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MANGROVE (PTY) LTD

SCOPING REPORT (ASSESSMENT) AND EMP: PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795, 7796,7798,7799 & 7800 IN KHOMAS, HARDAP AND OMAHEKE REGIONS

SEPTEMBER 2021

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ACRONYMS AND ABBREVIATIONS

Below a list of acronyms and abbreviations used in this report.

Acronyms	Definition
EAPAN	Environmental Assessment Professionals' Association of Namibia
EPL	Exclusive Prospecting License
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
MET	Ministry of Environment and Tourism
MET: DEA	Ministry of Environment and Tourism: Department of Environmental Affairs
Target area	The area of the EPL intended for exploration activities
TLB	Tractor-Loader-Backhoe
MME	Ministry of Mines and Energy

Units used in the report

Unit	Definition
°C	degrees centigrade
cm/s	centimetres per second
g	grams
g/ℓ	grams per litre
g/m^2	grams per square metre
km	kilometres
km/h	kilometres per hour
km^2	square kilometres
m	metres
m^3/day	cubic metres per day
mg/ℓ	milligrams per litre
Mℓ	megalitre (1,000 m^3)
MLD	megalitres per day
mm	millimetres
m/s	metres per second
ppt	parts per thousand
tons/km^2	tons per square kilometre
>	greater than
<	less than
%	percent
µg/ℓ	micrograms per litre

µM	Micromole
µm	Micron

1 INTRODUCTION

1.1 INTRODUCTION TO THE PROPOSED PROJECT

In 2021, Mangrove (PTY) Ltd ("Mangrove") proposes to undertake exploration activities for Base and Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear Fuel Minerals and Precious Metals on Exclusive Prospecting Licenses ("EPLs") 7795; 7796; 7797; 7798; 7799 and 7800 (EPLs 7795 - 7800) in Khomas, Hardap and Omaheke regions (Refer to Figure 1-1 for an overall locality map to all the EPLs).

Mangrove through the Ministry of Mines and Energy (MME) have undertaken extensive baseline review of the EPLs based on historical geological mapping and water drilling activities that have recorded the existence of potential metals from water borehole logging which were largely dismissed in the past as being of no economic significance. **The proposed exploration approach will be structured into three phases and the activities and results of each phase will inform the activities to be undertaken in the following phase until there is sufficient justification for an exploratory drilling program**. The proposed exploration programme will be implemented accordingly and ensure that aspects related to environmental and social aspects are addressed accordingly through the Environmental Impact Assessment Process.

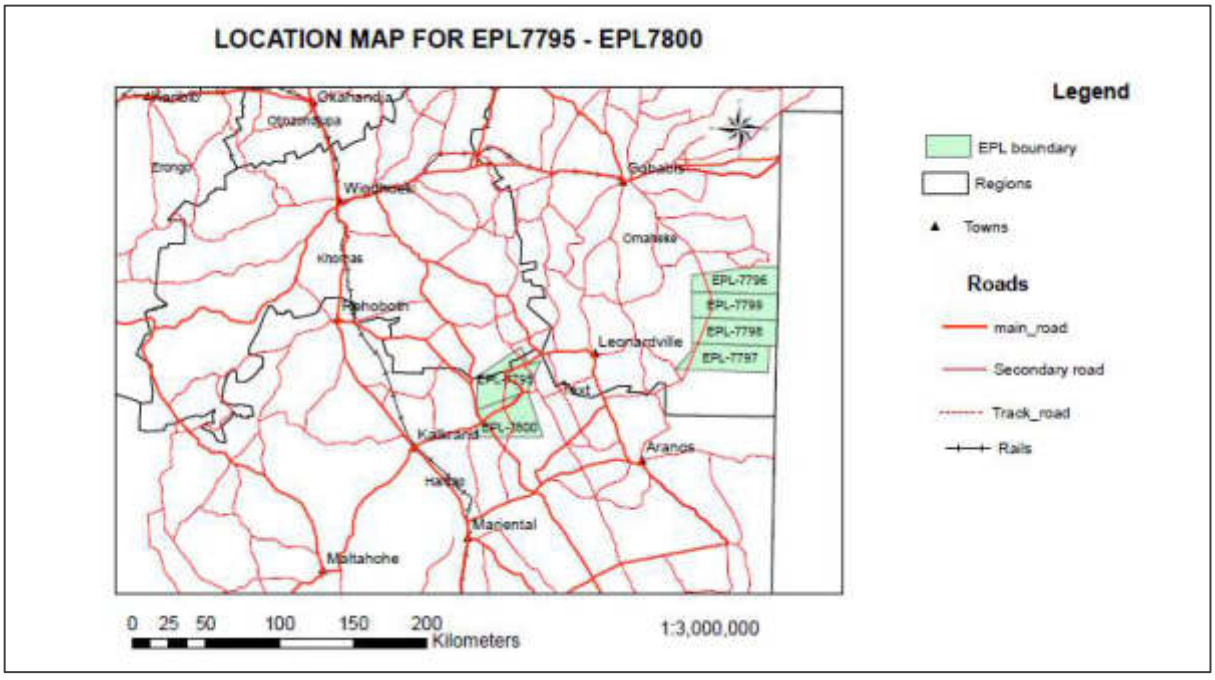


Figure 1-1: Locality Map to Mangrove EPLs proposed for exploration activities (Mangrove and Hiveluah 2021)

EPL 7795

EPL 7795 is located about ±102 km south east of Rehoboth (23.637222 S; 18.195556 E) and can be accessed via the C25 road. The EPL is split by both Khomas and Hardap regions and encompasses an area of about 99966.19 Hectares (ha). Refer to Figure 1-2 for detail on the EPL.

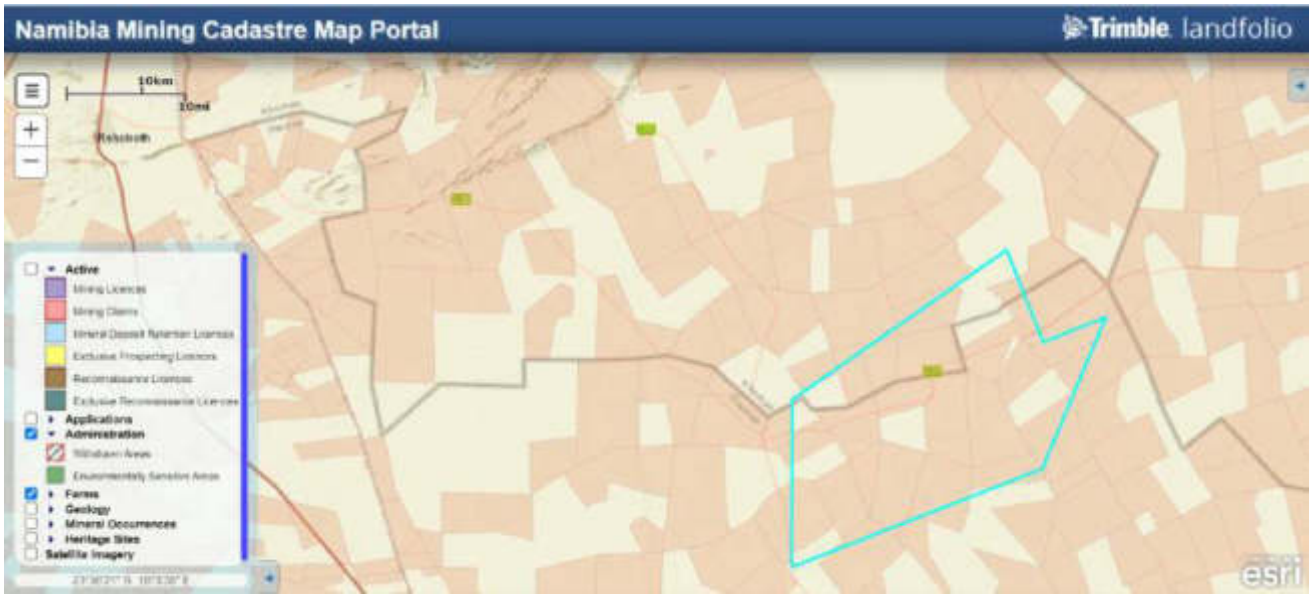


Figure 1-2: Locality Map to EPL 7795 (Namibia Mining Cadastre Map Portal 2021)

EPL 7800

EPL 7800 is located about ±113 km South-west of Rehoboth (23.914722 S; 18.1975 E) and can be accessed via the C25 road. The EPL is within the boundary of the Hardap Region and encompasses an area of about 99985.07 ha. Refer to Figure 1-3 for detail on the EPL location.

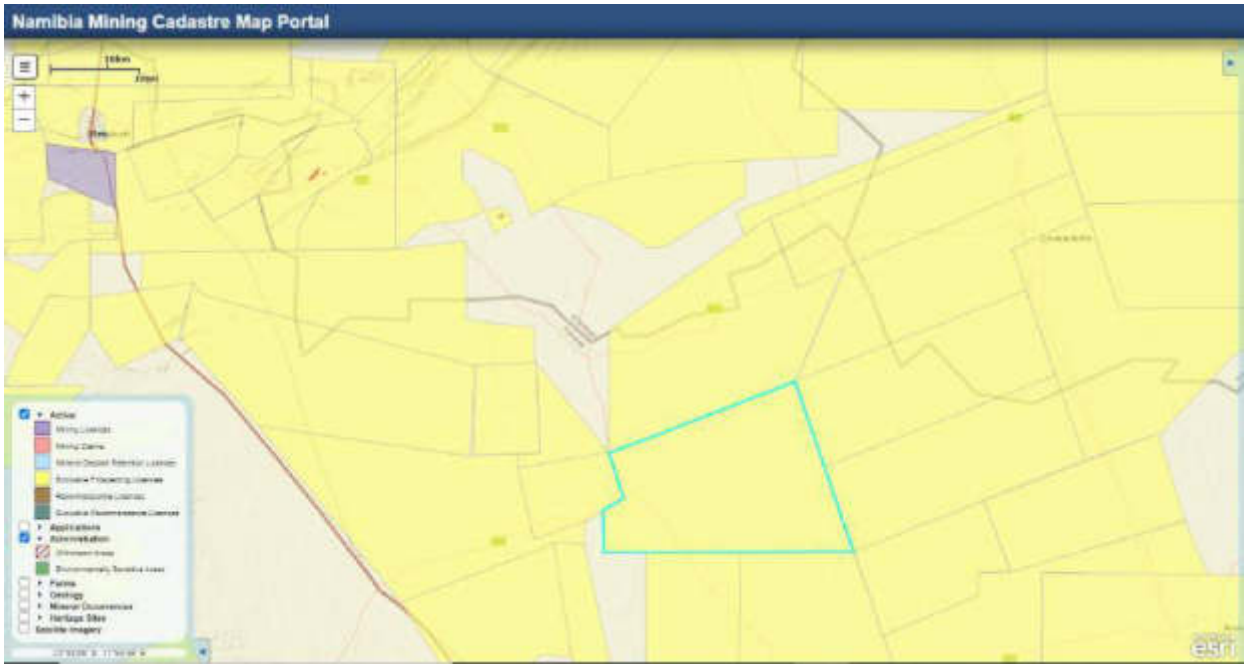


Figure 1-3: Locality Map to EPL 7800 (Namibia Mining Cadastre Map Portal 2021)

EPL 7796

EPL 7796 is located about ±85 km South-west of Gobabis (23.031667 S; 19.741389 E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 91155.30 ha. Refer to Figure 1-4 for detail on the EPL.

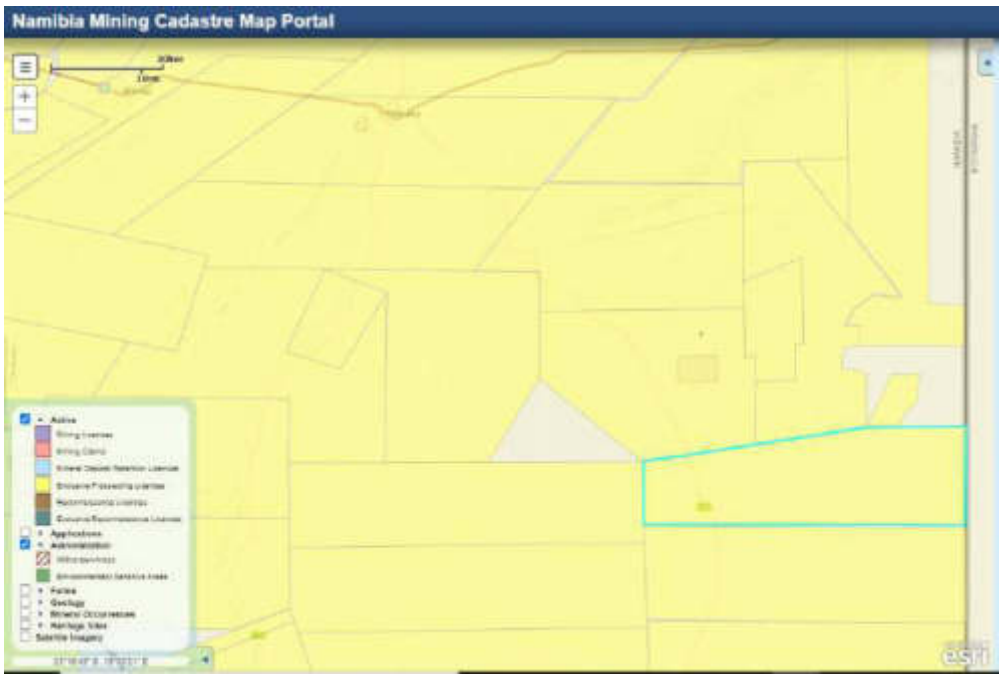


Figure 1-4: Locality Map to EPL 7796 (Namibia Mining Cadastre Map Portal 2021)

EPL 7799

EPL 7799 is located about ± 90 km south-west of Gobabis (23.179444S; 19.699722 E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 91155.30 ha. Refer to Figure 1-5 for detail on the EPL.

