help for friends and relatives of alcoholics. They provide assistance for people who live with alcoholics.
Mail: vollmerdj@telecom.na
Dawnnam@gmail.com
Cell: 081 256 6229
VENUE: cnr Lüderitz and Kasino Streets
DATE AND TIME: Thursdays at 19H00

Market Watch Kleinadvertensies • Classifieds

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TEL: 061\*297 2175 FAX: 061\*239 638 EMAIL: classifieds@synergi.com.na

No advertisements will be accepted telephonically.

Table with 2 columns: INHOUDSOPGAWE and CONTENTS. Lists various categories like Death Notices, Memoriam, and Real Estate.

RATES & DEADLINES

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BOOK & PAY FOR YOUR CLASSIFIED ADS ONLINE

Visit https://classifieds.my.na to log in via my.na account and follow the easy steps to upload your classified ad.

Advertisement for Evergreen Day featuring a pine tree and text: 'LOOK FOR AN EVERGREEN DAY... Today is...'

005 Kennisgewings Notices WECKE VOIGTS: Okakuveru-as back in stock, various colors available, price NS 2100, at Wecke & Voigts for you, shop 1, Maerua Lifestyle Center Windhoek. Tel:061-377000.

009 Vakatures Vacancies SHIPPING & BIOMASS DEVELOPMENT CONSULTANT: An exciting new opportunity has arisen with Fire and Flame Namibia (Pty) Ltd, a charcoal exporting and biomass trading company.

The position is based in Walvis Bay. Job requirements: \*Relevant Degree and 5 years experience, or professional Diploma and 7 years experience in Global Shipping, Logistics and Distribution.

010 Spesiale dienste Services

DO YOU URGENTLY NEED CASH? Park your car and get up to 45% of its value! Cash in your account in 30 min! No pay slip, no bank statement, just the car!

013 Bou en verf Construction

SPECIALS, SPECIALS, SPECIALS! Adriaan Oberholzer: Building & renovations. Specializes in roof sealing, painting, plumbing, building, paving, welding, etc.

016 To huur To Let

ACADEMIA: Bachelor flat to rent near Unam for single person. NS4 750 per month, NS2 500 deposit. Available 1 January 2023. W+E included. Call: 085-6324515 / 081-1279096.

025 Motors Vehicles

Mercedes-Benz C200; 2020 57 000 km NOW NS\$ 644 900

Market Watch To advertise call: The Classifieds t: 061-297 2055

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PUBLIC NOTICE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 8739, KHOMAS REGION

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 8739, Khomas Region.

Proponent: Etna Investments CC Commodities: Base and Rare Metals, Dimension stone, Industrial minerals, precious metals and Semi-precious stones.

Localty: Between Rehoboth and Windhoek Covering portions of farms: 20 Krumneck, 23 Lichtenstein Zukauf, 30 Krumhuk, 366,433,4,446 Lichtenstein, 367 Haris, 368 Melrose, 447 Gross Haigamas

035 Regskenningsgewings Legal Notices

PUBLIC NOTICE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 9110, OSHIKOTO & OTJONDJUPA REGIONS

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 9110, Oshikoto & Otjondjupa Regions.

Proponent: Phico One Hundred and Seventy-Three (Pty) Ltd Commodities: Base and Rare Metals, Industrial minerals, precious metals and Semi-precious stones.

Localty: Approximately 20km East of Tsumeb, covering a total area of 78906 Ha on about 50 farmlands including Aandrus 832, Abernab 707, Kliprand 827, Accra 660, Detroit 700 and more

035 Regskenningsgewings Legal Notices

PUBLIC NOTICE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 9110, OSHIKOTO & OTJONDJUPA REGIONS

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 9110, Oshikoto & Otjondjupa Regions.

Proponent: Phico One Hundred and Seventy-Three (Pty) Ltd Commodities: Base and Rare Metals, Industrial minerals, precious metals and Semi-precious stones.

Localty: Approximately 20km East of Tsumeb, covering a total area of 78906 Ha on about 50 farmlands including Aandrus 832, Abernab 707, Kliprand 827, Accra 660, Detroit 700 and more

AL-ANON Help for relatives of Alcoholics. AL-ANON Family groups offer help for friends and relatives of alcoholics. They provide assistance for people who live with alcoholics. Mail: vollmerdj@telecom.na

YOUR BLOOD IS THE BEST CHRISTMAS GIFT YOU CAN GIVE. WE NEED YOU! PLEASE DONATE BLOOD. Monday, 19 December 2022 Tuesday, 20 December 2022 Wednesday, 21 December 2022

LIFESTYLE



### Nobel awards to take place in Stockholm with full glitz and glamour

**N**obel laureates congregated in the Swedish capital Stockholm on Saturday for the first fully in-person award ceremonies complete with a formal banquet since the COVID-19 pandemic that curtailed events in the past two years.

The ceremony starts at 1500 GMT and features glamorous formal wear, with the men in white tie and tails and women in flowing gowns and elegant hairdos. Ceremonies in 2020 and 2021 were scaled back and there was no banquet. Many laureates from 2020 and 2021 will be attending this year as well as the 2022 winners – last year for example there was a ceremony but no laureates attended as they received their medals in their home countries.

Throughout this week the laureates have taken part in activities ranging from panel discussions to news conferences, finding time to visit schools and give lectures and attend alights show. "Given the challenges the world faces, it feels especially important to highlight Alfred Nobel's idea of international community," says Vidar Helgesen, executive director of the Nobel Foundation.

Five of the six Nobel prizes are awarded in Stockholm every year after a nomination process that is kept secret for the next 50 years. The Nobel Peace Prize is awarded in Oslo where separate festivities are held. Dynamite inventor Alfred Nobel left around 31 million crowns- about 1.8 billion crowns (\$174.2 million) in today's money according to the Foundation – to fund prizes for achievements in science, literature and peace awarded annually since 1901.

Among the laureates for 2022 is a former chairman of U.S. Federal Reserve, Ben Bernanke, who won the Nobel Economics Prize along with economists Douglas Diamond and Philip Dybvig for research on how propping up failing banks can stave off an even deeper economic crisis. The economics prize is a later addition to the original line-up, instituted by the Swedish central bank.

After the ceremony, there is a banquet in City Hall, attended by Sweden's royal family, government officials and dignitaries and business leaders from different countries. Swedish political party leaders are always invited to the banquet.

However Jimmie Akesson, leader of the anti-immigration Sweden Democrats, which became the country's second biggest party in an election in September election, was left off the guest list, with his party not deemed to be in keeping with the prizes' tenets.

The Nobel Foundation has also snubbed the ambassadors of Russia and Belarus, following Russia's invasion of Ukraine. Jailed Belarusian activist Ales Byalyatski, Russian rights group Memorial and Ukraine's Center for Civil Liberties won the 2022 Nobel Peace Prize. (\$1 = 10.3329 Swedish crowns) -i0l

**PUBLIC NOTICE**

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 8739, KHOMAS REGION**

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 8739, Khomas Region.

**Proponent:** Etna Investments CC

**Commodities:** Base and Rare Metals, Dimension stone, Industrial minerals, precious metals and Semi-precious stones.

**Locality:** Between Rehoboth and Windhoek Covering portions of farms: 20 krumneck, 23 Lichtenstein Zukauf, 30 Krumhuk, 366,433/4,446 Lichtenstein, 367 Haris, 368 Melrose, 447 Gross Haigamas

All Interested and Affected Parties (I&APs) are hereby invited to register and submit comments duly motivated in writing on or before the 30 January 2023. Registration and Background Information Documents (BID) for the project can be requested from the email address below.

**Email:** [info@enviro-aec.com](mailto:info@enviro-aec.com)  
**Cell:** +264857728929

**PUBLIC NOTICE**

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 9110, OSHIKOTO & OTJOZONDJUPA REGIONS**

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 9110, Oshikoto and Otjozondjupa Regions.

**Proponent:** Philco One Hundred and Seventy-Three (Pty) Ltd

**Commodities:** Base and Rare Metals, Industrial minerals, precious metals and Semi-precious stones.

**Locality:** Approximately 20km East of Tsumeb, covering a total area of 78906 Ha on about 50 farmlands including Aandrus 832, Abenab 707, Kliprand 827, Accra 660, Detroit 700 and more.

All Interested and Affected Parties (I&APs) are hereby invited to register and submit comments duly motivated in writing on or before the 30 January 2023. Registration and Background Information Documents (BID) for the project can be requested from the email address below.

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**Cell:** +264857728929

LIFESTYLE

# Can rice water strengthen and improve your hair growth?

**T**he practice of “dry scooping”, or ingesting pre-workout powders without water, has become dangerously popular among TikTok users.

Some individuals assert that dry scooping might hasten your body’s absorption of the chemicals and improve your exercise, but there is no

scientific basis for these assertions.

Additionally, there are a number of possible hazards associated with this technique, some of which may be significant.

Pre-workout powders are nutritional supplements designed to improve your workout by maybe offering certain advantages.

Increased training capacity, improved blood supply to working muscles, and prevention of weariness are a few of them.

Pre-workout substances that are often used include, according to the National Centre for Biotechnology Information, the following:

Caffeine increases vitality and concentration while reducing weariness.

Creatine may boost training adaptations and high-intensity exercise performance.

Beta-alanine may improve one’s capacity for high-intensity exercise and serves as a pH buffer for lactic

acid.

L-theanine is frequently used to counteract the jittery effects of caffeine and to increase attention.

L-arginine is a precursor to nitric oxide, which increases vascularity and blood flow throughout the body.

Citrulline malate is a renowned nitric oxide booster that the body easily converts to L-arginine.

Branched chain amino acids are particular amino acids that are frequently given to help in muscle protein synthesis and to stop muscle breakdown, but there is conflicting evidence about their efficacy.

Although pre-workout supplements gained popularity in the bodybuilding community, athletes from other sports also take them. The majority of manufacturers advise drinking the pre-workout supplement around 30 minutes before exercising, after combining it with water.

The majority of pre-workout powders are made to be dissolved in water. There are certain potentially dangerous health hazards when ingesting them dry.

Additionally, pre-workout powders often target adults over the age of 18 owing to their high caffeine content, which can be harmful if used in excess. Additionally, pre-workout supplements could have potentially dangerous ingredients.

Due to the participation of children, this makes the TikTok habit of dry scooping much more hazardous.

Here are the main dangers associated with dry scooping pre-workout powders and the reasons why TikTok specialists strongly advise against it.

**Accidental inhalation**

You run a higher danger of inhaling pre-workout powder while attempting to swallow it without water.

You might not be able to swallow pre-workout powder after putting a scoop in your mouth owing to its gritty feel. You could gasp for air as a result, inhaling powder into your lungs and nasal passages.

Aspiration is what that is. In extreme circumstances, it may cause lung irritation or infection.

**Heart-related side effects**

The amount of caffeine in many pre-workout supplements can surpass 300mg per serving. That’s comparable to the amount of caffeine found in three 237ml cups of coffee.

When the powder is combined with water and ingested gradually, the majority of individuals might be able to take this level of caffeine; nevertheless, dry scoops delivers a massive dosage of caffeine to your body at once.