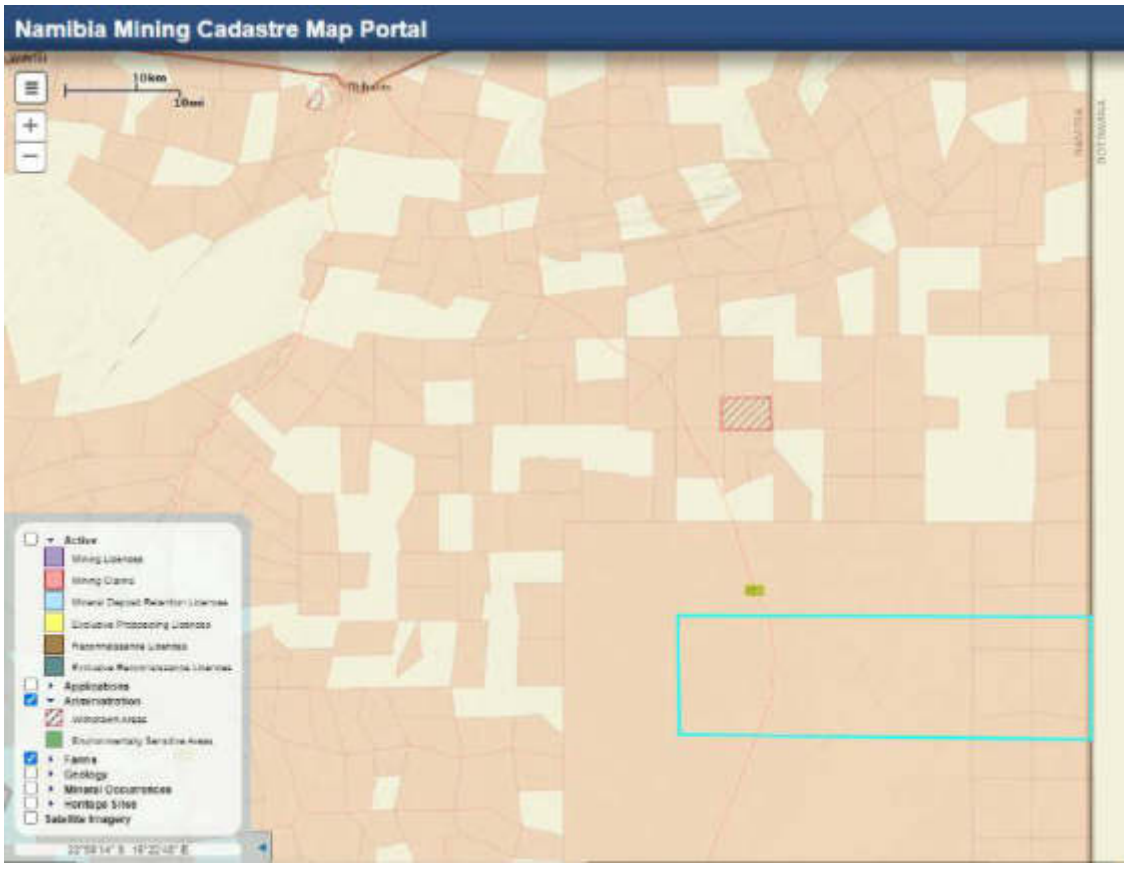


Figure 1-5: Locality Map to EPL 7799 (Namibia Mining Cadastre Map Portal 2021)

EPL 7798

EPL 7798 is located about ± 112 km south-west of Gobabis (23.350556S; 19.673611 E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 99985.19 ha. Refer to Figure 1-6 for detail on the EPL 7798.

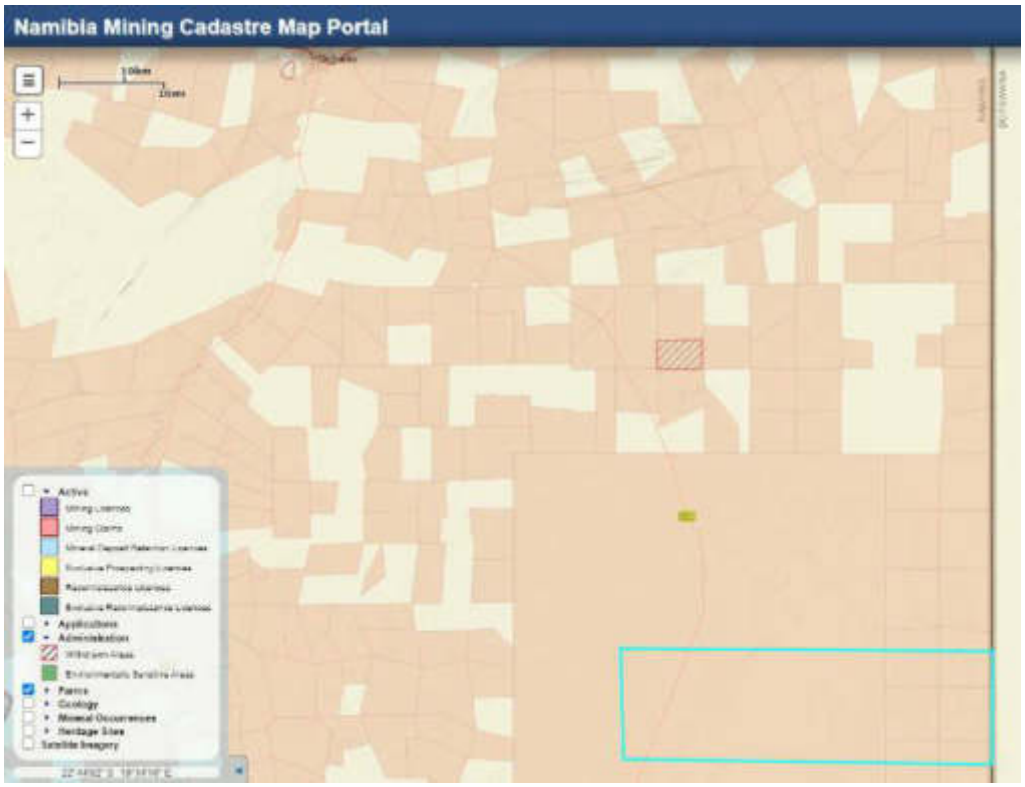


Figure 1-6: Locality Map to EPL 7798 (Namibia Mining Cadastre Map Portal 2021)

EPL 7797

EPL 7797 is also located about ± 126 km south-west of Gobabis (23.508611S; 19.629444E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 99894.80 ha. Refer to Figure 1-4Figure 1-7 for detail on the EPL 7797.

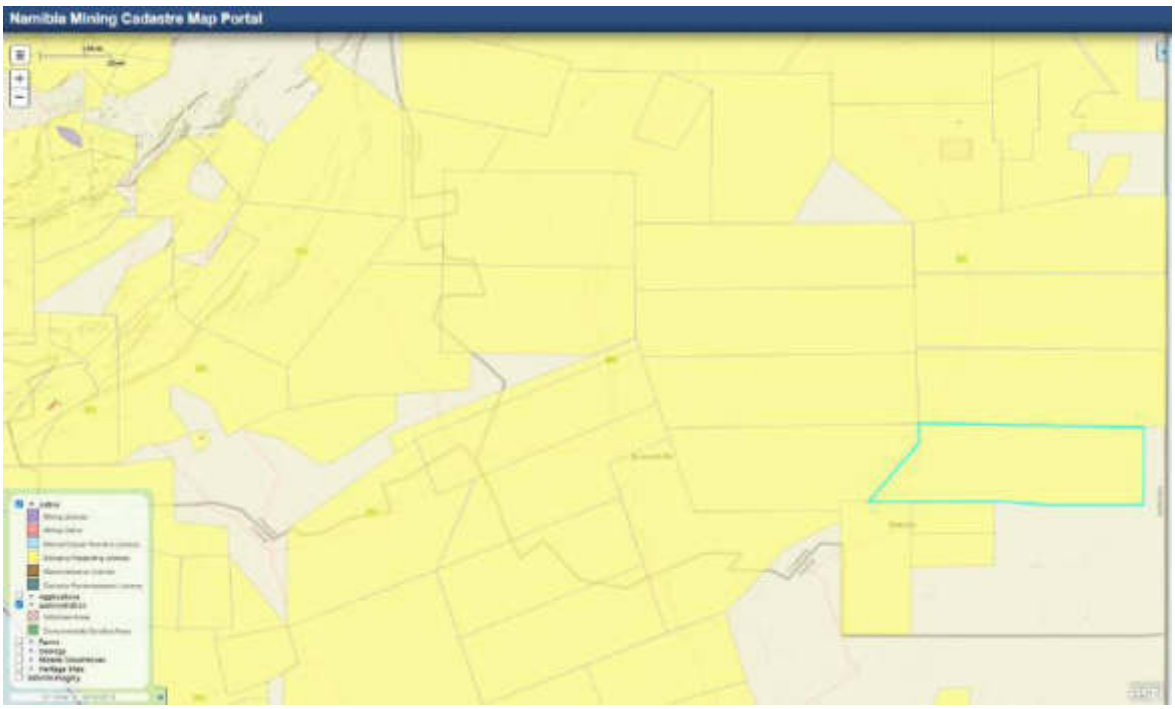


Figure 1-7: Locality Map to EPL 7797 (Namibia Mining Cadastre Map Portal 2021)

Mangrove require an Environmental Clearance Certificate (ECC) from the Ministry of Environment Forestry and Tourism (MEFT): Department of Environmental Affairs (DEA) to conduct the proposed exploration activities on EPLs 7795 – 7800.

1.2 MOTIVATION (NEED AND DESIRABILITY)

The Ministry of Mines and Energy (MME), Directorate of Mines undertakes to exploit the country's mineral resources in a manner which integrates mining into the various economic sectors for the socio-economic development of the country. In order to achieve this, MME issues EPLs to various entities for the exploration of minerals within the country. Mangrove intends to explore which metals and/or minerals could be found in the EPLs 7795-7800. 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 EIA PROCESS

1.3.1 Introduction to EIA for the proposed exploration activities

EIA's in Namibia are regulated by the Ministry of Environment, Forestry and Tourism (MEFT) in terms of the Environmental Management Act, 7 of 2007. This Act was gazetted on 27 December 2007 (Government Gazette No. 3966). The List of Activities that may not be undertaken without an Environmental Clearance Certification (ECC) and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) were promulgated on 6 January 2012.

The following listed activities are relevant to the proposed exploration activities on EPLs 7795-7800:

Mining and Quarrying Activities

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

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

3.3 Resource extraction, manipulation, conservation and related activities.

Water Resource Developments

8.1 The abstraction of ground or surface water for industrial or commercial purposes.

8.2 The abstraction of groundwater at a volume exceeding the threshold authorised in terms of a law relating to water resources.

As interpreted above, the proposed exploration activities require an EIA process prior to any activities on the localities.

1.3.2 EIA process for the proposed exploration activities on EPLs 7795-7800

An application will be submitted to the Ministry of Environment Forestry and Tourism (MEFT): Department Environmental Affairs (DEA) for the activities relating to the EPLs. An EIA process is being conducted in terms of the Environmental Management Act, 7 of 2007. This process includes: a screening phase and a scoping phase, which will include an impact assessment (qualitative) and the production of an Environmental Management Plan (EMP).

The main purpose of this report is to provide information relating to Mangrove proposed exploration activities and to indicate which environmental aspects and potential impacts have been identified during the Screening and Scoping phases. This Scoping Report was developed through baseline data, site visits and consultation with relevant stakeholders. An Environmental Management Plan (EMP) is also included as part of this report (Section 9).

This report is the Scoping Report and EMP. Taking the above mentioned into consideration, this report will provide sufficient information for the MEFT to make an informed decision regarding the proposed exploration activities, and whether an environmental clearance certificate can be issued or not.

More detailed information on the Scoping Report and EMP is provided in Section 2.

1.3.3 EIA Scoping process

The EIA Scoping process and corresponding activities are outlined in Table 1-1 below.

Table 1-1: EIA Scoping process for proposed Exploration activities on EPLs (7795-7800)

Objectives	Corresponding activities
Project initiation and Screening Phase (March and July-August 2021)	
• Request for Project information, project description etc; • Identify environmental aspects and potential impacts internally; • Notify the competent authority and decision-making authority of the proposed project and EIA process. • Register the project on the MEFT- EIA online portal. • Initiate the EIA Scoping process.	• Project initiation discussions with the project proponent. Identify environmental issues and determine legal requirements. • A pre-application consultation with MME and the submission of the ECC application form was done. • Registration of the project with MEFT
Scoping phase (including assessment of impacts) (June- August 2020)	
• Identify interested and/or affected parties (IAPs) (specifically relevant and neighboring business operators) and involve them in the scoping process through information sharing. • Further identify potential environmental issues associated with the proposed project. • Consider alternatives. • Provide a description of the potentially affected environment • Assessment of potential environmental impacts associated with the proposed project.	• Notify relevant government authorities and IAPs of the project and EIA process (telephone calls, e-mails, distribution of background information documents, newspaper advertisements and site notices) • Interested and affected party (IAP) registration and comments; • Site visit and Focus Group meetings • Compilation of Scoping Report and EMP • Distribute Scoping Report to relevant authorities and IAPs for review (August 2021). • Forward finalised Scoping Report and EMP with IAPs comments to Competent Authority MME who will then forward the report to MEFT for decision making (September 2021).

• Additional design requirements and management and mitigation measures. • Receive feedback on application	

1.3.4 EIA Team

The EIA process management role is performed by Marvin Sanzila of Marvin Environmental Project Consultants CC with technical input by Envirodu Consulting and Training Solutions cc.

Marvin Environmental Projects Consultants CC (Marvin Consultants) is a registered independent company comprised of a team of experts and associates. Marvin Sanzila (MS) was appointed by SCT to undertake the EIA process required for the proposed upgrade. The EIA process management role is performed by Marvin Sanzila as the EIA practitioner. MS is a certified Environmental Practitioner and under the Environmental Assessment Professionals Association of Namibia (EAPAN) and serves on the board as the Secretary General. MS has nine years of relevant experience in environmental management, Project Management, conducting/managing EIAs, compiling EMPs and implementing EMPs and Environmental Management Systems. MS has assisted various consultants in conducting Environmental Impact Assessments (EIAs) for project appraisals with the regulating authorities. All projects experience related to EIAs have been successfully awarded Environmental Clearance Certificates (ECCs) by the regulating authority and are operational, enhancing both local and international business sector while implementing best practice environmental and social management tools. Apart from Project Management and Environmental Assessments, MS has presented and narrated two films, one that emphasizes the role of the environmental Management Act no.7 of 2007 in the modern-day Namibian development context and the other that looks at Namibia's Wetlands and its potential for ecotourism.

Twalinohamba Akawa has a master's degree of Philosophy in Environmental Management (Stellenbosch University, 2012) specialising in development planning and environmental analysis. Teaching and research from the University of Namibia exposed him to a wide range of project activities: ecosystem health assessment; water quality monitoring, standard and treatment; fisheries and aquaculture. Mr Twalinohamba is also an Environmental Assessment Practitioner providing services across various sectors of development. Services include; EIA/scoping, socio-economic, ecosystem and biodiversity assessments; climate risk analysis, mitigation and resilience. His current focus/interest is the transfer/application of new technologies (i.e. the essentials eight: artificial intelligence, virtual reality, internet of things, etc) in mitigating environmental risks such as droughts, pollution, environmental degradation and others.

The relevant curriculum vitae (EIA Practitioners) documentation is attached in Appendix F. The environmental project team is outlined in Table 1-2 below.

Table 1-2: The Environmental project team

Team	Name	Designation	Tasks and roles
Mangrove	Leefa Ndilula	Executive	Executive
Hiveluah Consult	Garneth Shamaila	Project Manager	Management and overall coordination of project related activities.
Marvin Environmental Projects Consultants CC	Marvin Sanzila	EIA project Practitioner and Project Manager.	Management of the EIA process and compilation of relevant reports.
	Christine Links	Project Administrator	All Project administrative needs
	Twalinohamba Akawa	Envirodu Consulting and Training Solutions cc	Technical input reviewer

2 SCOPING METHODOLOGY

2.1 INFORMATION COLLECTION

The main sources of information for the preparation of this Scoping Report include:

- Project information provided by Mangrove which includes:
    - Description of proposed Exploration activities on EPLs (7795-7800)
    - Locality Maps to EPLs
- Site visit;
- Consultation with Interested and Affected Parties (IAPs);
- Mangrove and Hiveluah Consult Environmental Protection Brief Report
- Literature research.

2.2 SCOPE TO THE SCOPING REPORT

The main purpose of this Scoping Report is to indicate which environmental aspects relates to the proposed exploration activities that might have an impact on the environment, to assess them and to provide management and mitigation measures to avoid or reduce these impacts. Table 2-1 outlines the Scoping Report requirements contained in Section 8 of the Environmental Impact Assessment Regulations

promulgated in February 2012 under the Environmental Management Act, 7 of 2007. The table includes reference to the relevant sections in the report.

Table 2-1: Scoping report requirements stipulated in the EIA regulation

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report
(a) the curriculum vitae of the EAP who prepared the report;	Appendix E
(b) a description of the proposed activity;	Sections 4
(c) a description of the site on which the activity is to be undertaken and the location of the activity on the site	Section 1 &4
(d) a description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Sections 6
(e) an identification of laws and guidelines that have been considered in the preparation of the Scoping Report;	Section 3
(f) details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including - **(i) the steps that were taken to notify potentially interested and affected parties of the proposed application;** **(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;** **(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application; and** **(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;**	Section 2
(g) a description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Sections 7
(h) a description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Section 8
(i) terms of reference for the detailed assessment; and	
(j) a draft management plan, which includes - **(i) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;** **(ii) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and**	Section 9

(iii) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.	

2.3 PUBLIC PARTICIPATION PROCESS AND COVID-19 PANDEMIC RESTRICTIONS

The COVID-19 pandemic is a pandemic of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak was first identified in Wuhan, China, in December 2019. The World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30th January, and a pandemic on 11th March. The COVID-19 pandemic reached Namibia on 14th March 2020. On 14 April 2020, the Government of Namibia stated a more aggressive state of emergency and declared a lockdown from midnight 17 April 2020 to midnight 4 May 2020. Prior to the lapse of the lockdown, a 4-stage strategy was developed to gradually ease restrictions. The EIA process was undertaken in the currently active stage 3 of the Namibian COVID-19 guideline.

In order to avoid human contact and comply as much as possible to the national regulations on COVID-19, Focus group meetings with key stakeholders were undertaken at a maximum of 10 people per meetings. The public participation/ stakeholder's engagement process is aimed to ensure that all persons (i.e. relevant business neighbors/ and/or organisations) that may be affected by, or interested in, the proposed activities were informed of the project and could register their views and concerns. By consulting with IAPs the range of environmental issues to be considered in the Scoping Report (including the assessment of impacts) has been given specific context and focus.

Included below is a summary of the people consulted, the process that was followed, and the issues that were identified.

2.3.1 Mangrove Stakeholders

The following table (Table 2-2) provides a list of stakeholders consulted during the EIA process.

Table 2-2: EIA process stakeholders

Stakeholder Grouping	Organisation
Government Ministries	• Ministry of Environment, Forestry and Tourism (MEFT) ○ Department of Environmental Affairs • Ministry of Agriculture Water and Land reform; • Ministry of Urban and Rural Development;

Affected Landowners	• Landowners in the EPLs (7795-7800); • Ovambanderu Traditional Authority; • Farmers Union;
Regional and local Authorities	• Khomas Regional Council • Rehoboth Town Council • Gobabis Town Council
Other interested and/ or affected parties	• Any other people with an interest in, or who may be affected by, the proposed project.

The full stakeholder database for this project is included in Appendix B of the report.

2.3.2 Steps in the consultation process

Table 2-3 sets out the steps in the consultation process that were conducted during the EIA process:

Table 2-3: Consultation process with IAPs

TASK	DESCRIPTION	DATE	References
Notification - regulatory authorities and IAPs			
IAP identification	The stakeholder database was created and has been updated throughout the EIA Scoping process, where required.	March & June 2021	Appendix A: IAP database.
IAPs invitation and Distribution of BIDs	Post Mail and emails where relevant distributing the BID and inviting the IAPs to participate in the EIA process were sent to contacts on the IAPs Database.	July-September 2021	Appendix B: Post Mail correspondences including Cover Letters
Distribution of background information document (BID) and telephone calls	BIDs (Appendix B1) with cover letters (post mail) were distributed to relevant authorities and IAPs on the stakeholder database. The purpose of the BID was to inform IAPs about Mangrove's proposed exploration activities, the EIA (Scoping) process being followed, possible environmental impacts and means of providing input to the EIA (Scoping) process.	July-September 2021	• Appendix B: Post Mail correspondences including Cover Letters • Appendix B1: BID

TASK	DESCRIPTION	DATE	References
Newspaper Advertisements	Block advertisements were placed as follows: • New Era (10 March 2021); • The Namibian Sun (24 March 2021);	March 2021	• Appendix C: Newspaper Advertisement
Focus Group Meetings and submission of comments			
Stakeholders Engagement Comments Responses	Reference to the advertisements above and the distribution of the BIDs to the stakeholders, the stakeholders were given an opportunity to raise comments or any concerns. Physical contact was avoided as much as possible. The Stakeholders are still given more opportunity to raise any concerns. During the exploration campaign, stakeholders will again be contacted for input in the project implementation.		
Review of draft Scoping Report			
IAPs and authorities (excluding MEFT) review of Scoping Report and EMP	The Scoping Report (main report, excluding appendices) will be distributed to all IAPs upon request. The Scoping Report will be discussed with the landowners on the EPLs (7795-7800) and emailed where email addresses are furnished. Authorities and IAPs are given 21 working days to review the Scoping Report and submit comments in writing.	August- October 2021	
MEFT review of Scoping Report and EMP	A copy of the final Scoping Report, including authority and IAP review comments, will be delivered to the competent Authority (MME) on completion of the public review process, for review and then MME is to forward report to MEFT for decision. Where necessary, an updated version of the EIA report will be submitted to MME and MEFT for review.	October 2021	

2.3.3 Summary of issues raised

Reference to the advertisements on the 10th and 24th of March 2021 in New Era and The Namibian Sun Newspaper as mentioned in section 2.3.2 and the distribution of the BIDs by mail post to the landowner's farms, the stakeholders were given an opportunity to raise comments or any concerns throughout March to September 2021. Additional grace period has been included in October and farmers are also directly contacted for input. The only comments raised relates to the need to engage the farmers at the time when target sites within the EPLs have been formalized this is only done prior to implementation of the activities. This report will be updated accordingly shall there still be any concerns raised. A preliminary planning strategy has been included in the EMP to allow another opportunity to engage with the landowners and plan accordingly prior to the exploration activites. No exploration activities will be undertaken without engagement of the owner of the land. There have not been additional concerns raised at this stage of the EIA process.

3 ENVIRONMENTAL AND SOCIAL LEGISLATIVE REQUIREMENTS

3.1 NAMIBIAN LEGAL FRAMEWORK

The relevant Namibia legislation, with regards to environmental aspects, that will be required during the EIA process is detailed as follows.

3.1.1 The Constitution of the Republic of Namibia

The Constitution of the Republic of Namibia (1990) provides the set of foundational principles according to which Namibia is governed. Article 95 (L) of the Constitution commits the state to promote sustainable development by "*maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians both present and future…"*.

The constitutional recognition of environmental concerns triggered widespread legislative reform relating to the management of natural resources in Namibia. The country's environmental protection effort is currently comprised of the Environmental Management Act (7 of 2007) and its Regulations (2012).

3.1.2 Namibia's Environmental Impact Assessment Policy

The Environmental Impact Assessment (EIA) Policy of 1995 promotes accountability and informed decision making through the requirement of EIAs for listed programmes and projects (activities). The EIA Policy is currently enforced through the Environmental Management Act (No. 7 of 2007 (EMA)) and the EIA Regulations of 6 February 2012.

3.1.3 Environmental Management Act

The EMA was promulgated in December 2007 and came into effect on 6 February 2012. Part 1 of the EMA describes the various rights and obligations that pertain to citizens and the Government. The main objectives of the Act are to ensure that:

- Significant effects of activities on the environment are considered carefully and timeously;
- There are opportunities for timeous participation by I&APs throughout the assessment process; and
- Findings are considered before any decision is made in respect of activities.

Part 2 of the EMA sets out a number of principles of environmental management which give effect to the provisions of the Constitution for integrated environmental management. Decision-makers must take these principles into account when deciding whether or not to approve a proposed project. In terms of this legal framework certain identified activities may not commence without an environmental clearance (or amendment thereto) that is issued by MEFT.

3.1.4 EIA Regulations

The EIA Regulations, promulgated on 6 February 2012 in terms of Section 56 of the Environmental Management Act, 2007 provides for the control of certain listed activities. These listed activities are provided in GN No. 29 and are prohibited until an ECC has been obtained from MEFT. Such ECCs, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations. GN No. 30 sets out the procedures and documentation that need to be complied with in undertaking an EIA process. Listed activities applicable to the proposed Project are presented in Section 1.3.1

3.1.5 Other relevant Namibian legislation

Table 3-2 below provides a summary of other relevant environmental and social legislation that may be applicable to the project.