Many individuals could find it to be too much to manage, especially those who are younger than 18. Such a high caffeine intake might cause severe blood pressure increases and uncontrolled heartbeats.

There has been at least one reported example of a social media influencer getting a heart attack from dry scooping a pre-workout powder.

**Intestinal problems**

Digestive problems have also been mentioned as a dry scooping disadvantage.

The sudden, massive ingestion of undiluted drugs with little fluids can cause symptoms including nausea, vomiting, diarrhoea and stomach cramps.

The majority of people may avoid these problems by simply blending the supplement with water.

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**FNB Fraud Awareness**

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**PUBLIC NOTICE**

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 8739, KHOMAS REGION**

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 8739, Khomas Region.

**Proponent:** Etna Investments CC

**Commodities:** Base and Rare Metals, Dimension stone, Industrial minerals, precious metals and Semi-precious stones.

**Locality:** Between Rehoboth and Windhoek Covering portions of farms: 20 krumneck, 23 Lichtenstein Zukauf, 30 Krumhuk, 366,433/4,446 Lichtenstein, 367 Haris, 368 Melrose, 447 Gross Haigamas

All Interested and Affected Parties (I&APs) are hereby invited to register and submit comments duly motivated in writing on or before the 30 January 2023. Registration and Background Information Documents (BID) for the project can be requested from the email address below.

**Email:** [info@enviro-aec.com](mailto:info@enviro-aec.com)  
**Cell:** +264857728929

**PUBLIC NOTICE**

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED MINERALS PROSPECTING ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 9110, OSHIKOTO & OTJOZONDJUPA REGIONS**

On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 9110, Oshikoto and Otjozondjupa Regions.

**Proponent:** Philco One Hundred and Seventy-Three (Pty) Ltd

**Commodities:** Base and Rare Metals, Industrial minerals, precious metals and Semi-precious stones.

**Locality:** Approximately 20km East of Tsumeb, covering a total area of 78906 Ha on about 50 farmlands including Aandrus 832, Abenab 707, Kliprand 827, Accra 660, Detroit 700 and more.

All Interested and Affected Parties (I&APs) are hereby invited to register and submit comments duly motivated in writing on or before the 30 January 2023. Registration and Background Information Documents (BID) for the project can be requested from the email address below.

**Email:** [info@enviro-aec.com](mailto:info@enviro-aec.com)  
**Cell:** +264857728929



SITE NOTICES PLACED AT DIFFERENT PLACES AROUND TSEMB

**PUBLIC NOTICE**

**ENVIRONMENTAL IMPACT ASSESSMENT PROCESS FOR THE PROPOSED EXPLORATION ACTIVITIES WITHIN EXCLUSIVE PROSPECTING LICENCE (EPL) 9110 OSHIKOTO AND OTJOZONDJUPA REGIONS**

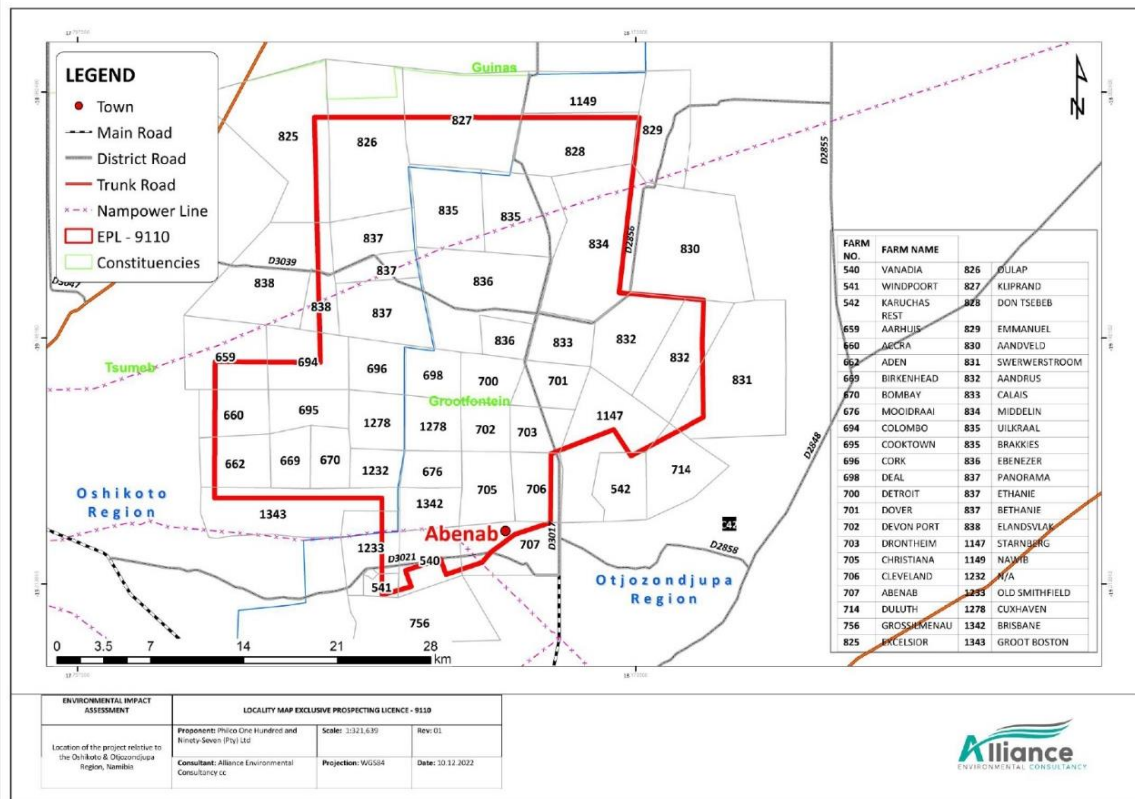
On behalf of the proponent, Alliance Environmental Consultancy CC (AEC) herewith gives notice in terms of the Environmental Management Act No. 7 of 2007 and Environmental Impact Assessment (EIA) Regulations for the proposed prospecting activities within EPL 9110.

An Environmental Scoping and Impact Assessment (ESIA) and Draft Environmental Management Plan (EMP) will be submitted to the Ministry of Mines and Energy (MME) and the Ministry of Environment Forestry and Tourism (MEFT) to support the application for an Environmental Clearance Certificate (ECC) for the proposed activities.

**Proponent:** Philco One Hundred and Seventy-Three (Pty) Ltd

**Commodities:** Base and rare metals, industrial minerals, precious metals and, semi-precious stones

**Location of the project area:** Approximately 16km East of Tsumeb and about 30km North of Grootfontein covering a large area of farmlands (Fg1).



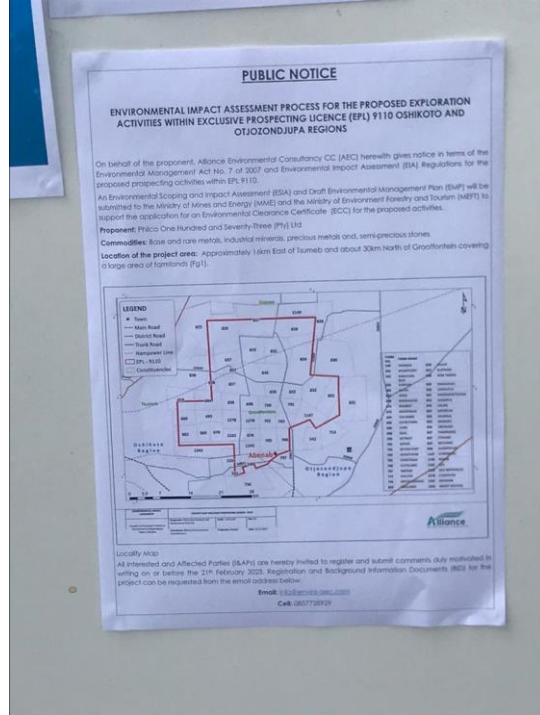
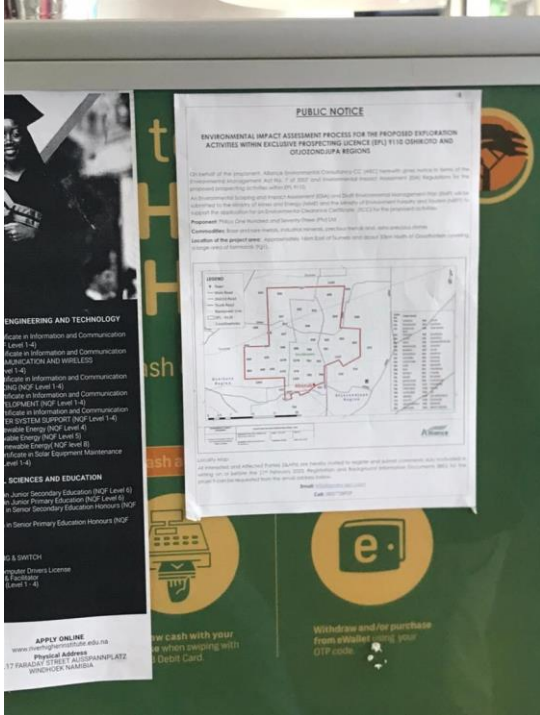
*Locality Map*

All Interested and Affected Parties (I&APs) are hereby invited to register and submit comments duly motivated in writing on or before the 21<sup>st</sup> February 2023. Registration and Background Information Documents (BID) for the project can be requested from the email address below.