Table 3-1: Other relevant Environmental and social legislation relevant to the project

YEAR	NAME	Natural Resource Use (energy & water)	Emissions to air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health
1990	The Constitution of the Republic of Namibia of 1990	X	X	X	X	X	X	X	X	X	X	X	X	X
1997	Namibian Water Corporation Act, 12 of 1997	X											X	
1992	The Minerals (Prospecting and Mining) Act 33 of 1992	X	X	X	X					X				
2001	The Forestry Act 12 of 2001	X							X	X				
2013	Water Resources Management Act 11 of 2013	X			X								X	
2004	National Heritage Act 27 of 2004										X			X
2007	Environmental Management, Act 7 of 2007	X	X	X	X	X	X	X	X	X	X		X	X

YEAR	NAME	Natural Resource Use (energy & water)	Emissions to air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health
2012	Regulations promulgated in terms of the Environmental Management, Act 7 of 2007													
1975	Nature Conservation Ordinance 14 of 1975	X			X					X	X			
1976	Atmospheric Pollution Prevention Ordinance 11 of 1976		X											
1995	Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation	X	X	X	X	X	X	X	X	X	X	X		X

4 DESCRIPTION OF THE PROPOSED EXPLORATION ACTIVITES

4.1 EXPLORATION METHODOLOGY OVERVIEW FOR ALL EPLS (7795-7800)

The proposed exploration approach on EPLs 7795 - 7800 will be structured into three (3) phases and the activities and results of each phase will inform the activities to be undertaken in the following phase until there is sufficient justification for an exploratory drilling program. These tests are mutually exclusive and working in conjunction with each other to increase the success rate. The critical first phase of the program is thorough, and cost-effective enabling a more exhaustive exploration than with traditional techniques with less environmental impact. The description below relating to the proposed exploration activities applies to all the EPLS and will be implemented accordingly on targeted areas within the EPLs. The Exploration Prospecting Licences are valid for three years it's during this period that the activities will be undertaken as follows:

Phase 1: Year 1 Reconnaissance including Geological Mapping and landowner's engagement

- **Geological Mapping and Google Earth Tool**: Conduct detailed mapping campaign and digitization of mapping data and creation of detailed GIS database from initial regional datasets and consolidate database and design geochemical sampling grid (time frame is subject to ease of obtaining farm access permissions).
- **Exploration Planning and Landowners Engagement**: an exploration implementation programme will be developed and discussed with the identified landowners on targeted areas in the EPLs for all EPLs. It is also at this stage that land access agreements will be spearheaded by Mangrove with the respective land owners.
- **Ground Geophysical Surveys**: The collection of information of the substrata with magnetic and electromagnetic (AMT & IP) surveys to detect any mineralisation in the area.
    - Regional Gravity Surveys
    - National Radiometric Survey
    - Regional Aeromagnetic Survey
    - Existing geological data

Phase 2: Year 2 Geochemical Sampling Campaign and Sample analysis

- **Geochemical Sampling and sample analysis**: Samples of soil and rock are collected and sent for geochemical trace element analysis to determine if sufficient quantities of a base or precious metal or industrial mineral are present. These analyses are conducted by analytical chemistry laboratories.

Phase 3: Year 3 Exploration drilling program including Rehabilitation

- **Drilling**:
    - Core drilling of pilot holes, sample analysis and downhole logging;
    - Infill- drilling campaign at higher resolution

- Ore Body Modelling
- Pre-feasibility study

- **Rehabilitation;**
  - All sites EPLs (7795-7800) will be rehabilitated as per requirements in the Environmental Management Plan (EMP) and shall engage the various landowners on completion.

4.1.1.1 Phase 1: Reconnaissance (Geological Mapping and Landowners engagement)

4.1.1.2 *Geological Mapping*

Geological mapping as detailed above includes the review of geological maps of the area and updating it where relevant, should any further information be obtained. At the early stage of mapping, targeted areas will be identified and engagement with the respective landowners will be initiated.

4.1.1.3 *Google Earth Tool*

Due to its ubiquity, this tool is often overlooked, however it is a free tool that enables surface anomalies, changes in vegetation and geological structure to be found. It will also be used to visualise data such as geochemical and radiometric results. Hiveluah's (Mangrove's Associate) lead consultant Garneth Shamaila is an experienced developer of geospatial systems and is expert at integrating this type of data into Google Earth. **Google Earth will also be used as a tool flag any potential significant risk area assessed in the EIA process and or later raised by the landowners.**

4.1.1.4 *Exploration programme and Landowners engagement (all EPLs)*

Prior to any exploration activities a communication engagement strategy will be developed to ensure land access consents and access agreements are discussed and negotiated with the landowners in targeted areas for exploration activities on the EPLs areas. The Exploration project implementation planning will be discussed thoroughly at this stage.

4.1.1.5 *Ground Geophysical Surveys*

Geophysical surveys are conducted in order to ascertain the mineralisation of a given area. There will be a survey conducted by air and/or ground through sensors such as radar, magnetic and electromagnetic.

When air surveys are conducted, sensors will be mounted to an aircraft, which flies over the target area. These surveys are contracted out to companies specializing in aerogeophysical surveys.

Ground geophysical surveys would be carried out using sensors mounted on vehicles or carried by staff.

The ground geophysical surveys involve the following activities:

- Two to six people will be required to conduct the survey, depending on the type of survey to be conducted.
- Depending on the size of the area to be surveyed, surveyors can cover anywhere from 1km to 10km (along a transect line).
- Surveys will be conducted in early project stages and take approximately 3 to 4 months to complete.

4.1.1.6 *Regional Airborne Geophysics*

The Ministry of Mines and Energy is responsible for all aspects of airborne geophysical surveys to promote mineral exploration with the aim of identifying potential new mine targets (MME 2021). The most important parameters measured are conductivity, magnetic susceptibility, rock density, radioactive element concentration, and reflectance spectra. In addition to the Regional Airborne magnetic data set, a national programme of high-resolution magnetics and radiometric has been completed, and other airborne surveys undertaken in recent years include electromagnetics, hyperspectral scanning and gravity (MME 2021). This type of datasets has been intercepted by Mangrove and Hiveluah Consult and advised the Exclusive Prospecting Licensing Application with the MME for granting of Base and Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear Fuel Minerals and Precious Metals exploration activities on the EPLs.

4.1.1.7 *Regional Aeromagnetic Survey*

Regional aeromagnetic surveys have already been purchased and will be interpreted during the exploration programme as detailed above. This exercise is of paramount importance to the success of the envisaged exploration programme. The country rock in the Nama Group was defined by “total magnetic field intensity” signatures of 32 500nT. Raw aeromagnetic field data were collected at 1km flight line intervals at a flight height of 100m above surface. The elroctromagnetic readings collected from the airborne survey by NAMCOR are presented in figure 4-1 below.

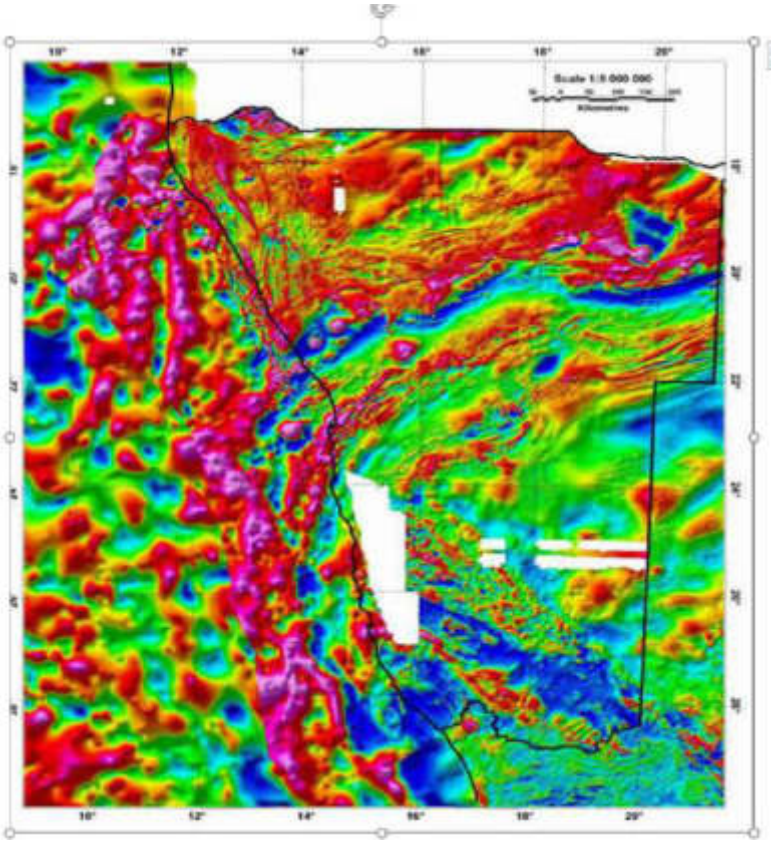


Figure 4-1: Electromagnetic readings from Airborne Survey (NAMCOR 1993)

4.1.2 Phase 2: Geochemical Sampling and sample analysis

4.1.2.1 *Geochemical sampling*

This is arguably one of the best and cheapest pre-drilling activities. A minimum of 600 samples i.e., grab, soil and stream sediment will be collected at a yet to be determined sampling interval. Note that while this is inexpensive, it is an extremely time-consuming process and sampling is guided by success or failure of other aspects of the exploration program.

4.1.2.2 *Soil and rock sampling*

With guidance from the geological mapping, samples of soil or rock are collected, and sent for geochemical major and trace element analysis to determine if sufficient quantities of a base or precious metal or industrial mineral are present. These analyses are conducted by analytical chemistry laboratories.

4.1.2.3 *Pitting and trenching*

This method will be implemented where necessary and mitigatory actions implemented. The various landowners will be required to assist with localized human resources from the farms where necessary to assist with the pitting and trenching.

Pitting and trenching involves the mechanical or manual digging of small-scale pits and trenches in order to provide a soil profile and a representative sample of the mineralisation. With regard to the activities on the EPLs, pitting will only occur should results come back positive for mineralisation. It is anticipated that the average pit will be approximately "5m x 5m and 3m deep".

Trenching is similar to pitting, except a trench will show a latitudinal profile across a longer horizontal access, it is designed to follow an ore body across the landscape. The expected average size of a trench is approximately "30m x 1m and 2m deep".

All open pits and trenches will be backfilled immediately after sampling this will be undertaken in one day exercise. Where this is not possible, temporary fencing will be erected around the pits/trenches.

4.1.3 Phase 3: Exploration Drilling Campaign

4.1.3.1 *Exploration Drilling*

As detailed above, the exploration approach will be structured into phases (1 to 3) and the activities and results of each phase will inform the activities to be undertaken in the following phase until there is sufficient justification for an exploratory drilling program.

The exploration drilling campaign is intercepted from Phase 2 and continues to be implemented in phase 3. The process of the exploration drilling activities can be illustrated in the Gantt Chart below (Figure 4-2) to emphasize the systematic approach and rationalize how each phase informs and determines the timing and tasks of the proceeding phase/s and to emphasize how dynamic the program will be, based on the results. Additionally, the timeline is applicable to all the licenses simultaneously.

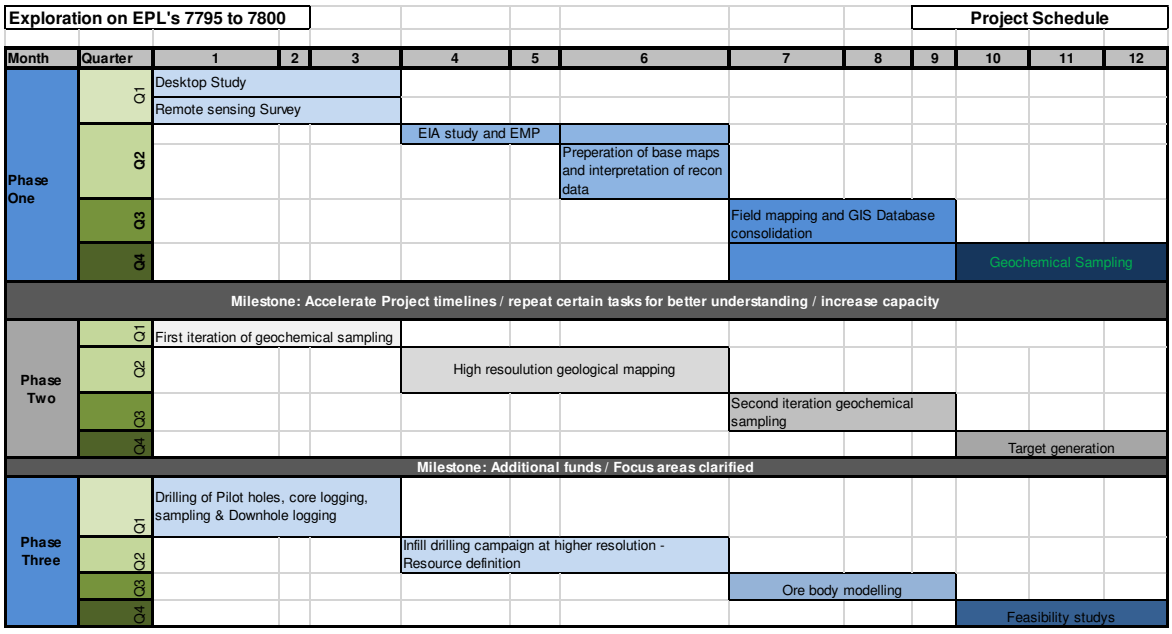


Figure 4-2: Gantt chart to the Exploration drilling campaign (Mangrove and Hiveluah 2021)

The following presets subsequent steps in the proposed Exploration drilling operation on all EPLs (these steps are undertaken prior to the actual drilling operation).