**Email:** [info@enviro-aec.com](mailto:info@enviro-aec.com)

**Cell:** 0857728929

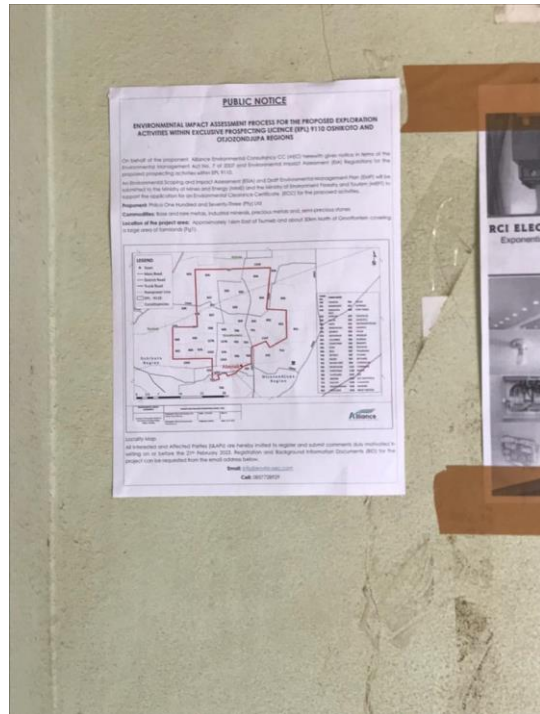
### WIMPY ENGINE SERVICE STATION NOTICE BOARD



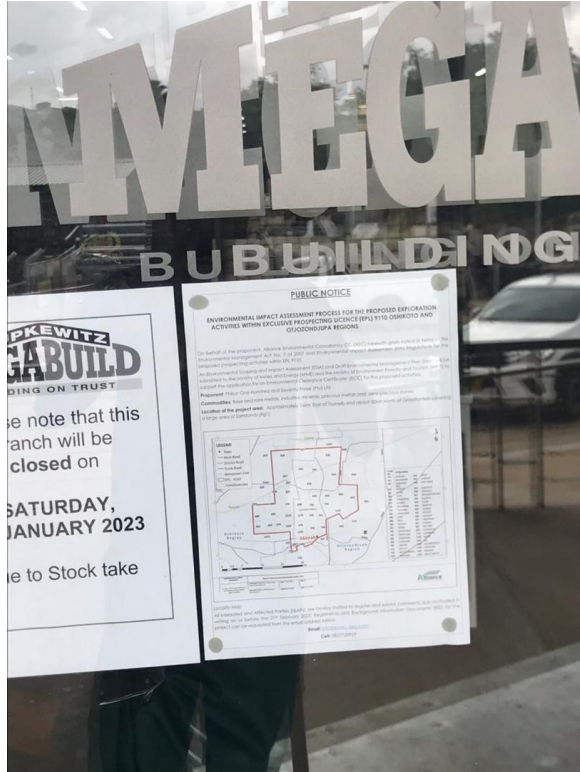
### COMMUNITY OPEN MARKET NOTICE BOARD



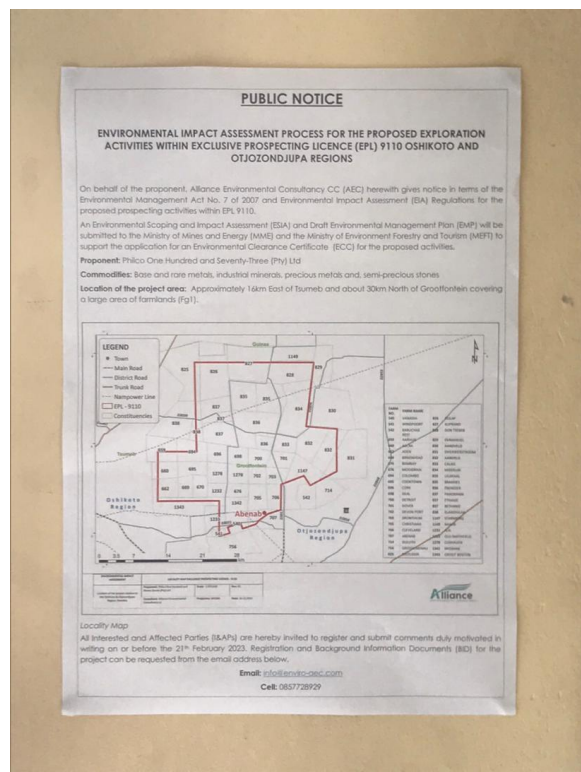
### POLICE STATION NOTICE BOARD



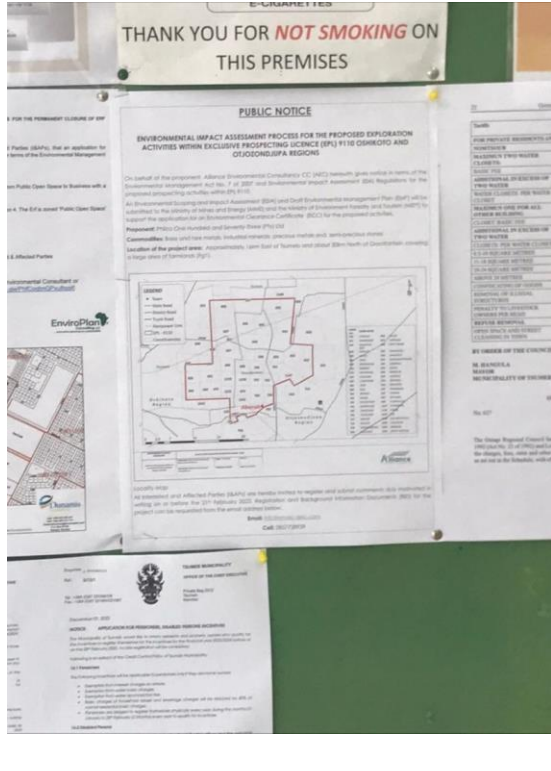
### PUPKEWITZ MEGA BUILD NOTICE BOARD



### AGRA NOTICE BOARD



### TSUMEB MUNICIPALITY NOTICE BOARD



## FORMAL INVITATION LETTER TO IDENTIFIED I&amp;APS



+264 81 435 1689 / +264 85 772 8929  info@enviro-aec.com

Postal Address: P. O. Box 51006, Bachbrectht, Windhoek, Namibia

17<sup>th</sup> of January 2023

## TO WHOM IT MAY CONCERN

Dear Sir/Madam,

**RE: STAKEHOLDER NOTIFICATION - ENVIRONMENTAL IMPACT ASSESSMENT (EIA) FOR THE PROPOSED MINERALS PROSPECTING WITHIN EXCLUSIVE PROSPECTING LICENSE (EPL) No. 9110 NEAR TSUMEB IN THE OSHIKOTO AND OTJOZONDJUPA REGIONS, NAMIBIA**

Alliance Environmental Consultancy CC hereby gives notice on behalf of Philco One Hundred and Seventy-Three (Pty) Ltd ("The Proponent") about the Environmental Impact Assessment (EIA) process for the proposed exploration activities for base and rare metals, industrial minerals, precious metals and, semi-precious stones on Exclusive Prospective License (EPL) 9110 near Tsumeb, in the Oshikoto and Otjozondjupa Regions (Figure 1).

The proposed prospecting activities are listed in the Environmental Management Act, 2007, (Act No. 7 of 2007) and the EIA Regulations 30 of 2012 and cannot be undertaken without an Environmental Clearance Certificate (ECC). In fulfilment of these environmental requirements, an Environmental Scoping and Assessment Report (ESAR) and Environmental Management Plan (EMP) will be submitted to the Ministry of Mines Energy (MME) and Ministry of Environment Forestry and Tourism in support of the application for an ECC.

As the landowner and or potentially Interested Affected Party (I&AP), we hereby inform you that Philco One Hundred and Seventy-Three (Pty) Ltd holds subsurface mineral rights under the EPL No. 9110. The Proponent wishes to conduct prospecting activities which entails the following:

- a) Desktop studies which include the processing and interpretation of the existing geophysical data sets;
- b) Regional field-based reconnaissance activities and if the results are positive, implement detailed site-specific field-based activities using techniques such as geological mapping, geophysical surveys, trenching, drilling, and sampling for laboratory testing. (Detailed explanation will be contained in the ESAR)

Should exploration yield successful results and the proponent confidently decides to proceed with mining a full environmental impact assessment and a detailed feasibility study will be carried out with appropriate site-specific specialist studies i.e., Hydrology, Biodiversity, Soil and more that are deemed necessary.

On behalf of our client, we hereby extend an invitation to you as an identified stakeholder and or I&AP for this project. You are hereby requested to register yourself as an affected party to receive the Background Information Document (BID) and the draft ESAR as well as the EMP in order to provide your input/comments/concerns regarding the proposed activities.

Registration can be done by requesting the BID dully motivated in writing with the following details: Names, Farm Name/Organization, Contact Details, and your Comments/Inputs to the following email addresses: [info@enviro-aec.com](mailto:info@enviro-aec.com)

**DEADLINE FOR REGISTARTION AND WRITTEN SUBMISSIONS: 28TH OF FEBRUARY 2023**

Further take note that, the work that will be conducted on this EPL is only prospecting activities and it is not mining, and no minerals deposits have been discovered, in the same light there is no guarantee that the prospecting will result in any economic minerals discoveries.

Should there be a need to conduct fieldwork on your land, the Proponents or their representative will contact you to request for permission to access your property and any future access or related Agreements can be negotiated. Issues and conditions related to any agreements to be signed between the proponent and the affected party are beyond our scope of work and are not part of the ECC application process.

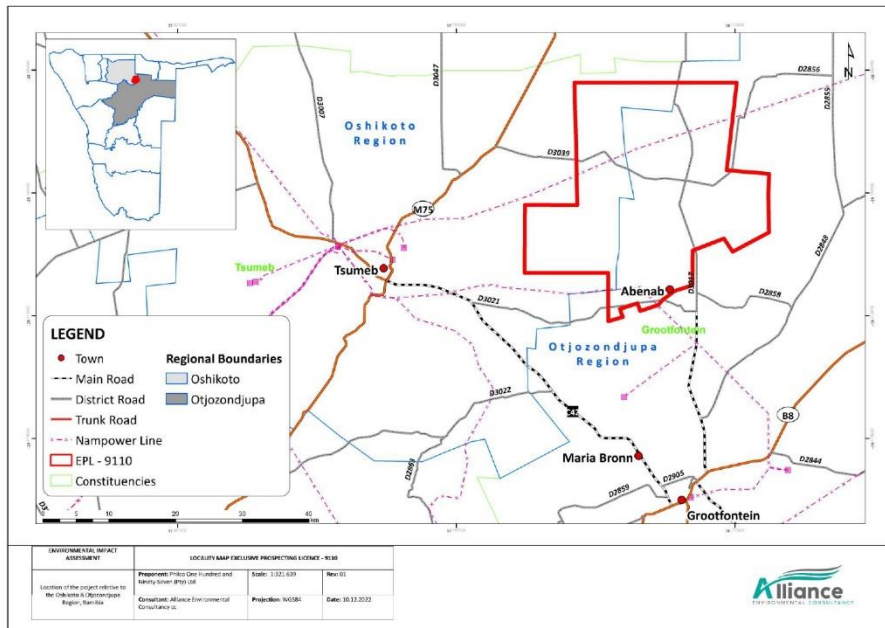
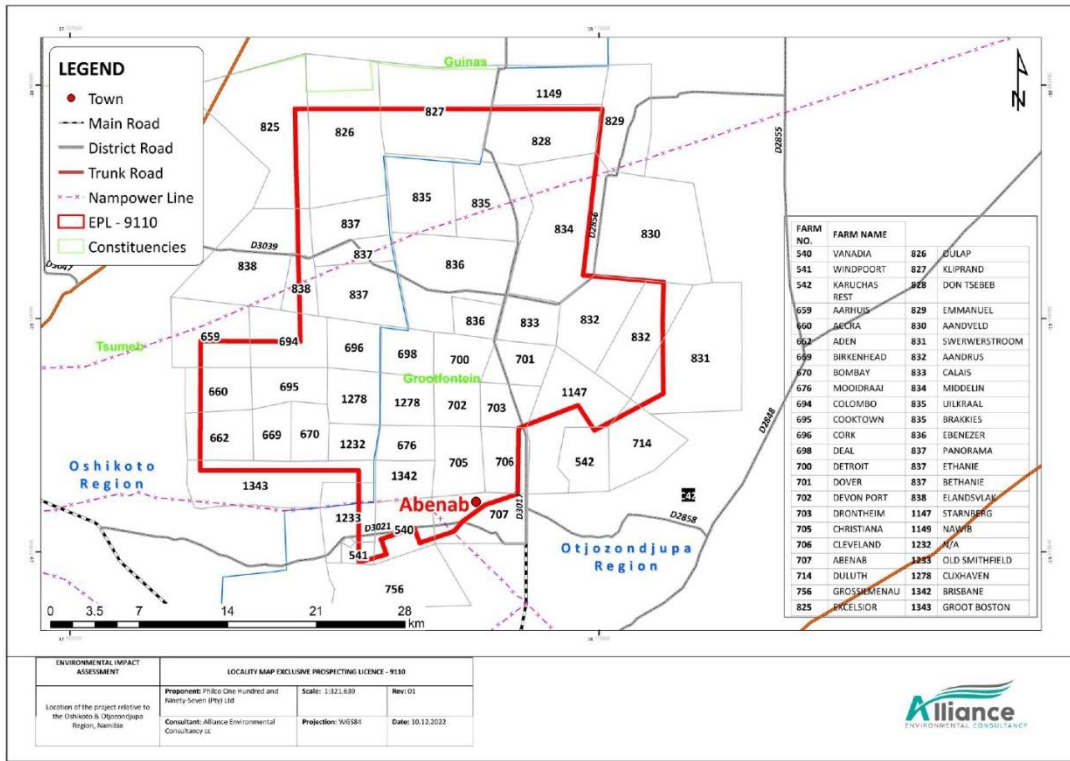
We aspire to build an open communication with you, and we value your input and participation.