- First iteration of geochemical sampling;
- Higher resolution geological mapping;
- Second iteration of geochemical sampling;
- Target generation.

Exploration drilling is the process of removing rock samples from an area, where it is suspected there is mineralisation. There are various drilling methods that would be considered including, open percussion drilling, reverse circulation drilling and diamond-core drilling, which will take place on the EPL's. While an initial drilling programme is developed, they cover a broad area of the EPLs. Once sampling results are obtained, the area is narrowed down, and holes are drilled closer together in order to obtain a cross-section of the potential ore-body.

A typical drilling pad/area will consist of a drill-rig, an area where the drill core and geological samples can be stored and a storage area for drill equipment, fuel and lubricants. This area is cordoned off and off-limits to those not part of the exploration team. The drilling pad/area is usually cleared and levelled and is approximately 10 m x 10 m. All drill-water will be collected in drill-sumps, which will be managed to prevent overflows.

Reverse Circulation (RC) Drilling/Open percussion drilling:

The drilling mechanism is a pneumatic reciprocating piston known as a "hammer" driving a tungsten-steel drill bit. RC drilling utilizes much larger rigs and machinery and depths of up to 500m are routinely achieved. RC drilling ideally produces dry rock chips, as large air compressors dry the rock out ahead of the advancing drill bit. RC drilling is slower and costlier but achieves better penetration; it is also less costly than diamond coring.

Open percussion drilling differs in that air is blown directly down the drill-hole in order to return rock samples to the surface.

Diamond-core Drilling:

Diamond core drilling uses an annular diamond-impregnated drill bit attached to the end of hollow drill rods to cut a cylindrical core of solid rock. Holes within the bit allow water to be delivered to the cutting face. This provides three essential functions — lubrication, cooling, and removal of drill cuttings from the hole. Diamond drilling is much slower than reverse circulation (RC) drilling due to the hardness of the ground being drilled. Drilling of 1200 to 1800 meters is common and at these depths, ground is mainly hard rock.

Diamond rigs can also be part of a multi-combination rig. Multi-combination rigs are a dual setup rig capable of operating in either a reverse circulation (RC) and diamond drilling role (though not at the same time). This is a common scenario where exploration drilling is being performed in a very isolated location. The rig is first set up to drill as an RC rig and once the desired meters are drilled, the rig is set up for diamond drilling. This way the deeper meters of the hole can be drilled without moving the rig and waiting for a diamond rig to set up on the pad. Samples taken during drilling and trenching will be sent away for analysis, specifically to determine the mineral composition and the level of base metals, namely copper, zinc and lead within the samples. Samples are taken during drilling by either the geologists or geological assistants and can be in either rock, soil or drill core form.

4.2 REHABILITATION

Once the proposed exploration has been concluded, the sites will be rehabilitated in accordance with the requirements of the EMP to restore the condition of the area to as its current state.

5 EXPLORATION'S ACTIVITIES AND PROPOSED INFRASTRUCTURE

5.1 MACHINERY/VEHICLES

The following machinery/vehicles will be utilized in the drilling program for all EPLs

- 1 TLB;
- 1-2 Drill Rigs;
- 1-2 Support Trucks;
- 2-3 4x4 Vehicles;

5.2 PERSONNEL FOR ALL EPLS

It is anticipated that the following personnel will be employed to carry out the above-mentioned activities:

- 2 Geologists;
- 1 Geo-Technician;
- 3 Semi-skilled/un-skilled workers;
- 12 Drill Crew;

Where possible, the exploration and drilling teams will be housed in accommodation located on or near the EPL areas. In remote areas; a camp site will be established to accommodate the team. (The camp site will consist of tents, caravans, make-shift buildings and ablution facilities.)

5.2.1 Waste Management

The following types of waste will be generated during the exploration activities, in small volumes:

- Domestic waste (non-hazardous)

Domestic waste will be stored in a manner that there can be no discharge of contamination to the environment and disposed of correctly.

Potential hydrocarbon spills from vehicles and drilling equipment might lead to soil contamination and needs to be treated as a hazardous waste if not bio-remediated.

5.2.2 Sanitation

In areas where ablution facilities are located in close proximity, and with consent from the Traditional Authority, personnel will use the existing facilities. Should activities be conducted in remote locations, an appropriate toilet facility will be made available for the use of personnel. Strict measures will be implemented to ensure all personnel comply.

5.2.3 Water supply

Water will be required for some drilling (diamond-core drilling) and for dust suppression. Water can be supplied through existing boreholes (with the permission of the local residents and Traditional Authority); new boreholes created by Mangrove specifically for exploration activities (permits required); or trucked in from the nearest municipality. While it would be more efficient to utilize existing boreholes on the property/ farms, this would depend on the agreement reached with each landowner and or Traditional Authority. This arrangement will be part of the preliminary planning discussions with the farm land owners on all EPLs.

5.2.4 Power supply

The various machinery and equipment required for drilling have their own power supplies and or generators attached. Fuel (diesel) will be stored in small mobile bowsers. The drill rigs will be re-fueled with Jerry cans.

5.2.5 Access routes

As far as is practicable, no new roads or tracks will be developed. Access routes to the target sites will be identified and demarcated prior to the commencement of drilling. Motorized access will be limited to existing tracks where possible and defined operational areas. Should additional access roads be required, the routes will be determined and agreed upon with the land owners prior to the commencement of exploration activities.

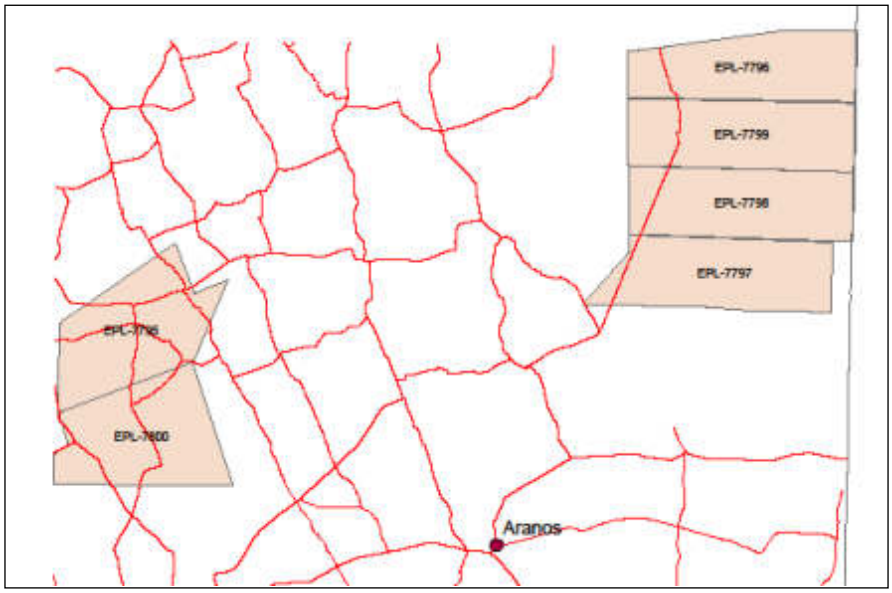


Figure 5-1: Access routes through EPLs (Mangrove & Hiveluah 2021)

5.3 REHABILITATION

Progressive rehabilitation will be implemented at all EPLs. This is required to minimize potential impacts associated with the exploration activities. Farm Landowners will be involved in this process.

6 DESCRIPTION OF THE ENVIRONMENT

6.1 LANDSCAPE, ELEVATIONS AND EPHEMERAL RIVERS

Mangrove targets (6) EPLs located in the central south and southern Kalahari Sandveild (palaeo dunes and pans) that includes Omaheke, Hardap and Khomas regions. EPL 7795 and EPL 7800 are specifically within the Kalahari-Sandveld Schrubland and are next to each other. EPLs (7796, 7797, 7798 and 7799) are within the Kalahari Schrubland-Woodland Mosaic and are also next to each other (Figure 6-1).

The Oilifant Ephemeral River (Main) within the Auob catchment crosses through the northern part of the EPL 7795. On the southern of EPL7800 is the minor Vlak-Auob river flowing into the Auob catchment (Figure 6-2). EPLs (7796, 7797,7798 and 7799) do not have any ephemeral rivers crossing through. The nearest ephemeral river which is the Nossob River which is ±50 km West of EPL 7797 and 60 km West of EPL 7798. In comparison to EPLs 7795 and 7800, Nossob Ephemeral river is ±45 km east.

EPLs 7795 and 7800 are slightly elevated compared to other 4 EPLs. EPLs 7796-7799 are located in the Kalahari sandveld and are flat and low-lying; elevation decrease rapidly when approached from the north-west. Elevation decreases from about 1900 m above sea level to 1200 m above sea level when approaching from the south-east direction (Figure 6-3).