Should you require any further information, please do not hesitate to contact us.

Yours Sincerely,

  
Alliance Environmental Consultancy  
P.O. Box 51006, Bachbrecht  
Tel: +264 85 772 8929  
Email: [info@enviro-aec.com](mailto:info@enviro-aec.com)

Ms. Lovisa Amwele (Cand. Nat. Sci)  
Principal Environmental Consultant  
Alliance Environmental Consultancy CC



Alliance Environmental Consultancy  
 P.O. Box 51006, Bachbretcht  
 Cell: +264 85 772 6329  
 Email: info@enviro-aec.com

**LIST OF REGISTERED ITEMS POSTED**



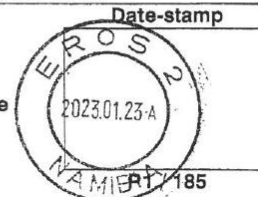
by Alliance Environmental Consultancy, P.O.Box 51006 Bachbretcht

Sender's reference no.	Addressee's name and address	Registration no.
1	Vanadla 540/Emmanuel/Excel P.O. BOX 13343 Windhoek	BA 001 828 045 NA
2	Stanberg 1147, Karuchas Res 542 P.O. BOX 26 Grootfontein	BA 001 828 059 NA
3	Aarhuis 659 P.O. BOX 23228 Windhoek	BA 001 828 062 NA
4	Farm Accrg 660 P.O. Box 85 Tsumeb	BA 001 828 076 NA
5	Brkenhead 669/Aden 662/cooktown 695 P.O. Box 1591 Tsumeb	BA 001 828 080 NA
6	Bombay 670 P.O. BOX 11733 Windhoek	BA 001 828 093 NA
7	Calais 833/Poker 701 P.O. Box 21730 Windhoek	BA 001 828 102 NA
8	Dronthem 703/Daven Port 702 P.O. BOX 3 Otjiwarongo	BA 001 828 116 NA
9	Cleveland 706/Christiana 705 P.O. BOX 63 Grootfontein	BA 001 828 120 NA
10	Farm Aberab 707 P.O. BOX 1927 Tsumeb	BA 001 828 133 NA
11	Duluth 714 P.O. Box 901 Windhoek	BA 001 828 147 NA
12	Grosslmenau 756 P.O. BOX 171 Grootfontein	BA 001 828 155 NA
13	Kliprandt 827 P.O. BOX 98513 Windhoek	BA 001 828 164 NA

prime press 072001

Number of Items 13 Received by [Signature]

No compensation will be considered unless enquiry regarding this postal article is made within one year after the date posting.



Alliance Environmental Consultancy  
 P.O. Box 51006, Bachbrect  
 Cell: +264 85 772 8929  
 Email: info@enviro-aec.com

**LIST OF REGISTERED ITEMS POSTED**



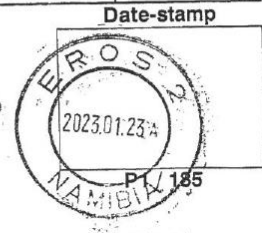
by Alliance Environmental Consultancy, P.O. Box 51006 Bachbrect

Sender's reference no.	Addressee's name and address	Registration no.
1	Farm Don Tsubeb 828 P.O. BOX 96226 Windhoek	BA 001 828 178 NA
2	Farm Aandveld 830 P.O. BOX 120 Tsumeb	BA 001 828 181 NA
3	Swerwertroom 831 P.O. BOX 18016 Oshakati	BA 001 828 195 NA
4	Aandrys 832 P.O. BOX 312 Grootfontein	BA 001 828 204 NA
5	Middelín 834 P.O. BOX 3213 Rehoboth	BA 001 828 218 NA
6	Ebenezer 836 P.O. BOX 520 Oshakati	BA 001 828 221 NA
7	Elandsvalk 838 P.O. BOX 584 Tsumeb	BA 001 828 235 NA
8	Old Smithfield 1233 P.O. BOX 316 Tsumeb	BA 001 828 249 NA
9	Cuxhavel 1278 P.O. BOX 27 Tsumeb	BA 001 828 252 NA
10		
11		
12		
13		

prima press 072001

Number of Items 9 Received by [Signature]

No compensation will be considered unless enquiry regarding this postal article is made within one year after the date posting.



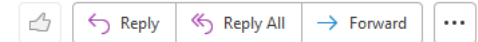


## EMAIL TO THE FARMERS ASSOCIATION

STAKEHOLDER CONSULTATION - Environmental Impact Assessment (EIA) process for the proposed exploration activities within EPL 9110, Oshikoto a...



info@enviro-aec.com  
To 'stoman@afol.com.na'



Wed 1/18/2023 22:03



Dear Christine,

Compliments of the season!

We are in the process of applying for an Environmental Clearance Certificate for proposed minerals exploration activities on EPL 9110 on behalf of our client. As part of the public participation process, we are required to communicate with affected parties through different means to inform them about the project and how they can be involved. The EPL covers portions of a number of farmlands near Tsumeb and Grootfontein.

The details of the farms retrieved from the Ministry of Lands is often outdated and the newspaper adverts don't always reach the rightful audience, therefore we explore other options in attempt to invite potential Interested and Affected Parties (I&APs) for the project.

We hereby request your assistance with the contact details of some farm owners, if available (as per the attached sheet and maps) for the purpose of stakeholder consultation. Alternatively, we will appreciate if you could forward this email and documents to any person who can potentially assist in that regard.

**Attached to this email:** Formal request letter, farm numbers and names, locality maps, and Background information Document for your attention.

We hope to hear from you soon.

Many Thanks and,  
Kind Regards

**Lovisa (Cand. Sci. Nat)**  
Principal Environmental Assessment Practitioner  
Alliance Environmental Consultancy  
Email: [info@enviro-aec.com](mailto:info@enviro-aec.com) OR [lovisa@enviro-aec.com](mailto:lovisa@enviro-aec.com)  
Cell: +264 85 772 8929 OR +264 81 435 1689

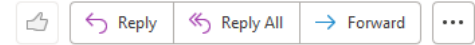


REGISTRATION EMAILS FROM TO THE PUBLIC


EPL 9110 Oshikoto



Hennie Kruger <krugergroups@gmail.com>  
To info@enviro-aec.com



Thu 1/19/2023 08:13

 You replied to this message on 1/25/2023 17:17.  
[Click here to download pictures.](#) To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Good morning Lovisa,

We received an email through the Farmers' Assosiaction regarding exploration work.

We are situated on:

Farm Old Smithfield no 1233 Abenab  
Owner: Adrenalin Safari CC  
PO Box 1432  
Tsumeb

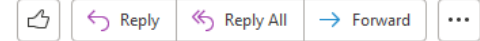
Please provide us the BID document.

Kind regards,

## RE: Stakeholder notification



info@enviro-aec.com  
To 'cuxhaven'



Tue 2/28/2023 11:37



Dear Potgieter,

Thank you for your interest in our project.

You have been registered as an Interested and Affected Party (I&AP) for the proposed minerals prospecting activities within EPL 9110, within the Tsumeb and Grootfontein Constituencies, Otjozondjupa and Oshikoto Regions.

Kindly receive the Background Information Document (BID) and stakeholder letter attached hereto for your review and commentary. We will keep you informed as the project progresses.

Should you require any further information, please do not hesitate to contact us.

Thank you and,

Kind Regards  
Lovisa

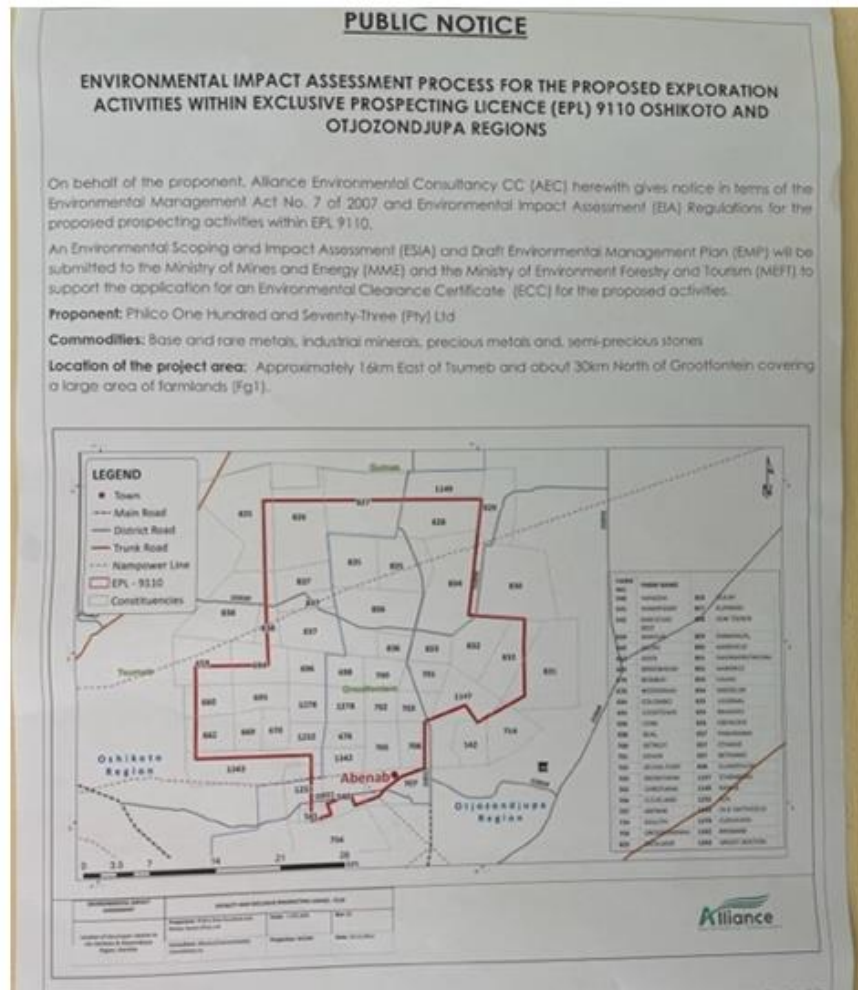
Alliance Environmental Consultancy  
Email: [info@enviro-aec.com](mailto:info@enviro-aec.com)  
Cell: +264 81 435 1689 OR +264 85 772 8929



**From:** Pieter van Staden <[pieter@akwaprojects.com](mailto:pieter@akwaprojects.com)>  
**Sent:** Saturday, January 21, 2023 10:04  
**To:** [info@enviro-aec.com](mailto:info@enviro-aec.com)  
**Subject:** EIA Philco one hundred and ninety-seven pty ltd

Hello

I would like to register as an I&Ap. Please send us the Bid document.