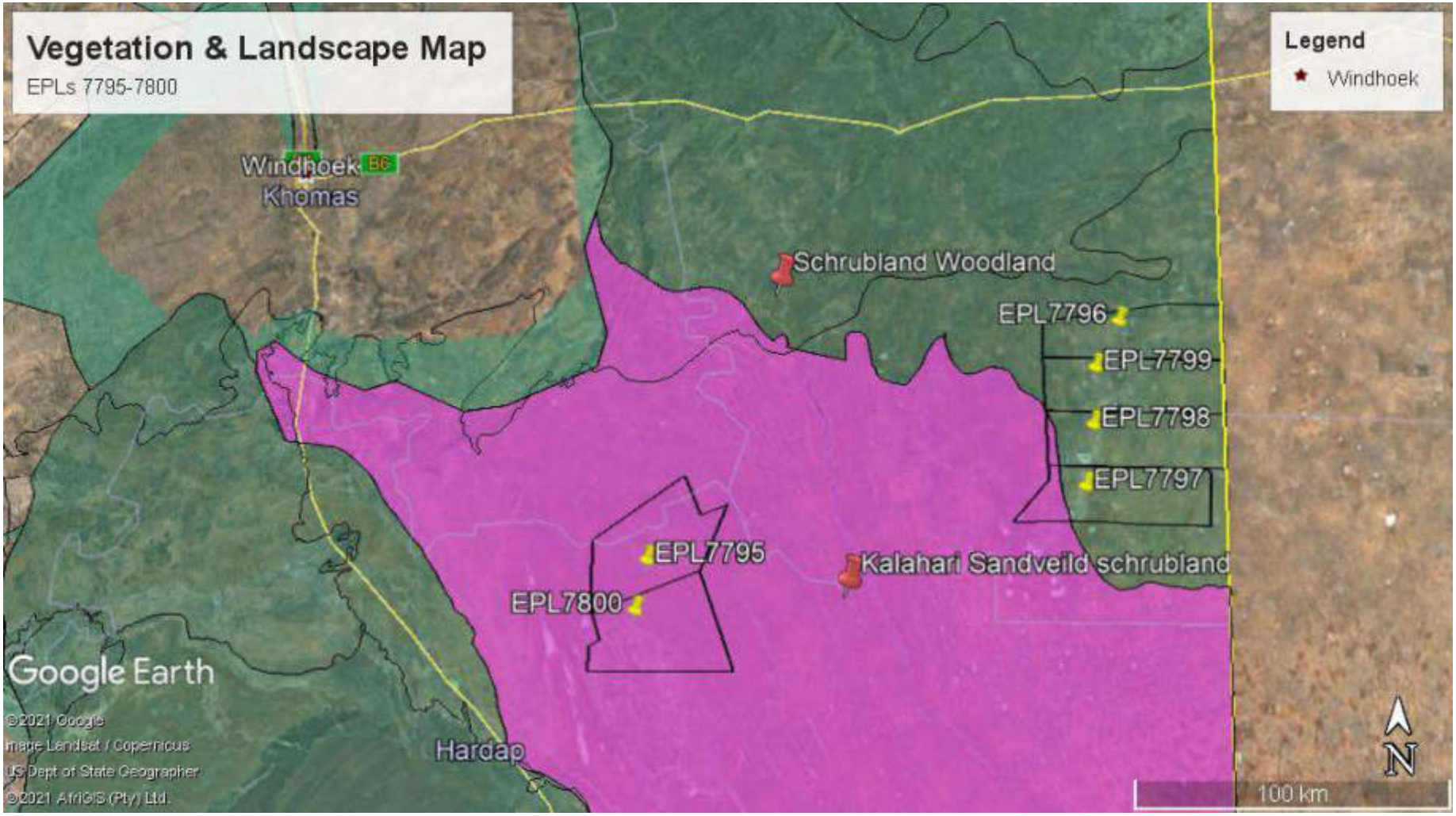


Figure 6-1: Landscape and Vegetation cover Map intercepting EPL 7795 to 7800

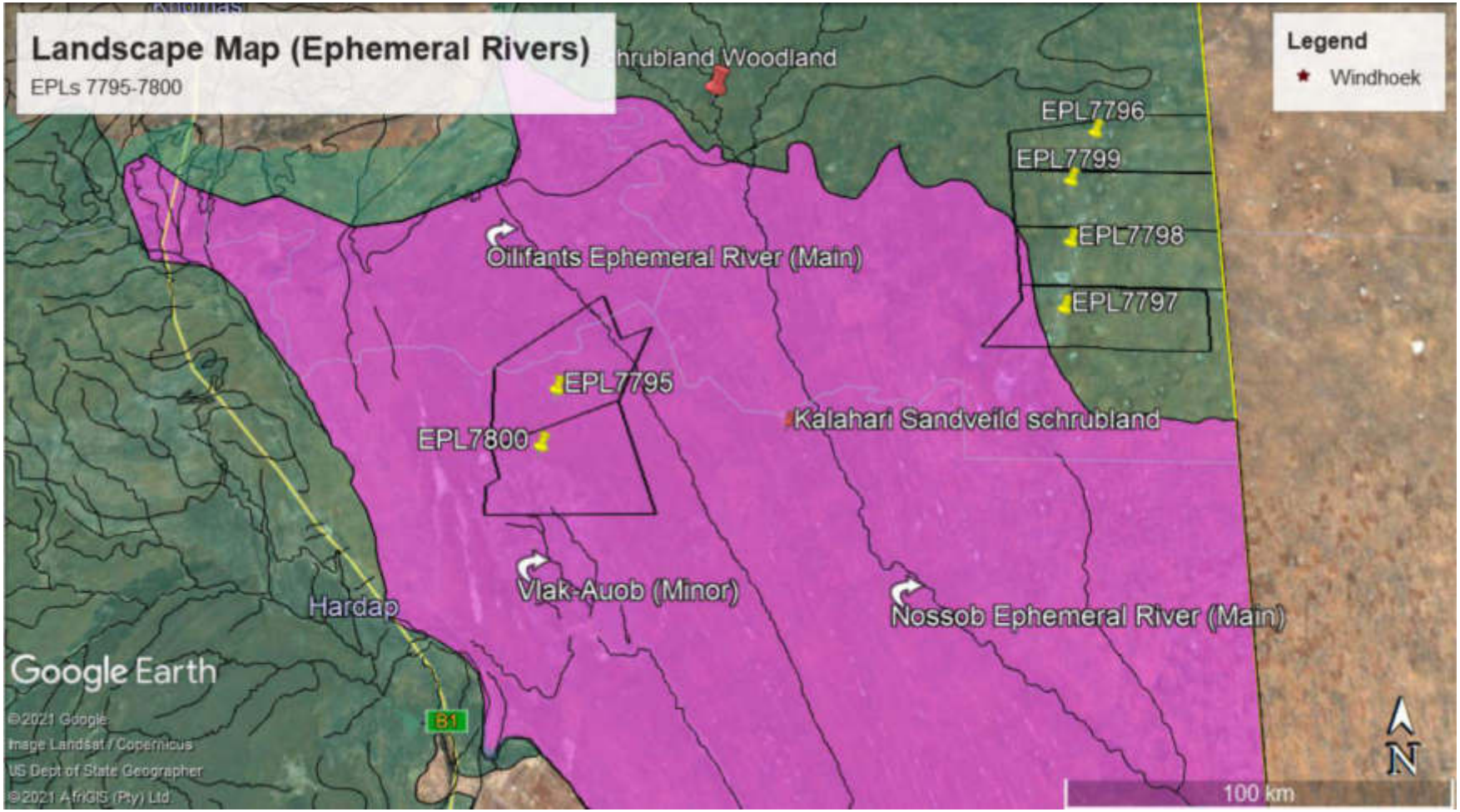


Figure 6-2: Ephemeral rivers intercepting EPL 7795 to 7800

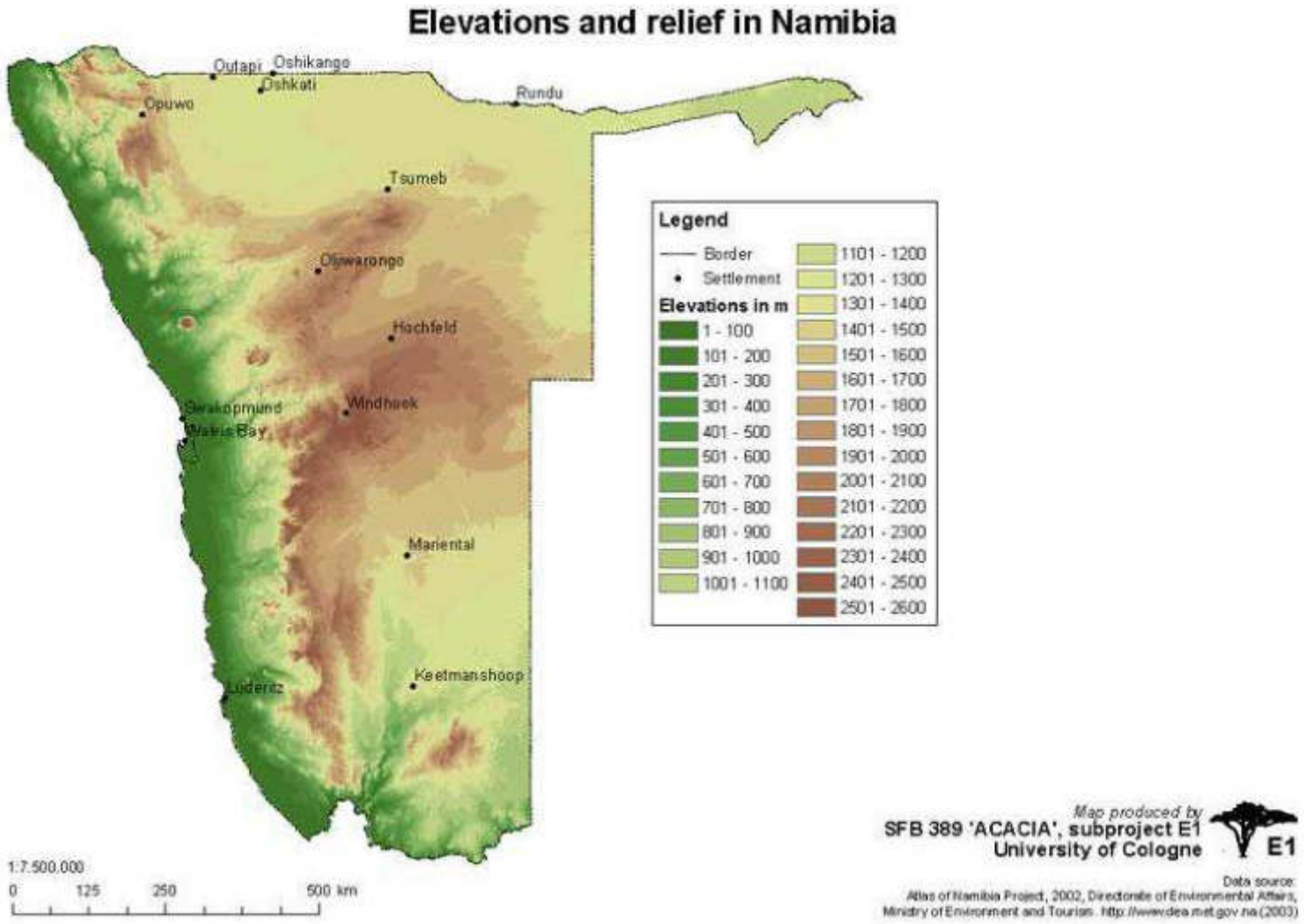


Figure 6-3: Namibia's Elevation's Map intercept to (EPL 7795-7800) (Atlas 2002)

6.2 LAND USE

The Namibian land use system consist of communal and commercial land, urban land, conservation and protected areas and others.

Land in the general central southern Namibia area shows a mixed land use tenure comprised of commercial farming and communal areas. A largest portion is free-hold commercially owned farms mainly used for cattle farming and limited game farming. The reminder commercial farms are occupied by previously disadvantaged communities farming mainly small stocks. Some farmers engage in production of veld plants such as Hoodia. All EPLs are not in any communal registered conservancies but can be identified to be on both commercial farming and communal land areas. Figure 6-4 and Figure 6-5 presents the farm lands located on all EPLs (7795-7800). EPLs (7796, 7797, 7798, 7799) are Namibian government/ state farms and under the management of the Ovambandero Traditional Authority.

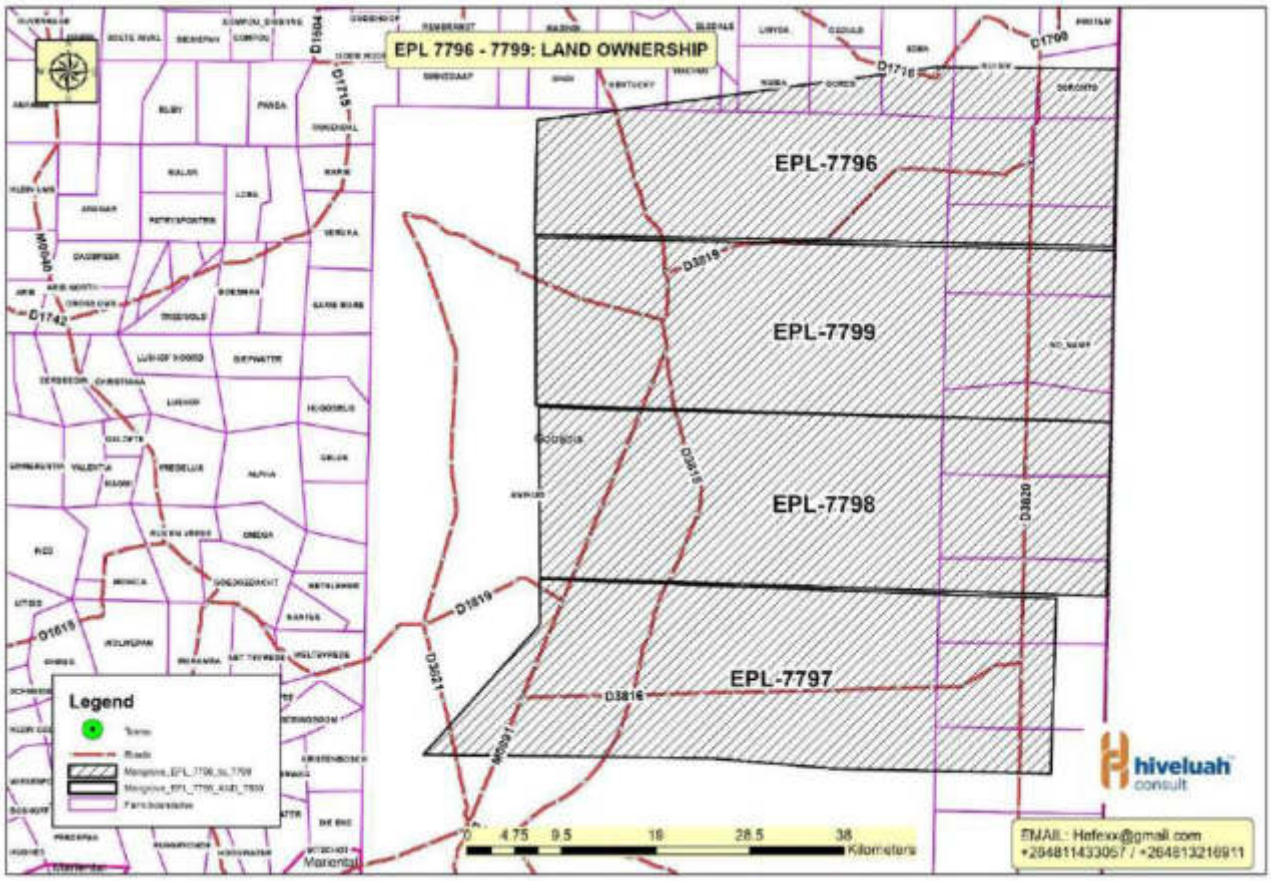


Figure 6-4: Farm land owners on EPLS 7796, 7797,7798 and 7799 in Omaheke Region (Mangrove & Hiveluah 2021)