RE: EIA Philco one hundred and ninety-seven pty ltd



info@enviro-aec.com

To 'Pieter van Staden'



Wed 1/25/2023 17:13



Dear Pieter,

Thank you for your interest in our project.

You have been registered as an Interested and Affected Party (I&AP) for the proposed minerals prospecting activities within EPL 9110, within the Tsumeb and Grootfontein Constituencies, Otjozondjupa and Oshikoto Regions.

Kindly receive the Background Information Document (BID) and stakeholder letter attached hereto for your review and commentary. We will keep you informed as the project progresses.

Should you require any further information, please do not hesitate to contact us.

Thank you and,

Kind Regards

Lovisa

## EIA for public review - Minerals prospecting activities within EPL9110, Oshikoto and Otjozondjupa Regions



lovisa@enviro-aec.com

To 'info@enviro-aec.com'

Bcc 'glhenning@iway.na'; 'Cobus.nf@gmail.com'; 'louisfouriesosh@gmail.com'; 'info@abenablodge.com'; 'enkar44@gmail.com'; 'vonmolen@iway.na'; 'pieter@akwaprojects.com'; 'Hennie Kruger'



Reply

Reply All

Forward



Fri 3/24/2023 14:11

230324\_EPL 9110\_Draft EIA Report\_LK\_CC\_LNA.pdf  
10 MB230321\_EPL9110\_Draft EMP Report\_LNA.pdf  
2 MB

Dear Stakeholder,

This email serves to notify you that the Draft Environmental & Scoping Impact Assessment (ESIA) report and the Draft Environmental Management Plan (EMP) for the proposed minerals prospecting activities within Exclusive Prospecting Licence (EPL **9110**) is ready for your review and commentary.

Kindly be informed that the review period will last **from the 24<sup>th</sup> of March 2023 to the 07<sup>th</sup> of April 2023**. You will be notified once the documents are submitted to the authorities for decision making.

Further take note that the Ministry of Environment Forestry and Tourism (MEFT) provides a further review period of 14 days after submission via their online portal at <http://eia.met.gov.na/>.

We aspire to build an open commutation with you and should you require further information please do not hesitate to contact us.

Thank you and,  
Kind Regards

**Lovisa (Cand. Sci. Nat)**

*Principal Environmental Assessment Practitioner*

Alliance Environmental Consultancy

Email: [lovisa@enviro-aec.com](mailto:lovisa@enviro-aec.com) OR [info@enviro-aec.com](mailto:info@enviro-aec.com)

Cell: +264 81 435 1689 OR +264 85 772 8929




## Farm Bombay 670 Tsumeb



Sunette Blaauw &lt;wilverdiend@iway.na&gt;

To lovisa@enviro-aec.com

Cc cobus.nf@gmail.com; gaylene.nf@gmail.com; 'Sunette Blaauw'

 You replied to this message on 4/19/2023 10:58. Reply Reply All Forward

Wed 4/5/2023 12:29

Dear Lovisa

Thank you for the documentation received. Kindly note the following:

1. We are in the middle of our planting season (potatoes) and the time allocated to review the scientific document is not enough. We have noted some errors. Therefore, we will have to verify the data and consider applicability of information presented, sources etc. An extension on the deadline for comments is therefore requested.
2. Please provide the MEFT Application Number for this project. We would also like to view the screening notice which was sent by MEFT.
3. Kindly note that no persons are allowed to access the property without an agreed access agreement.
4. Furthermore, take note of the legal provisions pertaining to prospecting, orchards and plantations.

Kind regards

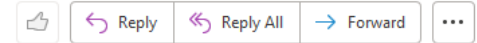
Cobus Coetzee

**Sunette Blaauw**  
Lanzo Sales and MarketingPO Box 2120  
Tsumeb  
Cell: +264 81 293 5120


## Old Smithfield - EPL 9110



Hennie Kruger <krugergroups@gmail.com>  
To lovisa@enviro-aec.com



Wed 4/5/2023 22:29

 You replied to this message on 4/19/2023 10:59.  
If there are problems with how this message is displayed, [click here to view it in a web browser.](#)  
[Click here to download pictures.](#) To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Dear Lovisa,

Thank you for the documentation received. Kindly note the following:

1. We are in the middle of our planting season (carrots and onions) and the time allocated to review the scientific document is not enough. We have noted some errors. Therefore, we will have to verify the data and consider applicability of information presented, sources etc. **An extension on the deadline for comments is therefore requested.**
2. Please provide the MEFT Application Number for this project. We would also like to view the screening notice which was sent by MEFT.
3. Kindly note that no persons are allowed to access the property without an agreed access agreement.
4. Furthermore, take note of the legal provisions pertaining to prospecting, orchards and plantations.

Kind regards

Hennie Kruger  
081 229 6143

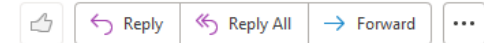





RE: Old Smithfield - EPL 9110



lovisa@enviro-aec.com  
To 'Hennie Kruger'



Wed 4/19/2023 11:00

 You replied to this message on 4/19/2023 11:05.  
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Dear Hennie,

Thank you for your email, apologies for the late response.  
Kindly see our response in red below:

1. We are in the middle of our planting season (potatoes) and the time allocated to review the scientific document is not enough. We have noted some errors. Therefore, we will have to verify the data and consider applicability of information presented, sources etc. An extension on the deadline for comments is therefore requested.  
**Your input and corrections will be gladly appreciated, we hereby afford you an extension to review the documents until Friday the 28th of April 2023. Further take note that the Ministry of Environment Forestry and Tourism (MEFT) provides a further 14days period for public review before commencement of their internal review. The link will be shared with you once we submit and is available. Alternatively, should the comments be recieved after the 28th April and before the MEFT 14days period lapses, we can submit them as an adendum to our application.**
2. Please provide the MEFT Application Number for this project. We would also like to view the screening notice which was sent by MEFT.  
**Application number: 221213000673**  
**Screening notice attached.**
3. Kindly note that no persons are allowed to access the property without an agreed access agreement.  
**Thank you, we are aware of land trespassing and any issues regarding access agreements as such will be done by the proponent (as advised by AEC) and the land owners, hence it is beyond our scope of work and not part of the ECC application process.**
4. Furthermore, take note of the legal provisions pertaining to prospecting, orchards and plantations.  
**Noted with thanks.**

We look forward to your inputss regarding this project, we aspire to build an open communication with you, therefore, should oyu require an further information please do not hesitate to contact us.

Many thanks  
Lovisa

Draft Environmental Scoping and impact Assessment: Will we be provided with the final VS?

Yes, please see attached.

**Pg 11:** Draft ESIA Report: Philco One Hundred and Seventy-Three (Pty) Ltd: Who has the shareholding of this company?

Kindly note that the applications for Environmental Clearance Certificates under the Environmental Management Act 07 of 2007 and the Regulations 2012 does not require public disclosures of the Proponent's trading resources related to the authorization falling within the roles and responsibilities of the Competent Authority and in this case the MME. Issues related to company credibility as such, and the sharing of company registration documents are beyond our scope of work and are not part of the ECC application process.

"Not a site-specific baseline study": How can an assessment be done like this? There are very different climate conditions from farm to farm. A lot will be missed.

Considering the magnitude of the proposed activities and the existence of similar projects in the vicinity, these can be used to sufficiently address the potential impacts that may emanate from the proposed project. . Reviewed literature, and professional experience from similar studies in the Regions and elsewhere were also considered when addressing these effects. This is discussed under the impact assessment section of the SR and mitigation measures are provided accordingly. Should a variation be encountered the EMP will be updated and/or specialist studies will be conducted if warranted.

**Pg 24:** Project Plan and activities: Once granted by MME: So they will grant it? Regardless of the EIA? Or not?

An ECC is part of the conditions/requirement for granting the physical licence by MME

Initiation/Pre-Operational Phase: Accommodation: For how many people?

Approximately 6 to 15 personnel (depending on the labour needs)

MAWLR: Was this done? Please provide approval from MAWLR?

For water: this will only be considered should the need for abstraction permits or other water related permits be required once the project is operational. The Directorate of Land Reforms was visited to acquire farmers' details and farm boundaries at the bigging of the year 2023 pls refer to Figure 3 and Appendix D.

Fuel Permit: Was this done? Please provide approval?

This will only be done once the storage quantities are confirmed and only if they exceed the thresholds as per the MME guidelines, in this case 600L. above-ground storage tank. At the moment the envisioned storage capacity is 200 – 400L mainly for the diesel-powered generator.

Basic infrastructure: What does this entail?

Temporary tents and shade structures and "maybe" containers.

Access: Minimal: If a drill rig needs access, how wide is the path? Will it be minimal?

A single carriage track/road is sufficient for drill rig access.

**Pg 25: Waste Management:** Have there been any regard to the relevant guidelines?

Water use: How much is not much? Please provide an estimate?

Approximately 2000L – 2500L or less a month depending on the number of personnel and the type of drilling.

Community boreholes: Where are these in relation to the project?

To be determined and this will only be an option with consent from the relevant landowners.

Power Supply: Diesel: How much diesel capacity? How much on site?

At the moment the envisioned storage capacity is 200 – 400L mainly for the diesel-powered generator.

A Small field: How small?

Equivalent to household use panel.

Onsite fuel storage: See questions above about fuel storage. Bundled fuel tank system: What will this look like? Need a drawing as per MME permit requirement.

Image below for illustrative purposes.



**Pg 26:** The fuel facility: need a permit?

If above 600L a consumer installation certificate is required.

Excavators and front-end loaders: How many? This is not minimal distraction.

Only one (1) and only if overburden topsoil removal is required which is unlikely.

Water tankers: What will this look like? How big are these?

Below images for illustrative purposes. Approximately 1000L capacity



Accommodation Place: How big will this “acomodation place” be?

Area sufficient to accommodate approx. 5 – 10 personnel with temporary sleeping tents and shade structures.

Geophysical survey: Radar, magnetic and electromagnetic: Explain how this will be achieved please? Provide some pictures. How large are flight paths surely, they have to cover height boring properties?

Please see images below of the two types of geophysical methods with ground-based magnetometer (left) and airborne magnetometer (right).



**Pg 27:** Helicopter or aircraft: How are wildlife and game camps considered with such low flying aircraft? Please clarify how wildlife is affected?

The low flying aircraft will not impact wildlife and game camps.

How much water is used per 10m?

This depends on the hardness of the formation being drilled and only if diamond drilling is employed.

How deep do you want to go?

Yet to be determined through geological interpretation.

What happens to the wastewater?

Please refer to section 3.1.2 of the scoping report.

What happens to machinery oils?

Possible oils from the servicing of the vehicles and machines will be collected in drums or as appropriate and is taken together with all other industrial waste that is generated on site to the nearest hazardous waste site (possible Tsumeb).

How many people per team?

Exploration team can range from 5 – 10 personnel, drilling team may range from 5 – 8 members.

How do you ensure that aquifers are not contaminated?

Please refer to Table 11 in the scoping report

What happens to the core?

The proponent will establish a temporary core shed storage area either at the accommodation camp in containers or elsewhere.

**Pg 29:** Trenches: How wide are these 5m trenches?

5m. Very unlikely

General Comments on Project Description: Need more details on what actually will happen on ground.

How many people?

Answers provided above.

What do camps look like?

A fenced off area with temporary sleeping tents (5 – 8). Kitchen area open space or container, ablution facility (portable toilets as envisioned) and vehicle/core shade area if required.

How much fuel will be stored? What does flying look like? How will this flying impact wildlife, cattle and livestock? Please explain what happens to waste, typically?

Answer provided above.

How long does it take , approximately per each phase?

Cannot be determined at this stage. It depends on the observation at the site and from the sampling/drilling. The physical licence is valid for a period of 3 years with possible renewal.

**Pg 36:** Key regulators / Competent Authorities

Advise on groundwater protection and permitting.

Answers provided above.

No mentioning of regional plans. No mentioning of NDP's

Please elaborate.

**Pg 37:** Permits

No mention of water .....areas drilling (not abstraction) also requires authorization from MAWLR

Refer to Table 6 "Notice of intention to drill – MME". For prospecting these are administered through MME, we are not familiar with authorization from MAWLR related to prospecting apart from water abstraction.

No mention of Agriculture. Some of these farms have been in operation since before 1975: Proof even on the topo maps of the area.

Please elaborate. The farming practices and minerals prospecting can co-exist and any impacts that may arise from the project are addressed in Chapter 9 and the EMP.

Water policy states that water is first for people then food production and then mining.

Noted. Please note that this is a prospecting project and not mining.

Agriculture has been a proven viable practice for 50 years in the area. Providing continued employment and food production on a sustainable basis, this should be stated in your report as well.

**Noted and considered. Section 6.7.4.**

**Pg 38:** Baseline environment / study area

Focus on the excellent relationship between the mentioned parties respecting the views, reality and future.

**Noted**

**Pg 40:** Sunshine and wind.

Reference to Grootfontein town regarding sun hours.....why is the rest of the climate information for Tsumeb? It should be the same reference.

**The sun hours data is reference to Grootfontein town which has the closest recording station to the EPL area that was found. Kindly share Tsumeb data if available.**

**Pg 41:** Figure 8&9

Not defined, we use km/h and not mph.

**Noted with thanks.**

The heading states for Windhoek 2021 to January 2023. Not the same location / area.

**Noted with thanks.**

**Pg 42:** Flora Agriculture is NOT a minor sector in the economy. Please contact the Namibian Agronomic board for a full review.

**Noted with thanks.**



Invader bush has been handled adequately for the last 10-12 years through bush thinning for enlargement of cultivation in this area.

Noted with thanks.

Table 7 - No reference - where was this info taken from.

Noted with thanks. Reference Atlas of Namibia.

Pg 62: Impact Assessment

Table 8 - exploration activities require removal of some plants to a small extent.....please define size or area.

Typically to support the 15X15m drill site or to widen tracks if required. Note that this will be avoided at all costs.

Disturbing the hunting activities.....of whom?

In cases where hunting is practiced in the area.

The presence of people in the area can influence illegal hunting or poaching of wildlife or livestock.....what is meant by this? Will the influence be negative or positive?

If the team is not made aware of the EMP provisions and have not gained behavioral training which prohibits the hunting or poaching of wildlife or livestock, although unlikely this can be a negative impact.

Habitats are not confined to the EPL boundaries

That is true.

Pg 65: Noise

No mentioning of airplanes and helicopter movements causing noise.

Not an envisioned impact.

Noise caused by project activities.....please add flight movement during project. Elaborate on handling noise levels due to our wildlife that has limited areas to flee because of mountains / corridors / fencing.

**Does not qualify as an envisioned impact. Please refer to Table 9**

Under your Mitigation measures you mentioned the WHO guideline on noise levels, where do you mention it in your legal section.

**Noted and added.**

**Pg 67:** Dust. No mentioning of airplanes or helicopters

**Please elaborate. The aircraft will not fly at low altitudes such that it triggers dusty conditions.**

Dust control is of utmost importance because excessive dust on crops and orchards will influence plant health, and over-all production.

Excessive dust can be caused by exploration activities which include dust from flight, drilling and transporting activities during the project. Plan needed to prevent / handling dust during the project on roads and dust sensitive areas

**Noted, and will be considered.**

**Pg 77:** Erosion control

Drainage lines and riveriens are part of the natural landscape and maintain biodiversity. No mention of limiting erosion in these areas.

**Please refer to Chapter 10**

Preplanning and mapping of contours by a professional of the area to ensure that drainage lines and riverine are protected and maintained before land moving takes place.

**Noted and will be considered.**

Constructing roads, trenches and other land moving activities need a proposed plan before activity starts to limit the erosion during the rainy season.

**Noted and will be considered.**

Major impacts lacking

Ground water: How will it be affected by so many boreholes? Will the aquavere be contaminated? Was Namwater contacted? Fuel storage and hazardous material can cause contamination of water.

**No water contamination is envisioned from the drilling of holes. All addressed above. Namwater has not been contacted, that will be considered should the need arise.**

Fire hazard: Drill and prospecting operations have in the past caused fires which are devastating. This is not addressed.

**Section 4.12. in the EMP**

Social impact: People in prospecting camps can have a negative social impact on the farming workforce and community.

**The team will undergo training to be made aware of the Dos and Don'ts at work and in the areas around the EPL. A daily safety talks will be held during the project's operations.**

**REGISTERED AND IDENTIFIED STAKEHOLDER LIST**

<b>ORGANIZATION/AUTHORITY</b>	<b>CONTACT PERSON</b>	<b>CAPACITY</b>
Ministry of Agriculture, Water & Forestry: Forestry Directorate		Commissioner
Ministry of Mines and Energy	Mrs. Isabella Chirchir	Mining Commissioner
Ministry of Environment and Tourism	Mr. Timoteus Mufeti	Environmental Commissioner
Oshikoto Regional Council		
Otjozondjupa Regional Council		

<b>FARM NAME</b>	<b>FARM NO</b>	<b>FARM OWNER</b>	<b>CONTACT PERSON</b>	<b>POST:</b>	<b>EMAIL:</b>
Hiebis Nord	339	OFW Tietz			
Aahus	659	R Botes	J Pu Plessis (resident Aalborg)	P O Box 1300, Oshakati	
Abo	502	GVR Henning (Gerhard) (resident Abo)			<a href="mailto:glhenning@iway.na">glhenning@iway.na</a>
Accra	660	GVR Henning (Gerhard) (resident Abo)		P O Box 85, Tsumeb	<a href="mailto:glhenning@iway.na">glhenning@iway.na</a>
Aden	662	GVR Henning (Gerhard) (resident Abo)		P O Box 1591, Tsumeb	<a href="mailto:glhenning@iway.na">glhenning@iway.na</a>
Birkenhead	669	GVR Henning (Gerhard) (resident Abo)		P O Box 1591, Tsumeb	<a href="mailto:glhenning@iway.na">glhenning@iway.na</a>
Cooktown	504	GVR Henning (Gerhard) (resident Abo)			<a href="mailto:glhenning@iway.na">glhenning@iway.na</a>
Bombay	670	Cobus Coetzee	Cobus Coetzee (buying?)	P O Box 1418, Tsumeb	<a href="mailto:Cobus.nf@gmail.com">Cobus.nf@gmail.com</a>
Brisbane	674	LM Potgieter (Lourens)&Winnie Metzger	Cobus Coetzee (leasing)	P O Box 306, Tsumeb	
Ebenezer	836	W V Hamukonda (Wasman)	Toivo	P O Box 423, Tsumeb	
Deal	698	MKabanda	Lukas(resident foreman)	P O Box 1042, Tsumeb	

Cleveland	706	Tannie Susan (mother) & Louis (son) Fourie	Tannie Susan (mother) & Louis (son) Fourie	P O Box 63, Grootfontein	<a href="mailto:louisfouriesosh@gmail.com">louisfouriesosh@gmail.com</a>
Christiana		Tannie Susan (mother) & Louis (son) Fourie	Tannie Susan (mother) & Louis (son) Fourie		<a href="mailto:louisfouriesosh@gmail.com">louisfouriesosh@gmail.com</a>
Abenab	707	J Mbwale (Jerry) & Lorna Mbwale	J Mbwale (Jerry) & Lorna Mbwale	P O Box 4464, Windhoek	<a href="mailto:info@abenablodge.com">info@abenablodge.com</a>
Vanadia	540	U. Kuvare (Resettled Farmers)		P O Box 490, Grootfontein	
Aarhus	435	Enkara			<a href="mailto:enkara44@gmail.com">enkara44@gmail.com</a>
Boston	671	D E Bisschoff	Polla Potgieter (resident Cuxhaven)	P O Box 757, Tsumeb	
Old Smithfield	541	C D Potgieter		P O Box 204, Tsumeb	
Section 1 (Windpoort)					
Khusib					
Cadix Akwa Plumbing & Projects CC Farm Old Smithfield no 1233 Abenab Adrenalin Safari CC	570	Leon Von Molendorf & Francois 9son-in-law)		PO Box 1432 Tsumeb	<a href="mailto:vonmolen@iway.na">vonmolen@iway.na</a>
		Pieter van Staden			<a href="mailto:pieter@akwaprojects.com">pieter@akwaprojects.com</a>
	1233	Hennie Kruger			<a href="mailto:krugergroups@gmail.com">krugergroups@gmail.com</a>

## APPENDIX E - FLORA SPECIES LIST (National Botanical Research Institute)

SPECIES	ENDEMISM	PROTECTED	IUCN1	IUCN2
<i>Abutilon fruticosum</i> Guill. & Perr.				
<i>Abutilon hirtum</i> (Lam.) Sweet var. <i>hirtum</i>				
<i>Acacia fleckii</i> Schinz				
<i>Acacia hereroensis</i> Engl.				
<i>Acacia luederitzii</i> Engl. var. <i>luederitzii</i>				
<i>Acacia nilotica</i> (L.) Willd. ex Delile subsp. <i>kraussiana</i> (Benth.) Brenan				
<i>Acacia reficiens</i> Wawra subsp. <i>reficiens</i>				
<i>Acalypha ciliata</i> Forssk.				
<i>Acanthosicyos naudinianus</i> (Sond.) C.Jeffrey				
<i>Acanthospermum hispidum</i> DC.				
<i>Acrocephalus sericeus</i> Briq.				
<i>Actiniopteris radiata</i> (J.König ex Sw.) Link				
<i>Adansonia digitata</i> L.		Forestry Protected		
<i>Aerva leucura</i> Moq.				
<i>Alysicarpus rugosus</i> (Willd.) DC. subsp. <i>rugosus</i>				
<i>Amaranthus hybridus</i> L. subsp. <i>cruentus</i> (L.) Thell.				
<i>Ammannia baccifera</i> L. subsp. <i>baccifera</i>				
<i>Ammocharis coranica</i> (Ker Gawl.) Herb.				
<i>Ammocharis nerinoides</i> (Baker) Lehmilller	Endemic			Near Threatened
<i>Androcymbium roseum</i> Engl.				
<i>Andropogon chinensis</i> (Nees) Merr.				
<i>Andropogon schirensis</i> Hochst. ex A.Rich.				
<i>Aptosimum decumbens</i> Schinz				
<i>Aptosimum lineare</i> Marloth & Engl.				
<i>Aristida effusa</i> Henrard				
<i>Aristida hordeacea</i> Kunth				
<i>Asparagus nelsii</i> Schinz				