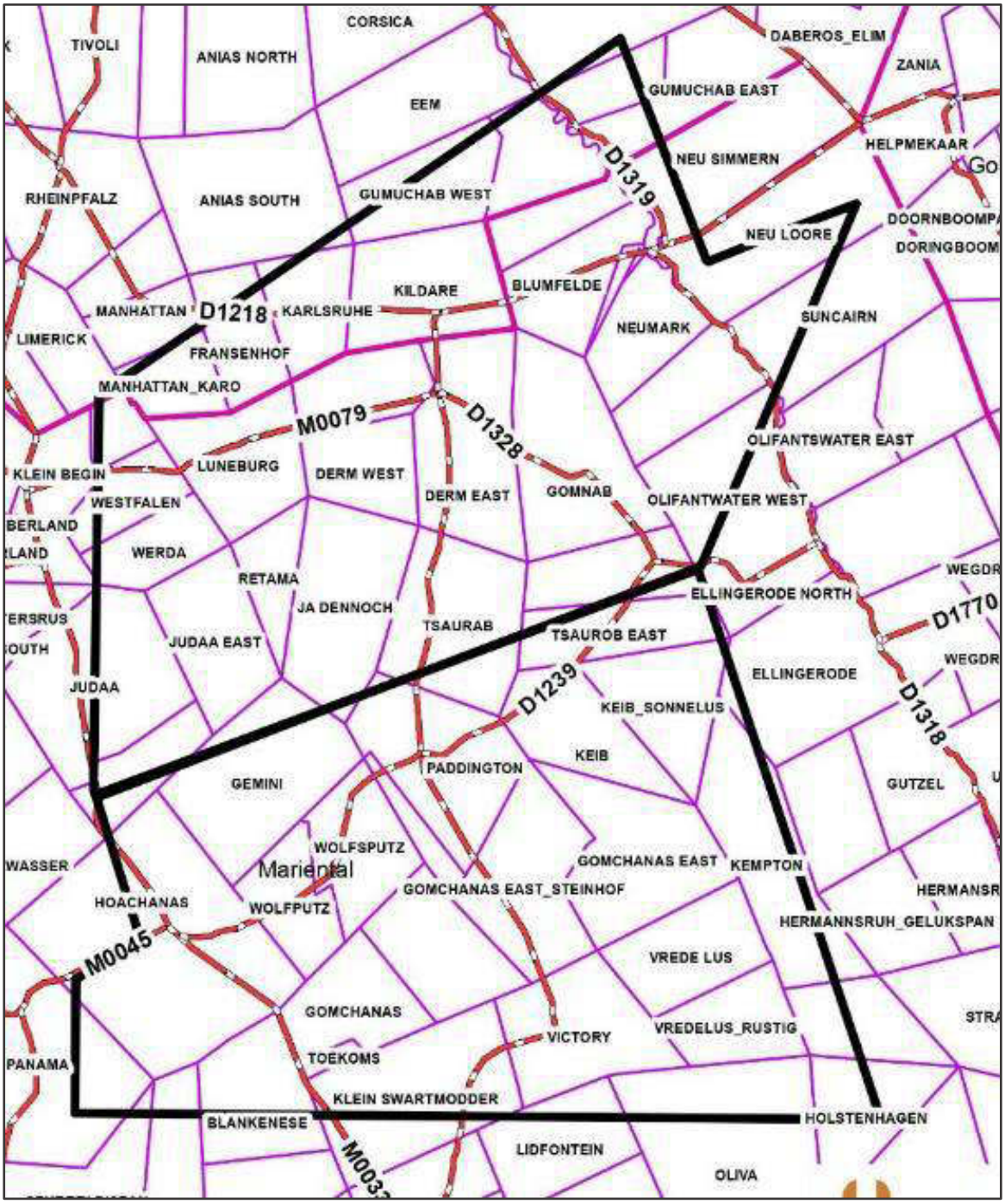


Figure 6-5: Farm land owners on EPLS 7795 and 7800 in Khomas and Hardap regions (Mangrove & Hiveluah 2021)

6.3 CLIMATE

Information presented in this section relates all EPLs (7795- 7800)

6.3.1 Temperature

Temperature shows variations with average high temperatures at 31°C in typical summer months and lowest average temperatures at (7°C) during winter months (Table 6-1).

6.3.2 Rainfall and evaporation

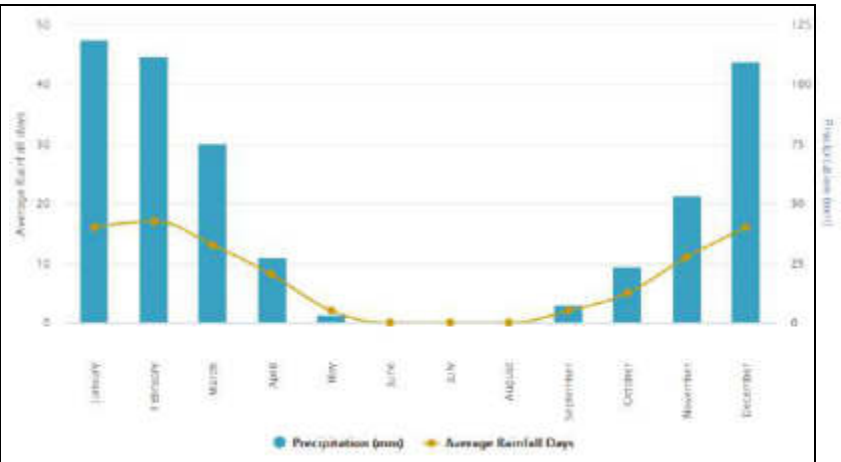
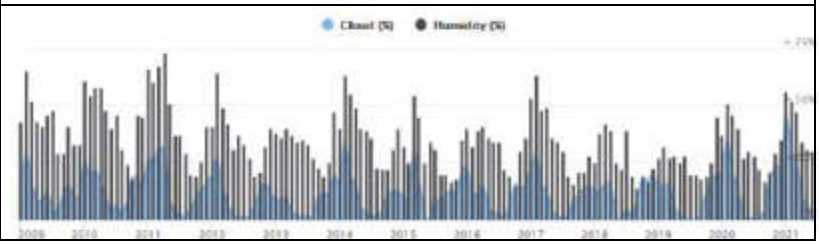
Mean annual rainfall highly fluctuates; whereby during some years, rainfall could be as higher as 500 mm and in some, years as low as 50 mm. The central south is relatively dry with mean annual rain of 200-300 mm, while the wetter Nossob basin receives 300-500 mm of mean annual rain. The general area could be classified as arid to hyper-arid (Mendelsohn et al. 2002). As a result of low rainfall, vegetation is generally sparse, with few trees and a thin vegetation cover. Intra-annually, the highest rainfall is recorded between December and January and the lowest between June and August. The mean annual potential evaporation varies between 3,000 mm and 3,500 mm (Mendelson, 2007).

6.3.3 Wind

Wind is generally in the north-east direction. There are strong winds from December to April and calm winds from June to October.

Table 6-1: Climatic information relating to EPLs 7795- 7800

Climatic Variable	Graph
Temperature (°C)	

Monthly Average rainfall (in mm)	
Cloud and humidity (%)	

6.4 SOCIO ECONOMIC

6.4.1 Aminuis and Hoachanas Settlement

Information collated in this section is referenced from (MET 2012) and is relevant to the above mentioned EPLs.

The aminus settlement forms a part of EPLs 7796- 7799. The settlement is about 188 km south of Gobabis. Livestock farming is very important and forms the backbone of the settlement's economy. Most people are working directly or indirectly with livestock. Tribes found in Aminuis are the Hereros, Tswana, San, and Kalahari community. Within the area, businesses found in Aminuis are small cooker shops, two service stations, and a small clinic. The Councilors office is also situated in Aminuis settlement, representing the whole Aminuis constituency. The small town is quite spread out; this is mostly due to people settling around water points (either natural fountains, or man-made boreholes) (MEFT 2012)

Mostly due to limited land, grazing capacity and population increases, the majority of the rural population are no longer able to sustain themselves purely from agricultural production and must augment their incomes from a variety of different livelihoods. Pensions and remittances provide important supplements to cash wages for subsistence farming livelihoods. Opportunities for employment outside of subsistence agriculture are however extremely limited in this area, and the formal employment sector is small. As a result, unemployment is high. Poorer households have to diversify their livelihood base or face the risks of increased poverty and vulnerability (MEFT 2012).

Aminuis is known for its large salt pan situated close to the settlement area, and residents use the large pan to harvest their salt for their livestock. This is done in the dry months of September/ October. Some Aminuis community members tend to make an income out of this since some harvest the salt to sell to neighboring towns like Gobabis. In the past, Aminuis area was known for its large number of wildlife, consisting mostly of springbok and kudus which have now become virtually extinct in the area due to unsustainable hunting.

Increasing pressure by a growing population on the communal rangelands around Aminuis and the perceived threat of land and resource scarcity is leading to enclosure through illegal and uncontrolled private fencing by individuals and communities. Until now, people have been able to erect fences in communal areas with little fear of prosecution, and because of weaknesses in enforcement of laws, community leaders and other local institutions and organisations have been powerless to respond. Farmers are increasingly losing grazing land to such illegal privatisation. This has an impact on land availability and as a result on the sources of income (i.e. livestock farming) and thus livelihoods of farmers. The representative of the communal farmers in the entire Aminuis District is the Aminuis Farmers Association, of which there are two cooperatives (Aminuis Cooperative and PAMWE Cooperative); they assist in livestock marketing, registration and information dissemination. These farmers associations consist of local farmers, with a committee representing them. The associations have a purely supporting/facilitating role and do not have legal authority. The land tenure issue is of great concern, and the lack of rights of farmers in terms of land (and, as a result, insurance) is the core reason for illegal fencing, insecurities, lack of coordination in terms of farming management, among others. Aminuis is classified as an open access communal area and a major source of livelihood is through cattle farming (Mendelosohn et al. 2002). The area falls within the Omaheke Region. Omaheke is known for some of the best cattle breeders (although, to a large extent, these are associated with commercial farms) and the region is often referred to as the “cattle country”. Until today most of the community rely on their livestock. Livestock plays an important socio-economic role, it is a not only a source of cash income, but also a symbol of wealth, social status and pleasure in ownership.

Hoachanas settlement is the main settlement relevant to EPL 7800. Similar to Aminuis and socio-economic activities, Hoachonas is the main settlement to Nama people and inhabitant of about 3000 people (Wikipedia 2020).

6.5 BIODIVERSITY

Generally, biodiversity is low in the central south and Nossob river basin. Among the two areas, the Nossob river basin has a relatively higher biodiversity. The main environmental threats to flora diversity is water shortage and scarcity, bush encroachment, land degradation due to continuous overgrazing and invasive plant species. Fences are a serious problem because they obstruct the migratory routes and pose a significant threat to biodiversity in unprotected areas.

6.5.1 Ecosystem diversity

Apart from climate another key factor that influences flora and fauna diversity is the variation in habitats or ecosystem diversity. More diverse ecosystems tend to support a higher diversity of flora and fauna. Furthermore, more diverse ecosystems tend to be less vulnerable to climate change and anthropogenic activities. In the proposed project areas, climate is contrasting and shows huge variations; and subsequently, ecosystem diversity shows several distinct biomes viz. Kalahari Desert and tree and shrub savannah.

The central south (EPLs 7795 and 7800) is located in the tree and shrub savannah biome; while the Nossob river basin (EPLs 7796-7799) falls within the central Kalahari Desert biome and is characterized by a mixture of trees and shrub savannas.

Aminuis Settlement (EPL 7795-7800)

Aminuis falls within the central Kalahari biome. This biome consists of mixed trees and shrub savannas with lower acacias that are encroaching e.g. Acacia reficiens, A. mellifera, erioloba, and, to a lesser extent, Rhigozome brevispinosum. Most of the ground area is bare soil and some parts of the area are covered by Schmidtia kalahariensis as the dominating grass species, followed by Indigofera teixeirae. Harvesting natural resources in the form of woody vegetation for fuel is the primary resource harvested by all communities in the Nossob basin and in most instances, people have to travel for several kilometers to collect it. Trees are cut down and sold as fencing poles or construction material and it is done regularly to sustain people's livelihoods in these areas. Upon consultations with communities during the baseline study, it seems that there is no system in place to prevent or control the cutting of trees in the area

6.5.2 Flora

For more on flora taxa that are likely to occur in the area, refer to Appendix D.

In the central south (EPLs 7795 and 7800), the dominant vegetation is the encroaching shrub; followed by thorn trees and limited grass cover. The Nossob river basin (EPLs 7796-7799) falls within the central Kalahari Desert biome and is characterized by a mixture of trees and shrub savannas with lower acacias that are encroaching (e.g. Xeric Kalahari, Acacia reficiens, A. mellifera, erioloba, and Rhigozome brevispinosum). Prosopis sp. is a highly invasive plant species which is widespread in dry river beds especially the Nossob river; outcropping native trees. The pods are a nutritious fodder, while the wood burn well, and the sawdust is good for smoking fish meat.

Grasses in the Nossob river basin is thin; the dominant grass species is Schmidtia kalahariensis, followed by Indigofera teixeirae. Grass is the main environmental resource as feed for livestock and other grazers. The other environmental resource are trees being utilized by browsers and as a source of fuel and building material.

6.5.3 Fauna

For more on fauna species that are likely to occur in the area, refer to Appendix D.

Animal endemism is low; there are no strictly endemic birds, only one near threatened amphibian, one strictly endemic reptile (*Typhlosaurus gariepensis*) while other are near-endemic reptiles, and a single near-endemic small mammal, Brants's whistling rat (*Parotomys brantsii*).

Furthermore, there is also a diversity of large mammals such as gemsbok (*Oryx gazella*), sociable weaver (*Philetairus socius*), and Kalahari lion (*Panthera leo*). Although not a separate species, the Kalahari lion exhibits behavioral adaptations to surviving in a harsh environment. Other large mammals include large predators such as cheetah (*Acinonyx jubatus*), leopard (*Panthera pardus*), spotted (*Crocuta crocuta*) and brown (*Hyaena brunnea*) hyena, and wild dog (*Lycaon pictus*).

Small mammals include aardwolf (*Proteles cristata*), caracal (*Felis caracal*), black-backed jackal (Canis mesomelas), honey badger (Mellivora capensis), African wild cat (*Felis lybica*), black-footed cat (*Felis nigripes*), striped polecat (*Ictonyx striatus*), common genet (*Genetta genetta*), bat-eared and Cape fox (*Otocyon megalotis*, *Vulpes chama*), as well as meerkat (*Suricata suricatta*) and three species of mongoose, banded (*Mungos mungo*), slender (*Herpestes sanguinea*), and yellow (*Cynictis penicillata*).

Insect diversity is provided in Appendix D.