<i>Asparagus pearsonii</i> Kies				
<i>Barleria lancifolia</i> T.Anderson subsp. <i>lancifolia</i>				
<i>Barleria senensis</i> Klotzsch				
<i>Bauhinia petersiana</i> Bolle subsp. <i>macrantha</i> (Oliv.) Brummitt & J.H.Ross				
<i>Berchemia discolor</i> (Klotzsch) Hemsl.				
<i>Bergia ammannioides</i> B.Heyne ex Roth				
<i>Bidens pilosa</i> L.				
<i>Blepharis obmitrata</i> C.B.Clarke				
<i>Boerhavia diffusa</i> L. <i>diffusa</i>				
<i>Boscia albitrunca</i> (Burch.) Gilg & Gilg-Ben.		Forestry Protected		
<i>Bothriochloa insculpta</i> (Hochst. ex A.Rich.) A.Camus				
<i>Brachiaria deflexa</i> (Schumach.) C.E.Hubb. ex Robyns				
<i>Brachiaria malacodes</i> (Mez & K.Schum.) Scholz				
<i>Brachiaria schoenfelderi</i> C.E.Hubb. & Schweick.	Endemic			
<i>Brachystelma dinteri</i> Schltr.				
<i>Brachystelma stenophyllum</i> (Schltr.) R.A.Dyer				Near Threatened
<i>Buchnera hispida</i> Buch.-Ham. ex D.Don				
<i>Caesalpinia rubra</i> (Engl.) Brenan				
<i>Calostephane divaricata</i> Benth.				
<i>Carissa edulis</i> (Forssk.) Vahl				
<i>Cassine transvaalensis</i> (Burt Davy) Codd				
<i>Celosia trigyna</i> L.				
<i>Cenchrus ciliaris</i> L.				
<i>Cephalocroton mollis</i> Klotzsch				
<i>Chamaecrista absus</i> (L.) H.S.Irwin & Barneby				
<i>Chascanum pinnatifidum</i> (L.f.) E.Mey. var. <i>pinnatifidum</i>				
<i>Cheilanthes dinteri</i> Brause				
<i>Cheilanthes marlothii</i> (Hieron.) Schelpe				
<i>Chlorophytum calyptrocarpum</i> (Baker) Kativu				
<i>Chrysopogon nigritanus</i> (Benth.) Veldkamp				

<i>Cienfuegosia digitata</i> Cav.				
<i>Cleome angustifolia</i> Forssk. subsp. <i>diandra</i> (Burch.) Kers				
<i>Coccinia rehmannii</i> Cogn.				
<i>Combretum collinum</i> Fresen. subsp. <i>gazense</i> (Swynn. & Baker f.) Okafor				
<i>Combretum engleri</i> Schinz				
<i>Combretum imberbe</i> Wawra				
<i>Combretum zeyheri</i> Sond.				
<i>Commelina africana</i> L. var. <i>krebsiana</i> (Kunth) C.B. Clarke				
<i>Commiphora angolensis</i> Engl.				
<i>Commiphora calciicola</i> Engl.				
<i>Commiphora glandulosa</i> Schinz				
<i>Commiphora nigrescens</i> Engl.				
<i>Commiphora tenuipetiolata</i> Engl.				
<i>Conyza albida</i> Spreng.				
<i>Corallocarpus bainesii</i> (Hook.f.) A.Meeuse				
<i>Corchorus asplenifolius</i> Burch.				
<i>Cordia monoica</i> Roxb.				
<i>Crinum rautanenianum</i> Schinz				
<i>Crotalaria podocarpa</i> DC.				
<i>Crotalaria sphaerocarpa</i> Perr. ex-DC. subsp. <i>sphaerocarpa</i>				
<i>Croton gratissimus</i> Burch. var. <i>gratissimus</i>				
<i>Croton gratissimus</i> Burch. var. <i>subgratissimus</i> (Prain) Burt Davy				
<i>Croton menyharthii</i> Pax				
<i>Cucumis africanus</i> L.f.				
<i>Cyathula lanceolata</i> Schinz				
<i>Cynodon dactylon</i> (L.) Pers.				
<i>Cyperus amabilis</i> Vahl				
<i>Cyperus compressus</i> L.				
<i>Cyperus difformis</i> L.				



<i>Cyperus esculentus</i> L. var. <i>esculentus</i>				
<i>Cyperus longus</i> L. subsp. <i>tenuiflorus</i> (Rottb.) Kük.				
<i>Cyperus longus</i> L. var. <i>tenuiflorus</i> (Rottb.) Boeck.				
<i>Cyperus margaritaceus</i> Vahl var. <i>margaritaceus</i>				
<i>Dactyliandra welwitschii</i> Hook.f.				
<i>Dalechampia scandens</i> L. var. <i>cordofana</i> (Hochst. ex-Webb) Müll.Arg.				
<i>Datura inoxia</i> Mill.				
<i>Dichapetalum cymosum</i> (Hook.) Engl.				
<i>Dichrostachys cinerea</i> (L.) Wight & Arn. subsp. <i>africana</i> Brenan & Brummitt var. <i>africana</i>				
<i>Dicoma schinzii</i> O.Hoffm.				
<i>Dicoma tomentosa</i> Cass.				
<i>Digitaria eriantha</i> Steud.				
<i>Digitaria milanjiana</i> (Rendle) Stapf				
<i>Dioscorea quartiniana</i> A.Rich.				
<i>Dioscorea quartiniana</i> A.Rich. var. <i>latifolia</i> R.Knuth				
<i>Dipcadi marlothii</i> Engl.				
<i>Distephanus divaricatus</i> (Steetz) H.Rob. & B.Kahn				
<i>Dombeya rotundifolia</i> (Hochst.) Planch. var. <i>rotundifolia</i>				
<i>Echinochloa crus-galli</i> (L.) P.Beauv.				
<i>Ehretia alba</i> Retief & A.E.van Wyk				
<i>Ehretia namibiensis</i> Retief & A.E.van Wyk subsp. <i>namibiensis</i>	Endemic			
<i>Elaeodendron transvaalense</i> (Burt Davy) R.H.Archer				
<i>Eleusine coracana</i> (L.) Gaertn. subsp. <i>africana</i> (Kenn.-O'Byrne) Hilu & De Wet				
<i>Elytrophorus spicatus</i> (Willd.) A.Camus				
<i>Enicostema axillare</i> (Lam.) A.Raynal subsp. <i>axillare</i>				
<i>Enneapogon cenchroides</i> (Licht. ex Roem. & Schult.) C.E.Hubb.				
<i>Enneapogon desvauxii</i> P.Beauv.				

<i>Enteropogon macrostachyus</i> (Hochst. ex A.Rich.) Munro ex Benth.				
<i>Eragrostis dinteri</i> Stapf				
<i>Eragrostis echinochloidea</i> Stapf				
<i>Eragrostis membranacea</i> Hack. ex Schinz				
<i>Eragrostis porosa</i> Nees				
<i>Eragrostis rigidior</i> Pilg.				
<i>Eragrostis superba</i> Peyr.				
<i>Erianthemum ngamicum</i> (Sprague) Danser				
<i>Eriocaulon transvaalicum</i> N.E.Br. subsp. <i>transvaalicum</i>				
<i>Eriocephalus luederitzianus</i> O.Hoffm.				
<i>Eriospermum rautanenii</i> Schinz				
<i>Eriospermum triphyllum</i> Baker				
<i>Erucastrum arabicum</i> Fisch. & C.A.Mey.				
<i>Erythrina decora</i> Harms	Endemic	Forestry Protected		
<i>Erythrococca menyharthii</i> (Pax) Prain				
<i>Euclea divinatorum</i> Hiern				
<i>Euclea undulata</i> Thunb.				
<i>Euclea undulata</i> Thunb. var. <i>myrtina</i> (Burch.) Hiern				
<i>Euphorbia cyathophora</i> J.Murray				
<i>Euphorbia transvaalensis</i> Schltr.				
<i>Ficus cordata</i> Thunb. subsp. <i>cordata</i>		Forestry Protected		
<i>Ficus sycomorus</i> L. subsp. <i>gnaphalocarpa</i> (Miq.) C.C.Berg				
<i>Fingerhuthia africana</i> Lehm.				
<i>Flaveria bidentis</i> (L.) Kuntze				
<i>Flueggea virosa</i> (Roxb. ex Willd.) Voigt subsp. <i>virosa</i>				
<i>Fockea angustifolia</i> K.Schum.				
<i>Fockea multiflora</i> K.Schum.				
<i>Fuirena coerulescens</i> Steud.				
<i>Gardenia volkensii</i> K.Schum. subsp. <i>spatulifolia</i> (Stapf & Hutch.) Verdc.				
<i>Geigeria odontoptera</i> O.Hoffm.	Endemic			

<i>Geigeria ornativa</i> O.Hoffm.				
<i>Geigeria otaviensis</i> (Merxm.) Merxm.	Endemic			
<i>Gisekia africana</i> (Lour.) Kuntze var. <i>africana</i>				
<i>Gloriosa superba</i> L.				
<i>Gomphocarpus tomentosus</i> Burch. subsp. <i>tomentosus</i>				
<i>Grewia flava</i> DC.				
<i>Grewia retinervis</i> Burret				
<i>Gymnema sylvestre</i> (Retz.) R. Br. ex Schult.				
<i>Gymnosporia buxifolia</i> (L.) Szyszyl.				
<i>Gymnosporia maranguensis</i> (Loes.) Loes.				
<i>Gymnosporia senegalensis</i> (Lam.) Loes.				
<i>Gyrocarpus americanus</i> Jacq. subsp. <i>africanus</i> Kubitzki				
<i>Helichrysum candolleianum</i> H.Buek				
<i>Helinus integrifolius</i> (Lam.) Kuntze				
<i>Heliotropium ovalifolium</i> Forssk.				
<i>Heliotropium steudneri</i> Vatke				
<i>Heliotropium strigosum</i> Willd. subsp. <i>strigosum</i>				
<i>Hermannia eenii</i> Baker f.				
<i>Hermannia stricta</i> (E.Mey. ex Turcz.) Harv.				
<i>Hermbstaedtia odorata</i> (Burch.) T.Cooke var. <i>albi-rosea</i> Suess.				
<i>Hermbstaedtia odorata</i> (Burch.) T.Cooke var. <i>odorata</i>				
<i>Heteranthera callifolia</i> Rchb. ex Kunth				
<i>Heteropogon contortus</i> (L.) Roem. & Schult.				
<i>Hibiscus caesius</i> Garcke var. <i>caesius</i>				
<i>Hyparrhenia hirta</i> (L.) Stapf				
<i>Hypoestes forskoolii</i> (Vahl) R.Br. subsp. <i>forskoolii</i>				
<i>Indigastrum costatum</i> (Guill. & Perr.) Schrire subsp. <i>macrum</i> (E.Mey.) Schrire				
<i>Indigofera astragalina</i> DC.				
<i>Indigofera charlieriana</i> Schinz var. <i>charlieriana</i>				
<i>Indigofera daleoides</i> Benth. ex Harv. var. <i>daleoides</i>				

<i>Indigofera flavicans</i> Baker				
<i>Indigofera flavicans</i> Baker var. <i>flavicans</i>				
<i>Indigofera heterotricha</i> DC. subsp. <i>pechuelii</i> (Kuntze) Schrire				
<i>Ipomoea adenioides</i> Schinz var. <i>adenioides</i>				
<i>Ipomoea obscura</i> (L.) Ker Gawl. var. <i>obscura</i>				
<i>Jasminum fluminense</i> Vell subsp. <i>fluminense</i>				
<i>Justicia odora</i> (Forssk.) Vahl				
<i>Kalanchoe lanceolata</i> (Forssk.) Pers.				
<i>Kohautia aspera</i> (B. Heyne ex Roth) Bremek.				
<i>Kohautia caespitosa</i> Schnizl. subsp. <i>brachyloba</i> (Sond.) D.Mantell				
<i>Kyllinga alba</i> Nees				
<i>Kyphocarpa angustifolia</i> (Moq.) Lopr.				
<i>Laggera decurrens</i> (Vahl) Hepper & J.R.I.Wood				
<i>Lanea discolor</i> (Sond.) Engl.				
<i>Lapeirousia bainesii</i> Baker				
<i>Lapeirousia schimperi</i> (Asch. & Klatt) Milne-Redh.				
<i>Leucosphaera bainesii</i> (Hook.f.) Gilg				
<i>Limeum fenestratum</i> (Fenzl) Heimerl var. <i>fenestratum</i>				
<i>Limeum myosotis</i> H.Walter var. <i>confusum</i> Friedrich				
<i>Limeum sulcatum</i> (Klotzsch) Hutch. var. <i>gracile</i> Friedrich				
<i>Limeum viscosum</i> (J.Gay) Fenzl subsp. <i>viscosum</i> var. <i>macrocarpum</i> Friedrich				
<i>Lipocarpha micrantha</i> (Vahl) G.C.Tucker				
<i>Lipocarpha rehmannii</i> (Ridl.) Goetgh.				
<i>Maerua schinzii</i> Pax		Forestry Protected		
<i>Marsdenia macrantha</i> (Klotzsch) Schltr.				
<i>Marsdenia sylvestris</i> (Retz.) P.I.Forst.				
<i>Melanthera marlothiana</i> O.Hoffm.				
<i>Melhania acuminata</i> Mast. var. <i>acuminata</i>				
<i>Melhania virescens</i> (K.Schum.) K.Schum.				

<i>Melinis repens</i> (Willd.) Zizka subsp. <i>grandiflora</i> (Hochst.) Zizka				
<i>Merremia palmata</i> Hallier f.				
<i>Microchloa caffra</i> Nees				
<i>Microchloa indica</i> (L.f.) P.Beauv.				
<i>Miscanthus junceus</i> (Stapf) Pilg.				
<i>Mollugo nudicaulis</i> Lam.				
<i>Momordica humilis</i> (Cogn.) C.Jeffrey				
<i>Monechma debile</i> (Forssk.) Nees				
<i>Montinia caryophyllacea</i> Thunb.				
<i>Neorautanenia mitis</i> (A.Rich.) Verdc.				
<i>Nesaea rigidula</i> (Sond.) Koehne				
<i>Nidorella resedifolia</i> DC. subsp. <i>resedifolia</i>				
<i>Ochna cinnabarina</i> Engl. & Gilg				
<i>Ochna pulchra</i> Hook.f.				
<i>Ocimum americanum</i> L. var. <i>americanum</i>				
<i>Ocimum filamentosum</i> Forssk.				
<i>Olea europaea</i> L. subsp. <i>africana</i> (Mill.) P.S.Green				
<i>Oligomeris dipetala</i> (Aiton) Turcz. var. <i>dipetala</i>				
<i>Opilia campestris</i> Engl. var. <i>campestris</i>				
<i>Ornithoglossum calcicola</i> K.Krause & Dinter	Endemic			
<i>Ornithoglossum vulgare</i> B.Nord.				
<i>Oropetium capense</i> Stapf				
<i>Osyris lanceolata</i> Hochst. & Steud.				
<i>Otoptera burchellii</i> DC.				
<i>Ozoroa crassinervia</i> (Engl.) R.Fern. & A.Fern.				
<i>Ozoroa insignis</i> Delile subsp. <i>insignis</i>				
<i>Ozoroa paniculosa</i> (Sond.) R.Fern. & A.Fern. var. <i>paniculosa</i>				
<i>Ozoroa schinzii</i> (Engl.) R.Fern. & A.Fern.	Near Endemic			
<i>Pachypodium lealii</i> Welw.	Near Endemic	Protected		
<i>Pancratium tenuifolium</i> Hochst. ex A.Rich.				

<i>Panicum coloratum</i> L. var. <i>coloratum</i>				
<i>Panicum gilvum</i> Launert				
<i>Panicum maximum</i> Jacq.				
<i>Parapolydora fastigiata</i> (Oliv. & Hiern) H.Rob.				
<i>Pavetta zeyheri</i> Sond.				
<i>Pavonia burchellii</i> (DC.) R.A.Dyer				
<i>Pegolettia senegalensis</i> Cass.				
<b><i>Peltophorum africanum</i> Sond.</b>		Forestry Protected		
<i>Pennisetum glaucum</i> (L.) R.Br.				
<i>Pergularia daemia</i> (Forssk.) Chiov. var. <i>daemia</i>				
<i>Petalidium englerianum</i> (Schinz) C.B.Clarke				
<b><i>Petalidium rautanenii</i> Schinz</b>	Endemic			
<i>Philenoptera nelsii</i> (Schinz) Schrire				
<i>Phyllanthus maderaspatensis</i> L.				
<i>Phyllanthus pentandrus</i> Schumach. & Thonn.				
<i>Physalis angulata</i> L.				
<i>Plicosepalus undulatus</i> (E.Mey. ex Harv.) Tiegh.				
<i>Polygala leptophylla</i> Burch. var. <i>leptophylla</i>				
<i>Portulaca kermesina</i> N.E.Br.				
<i>Pseudogaltonia clavata</i> (Mast.) E.Phillips				
<i>Psydrax livida</i> (Hiern) Bridson				
<b><i>Rennera eenii</i> (S.Moore) Källersjö</b>	Endemic			Near Threatened
<i>Rennera limnophila</i> Merxm.				
<i>Rhus ciliata</i> Licht. ex Schult.				
<i>Rhus marlothii</i> Engl.				
<i>Rhynchosia minima</i> (L.) DC. var. <i>minima</i>				
<i>Rhynchosia minima</i> (L.) DC. var. <i>prostrata</i> (Harv.) Meikle				
<i>Rhynchosia sublobata</i> (Schumach. & Thonn.) Meikle				
<i>Rothea myricoides</i> (Hochst.) Steane & Mabb. var. <i>myricoides</i>				
<i>Rottboellia cochinchinensis</i> (Lour.) Clayton				

<i>Sansevieria aethiopica</i> Thunb.				
<i>Schmidtia pappophoroides</i> Steud.				
<i>Schoenoplectiella leucantha</i> (Boeck.) Lye				
<i>Scleria longispiculata</i> Nelmes				
<i>Sclerocarpus africanus</i> Jacq.				
<i>Seddera suffruticosa</i> (Schinz) Hallier f. var. <i>suffruticosa</i>				
<i>Senna italica</i> Mill. subsp. <i>micrantha</i> (Brenan) Lock				
<i>Sericorema sericea</i> (Schinz) Lopr.				
<i>Sesamum triphyllum</i> Welw. ex-Asch. var. <i>grandiflorum</i> (Schinz) Merxm.				
<i>Sesamum triphyllum</i> Welw. ex-Asch. var. <i>triphyllum</i>				
<i>Sesuvium sesuvioides</i> (Fenzl) Verdc. var. <i>angustifolium</i> (Schinz) Gonç.				
<i>Setaria sagittifolia</i> (A.Rich.) Walp.				
<i>Setaria sphacelata</i> (Schumach.) Stapf & C.E.Hubb. ex M.B.Moss var. <i>sericea</i> (Stapf) Clayton				
<i>Setaria verticillata</i> (L.) P.Beauv.				
<i>Sida ovata</i> Forssk.				
<i>Solanum delagoense</i> Dunal				
<i>Solanum tettense</i> Klotzsch var. <i>renschii</i> (Vatke) A.E.Gonç.				
<i>Sorghum bicolor</i> (L.) Moench subsp. <i>arundinaceum</i> (Desv.) De Wet & Harlan				
<i>Spirostachys africana</i> Sond.				
<i>Sporobolus panicoides</i> A.Rich.				
<i>Stapelia schinzii</i> A.Berger & Schltr. var. <i>schinzii</i>	Endemic	Protected		
<i>Steganotaenia araliacea</i> Hochst. var. <i>araliacea</i>				
<i>Stigmatorhynchus hereroensis</i> Schltr.	Endemic			
<i>Striga asiatica</i> (L.) Kuntze				
<i>Syncolostemon bracteosus</i> (Benth.) D.F. Otiemo				
<i>Tapinanthus guerichii</i> (Engl.) Danser				
<i>Tephrosia purpurea</i> (L.) Pers. subsp. <i>leptostachya</i> (DC.) Brummitt var. <i>pubescens</i> Baker				
<i>Terminalia prunioides</i> M.A.Lawson				

<i>Terminalia sericea</i> Burch. ex-DC.				
<i>Tinnea rhodesiana</i> S.Moore				
<i>Trachyandra arvensis</i> (Schinz) Oberm.				
<i>Trachypogon spicatus</i> (L.f.) Kuntze				
<i>Tragia okanyua</i> Pax				
<i>Tragus pedunculatus</i> Pilg.				
<i>Tragus racemosus</i> (L.) All.				
<i>Triaspis hypericoides</i> (DC.) Burch. subsp. <i>nelsonii</i> (Oliv.) Immelman				
<i>Tribulus terrestris</i> L.				
<i>Trichodesma angustifolium</i> Harv. subsp. <i>argenteum</i> Retief & A.E.van Wyk				
<i>Trochomeria macrocarpa</i> (Sond.) Hook.f. subsp. <i>vitifolia</i> (Hook.f.) R.Fern. & A.Fern.				
<i>Tulbaghia tenuior</i> K.Krause & Dinter				
<i>Urochloa panicoides</i> P.Beauv.				
<i>Urochloa trichopus</i> (Hochst.) Stapf				
<i>Vangueria proschii</i> Briq.				
<i>Waltheria indica</i> L.				
<i>Willkommia annua</i> Hack.				
<i>Ximenia caffra</i> Sond. var. <i>caffra</i>				
<i>Zannichellia palustris</i> L.				