Generally, insects are important as indicator species mainly due to their short carbon turnover as well as raid response to habitat modifications. Unlike other taxa, insects are biogeographically limited and tend to be highly endemic.

6.6 GEOLOGY

The primary mineralisation target of exploration on these licenses is Nuclear fuel in the Permian aged rocks, that host clay deposits in the Karoo Sequence. The units are derived from weathered Dwyka Formation shales. The key lithologies of interest are tillite, boulder-shale, shale –sandstone and limestone within Permo-Carboniferous units in the area. The hypothesis to be tested is by targeting the uranium roll-front deposit which occurs in two valence states i.e., U4+ and U6+. Weathering of rocks converts uranium into the +6 state, in which state it forms the uranyl ion (UO2)2+. Uranyl compounds tend to be soluble in groundwater, whereas U4+ compounds are not. Provided the groundwater remains oxidizing, uranyl ions are stable, and uranium can be transported by groundwater; however, when uranyl ions encounter a reducing agent such as organic matter, U4+ uranium is precipitated as uraninite and coffinite.

Practically the exploration model is based around identifying organic matter specifically coal deposits which would be the reducing agent and hence the indicator or 'source / host rock' in this instance.

Base and rare metals are also targeted based on the area being part of the Kalahari Copper Belt, which stretches discontinuously for ~800 km along the south-eastern margins of the Damaran/Katangan rift basin from around Klein Aub in central Namibia, extending into northern Botswana to the Zambian Copper Belt. The geology hence supports that the targeted EPL area as being part of the sediment hosted copper-silver deposits. Additionally, precious metal potential exists for gold and possibly platinum associated with the mylonite regional linear structures which are associated with late-stage hydrothermal activities. The geology hence exhibits potential for a polymetallic deposit. The local granites and other plutonic rocks warrant investigation for dimension stone and slate associated with the sedimentary rocks.

6.7 WATER

6.7.1 Regional hydrogeology (All EPLs)

The regional hydrology is linked to aridity to hyper-aridity climates being characterized by higher evaporation, poor surface and ground water sources. Presence of surface water in salt pans is only during the rainy season or after the rainy season; otherwise surface water is immediately lost due to higher

evaporation. Nossob river is an ephemeral river in southern Kalahari with a distance of 740 km (Figure 6-2). Its drainage, aquifers and associated pans forms the Nossob drainage system. There are several anthropogenic activities along the river including damming which threaten biodiversity in the Nossob drainage area.

There are several springs located near the Kalkrand basalt. Groundwater also occurs in the Kalahari layers across the Nossob river basin. Water levels elsewhere in boreholes in the artesian aquifers are subartesian. The Nossob Sandstone Aquifer lies in the Ecca Group of the lower Karoo Sequence and is separated by shale layers of the Mukorob Member. The Auob and Nossob Aquifers are confined and free flowing in the Auob Valley from Stampriet and further downstream, as well as in the Nossob Valley around Leonardville.

Figure 6-6 presents hydro pans intercepted on all the EPLs. The area gets an average rainfall that ranges from 250-300 mm. Soils in Omaheke are dominated by sandy to loamy sandy soils, these soils have a clay content of about 6% with a very low water holding capacity of approximately 60mm/m (Kowalski, 1996). The soils of southern Omaheke (Aminius/Corridor, Ben Hur/Tsjaka) are sandy Arenosoils with calcareous (lime) soils. A large water body underlies much of this area and saltpans being a feature in the area. These pans are predominantly dry (MET 2021). A few saltpans can also be identified on EPL 7795.

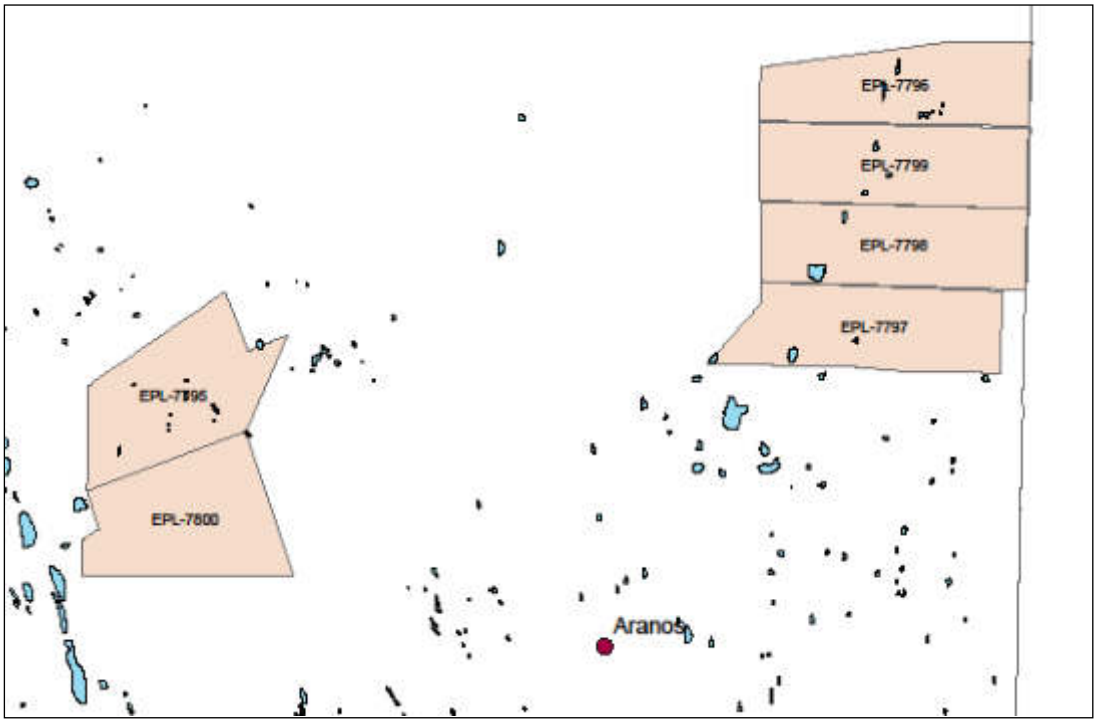


Figure 6-6: Hydropans (Salt pans) on EPLs 7795-7800 (Mangrove & Hiveluah 2021)

6.7.2 Air quality and noise

Dust and noise will be generated by vehicles using the local gravel roads. Due to low traffic volume, environmental impacts will be insignificant. The only recptors on all EPLs is the immediate farm owners on targeted area needed for exploration activities. Noise generated from the proposed exploration activities are associated with the vehicle movement, generators and the drill rig operation. These noise backgrounds

Are similar to daily vehicle movement and farming activities in the area. At this stage, Mangrove will still need to develop targeted sites. Management and mitigation measures relating to Noise and Air quality aspect will be implemented accordingly with the EMP.

6.8 ARCHAEOLOGY

The EPLs are on areas not regarded as archaeological/ heritage sites by the National Heritage Council of Namibia. Shall targeted sites be developed on the EPLs, Mangrove will continue to engage with the landowner as part of preliminary planning phase for exploration activities.

The engagement is necessary to ensure the targeted areas are not on any significant sites i.e. graveyards, historic monuments within the farm owners land.

The following is notable monuments identified but not within the EPLs or close proximity (Figure 6-7):

- Monument at Kub, Kalkrand: The Monument commemorates the battle at Kub between the Nama and the Germans on 22 November 1904. It is situated on the Farm Voigtskub, a few hundred metres east of the road between Kalkrand and Maltahöhe along the Fish River. In relation to Mangrove EPLs, it is about 45 KM West of EPL 7800 (Figure 6-7):.
- Ozombu Zovindimba Monument: is about ±75 km north of EPL 7796. The monument presents the colonial German and Herero conflict that resulted in deaths of a large population of the herero (Figure 6-7);
- German Lazaret: is a structure (national monument) located in Gobabis about 80 km North West of EPL7796 (Figure 6-7). It was the only lazaret Built in 1896 on the highest hillock to the south-east of the former Gobabis fort. Used as a hospital until 1904. After the end of WWI it was used as a dwelling for civil servants and civilians. After independence, it was considered to have a museum there, but instead occupied with government offices. At the turn of the 20th century the only lazaret in a radius of 240 km. Hospital, dwelling (NHC 2021)

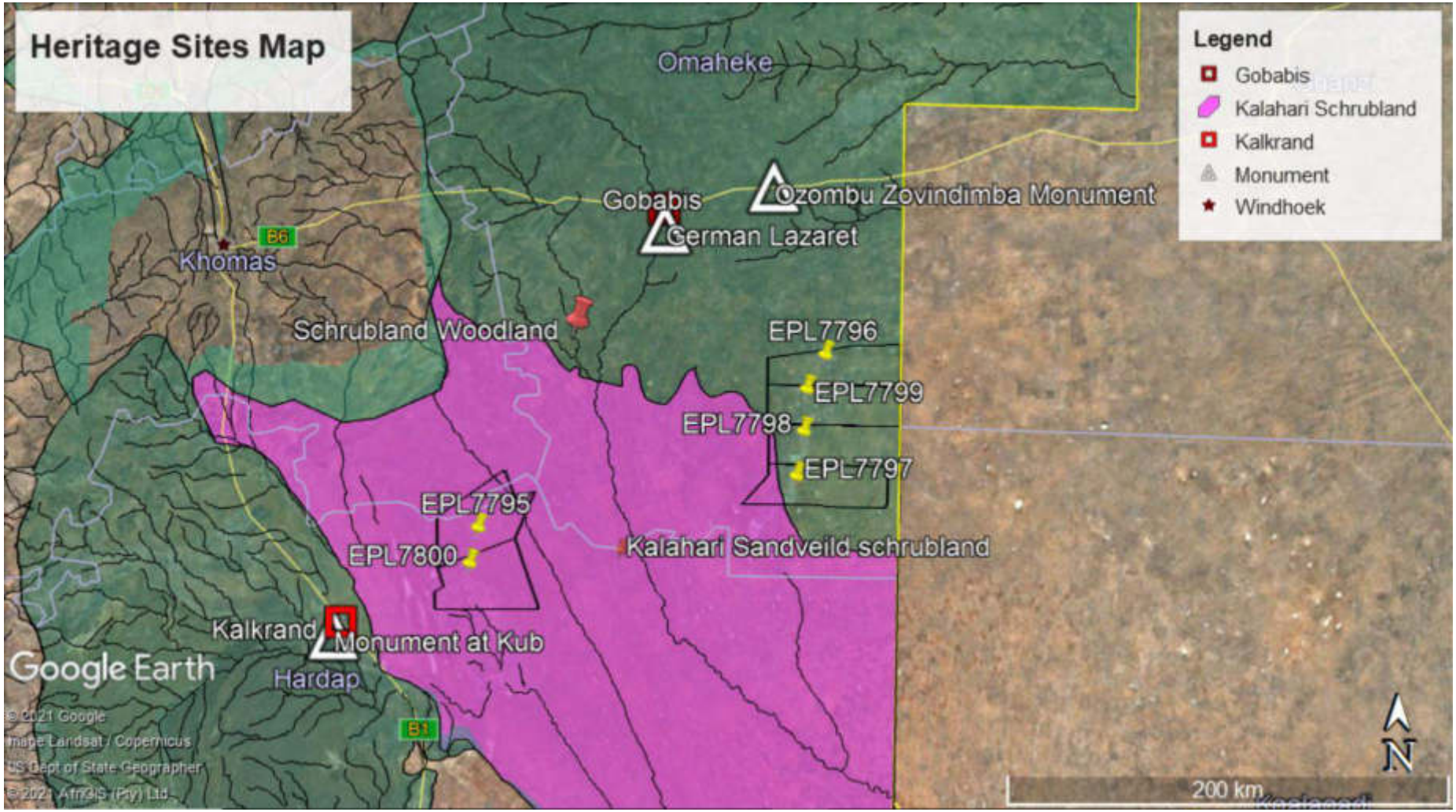


Figure 6-7: Map of Heritage Site

7 ALTERNATIVES

7.1 ACCESS ROUTE ALTERNATIVES

Access routes to the designated exploration sites should be determined before any exploration activity. It is relevant to use the already existing access routes on the farms to the EPLs as depicted in Figure 5-1. In order to avoid additional impacts to the environment generated though the clearing of vegetation to create the access routes. It is recommended that existing tracks should be used as much as practically possible, in consultation with landowners. Information relating to additional existing access routes may be furnished during the preliminary planning discussions with the landowners.

7.2 DRILLING OPTIONS

Diamond core drilling can achieve greater depths, delivers core samples to the surface, provides an idea of the hard rock and rock conditions that can be expected below ground and is a form of wet drilling. Wet drilling is favorable as it minimises the nuisance dust impact, from both an occupational health and an environmental point of view. However, considering the difficulty associated with obtaining water in the area, this may be a more difficult form of drilling to achieve.

Percussion drilling is cheaper and faster to perform, however there is less accuracy, as rock samples are returned to the surface as powder or small cuttings and the below ground rock condition cannot be ascertained. It can, however, give an indication of the mineralisation (within specific limits/range).
The preferred method of drilling is the diamond core drilling.

7.3 NO-GO OPTION

This option entails that no further activities are undertaken on the EPLs area and upon expiration it will revert back to the Ministry of Mines and Energy. Should this happen, the economic and social growth associated with the potential resource will not reach fruition, and Namibian economy will fail to benefit from a potential mineral resource. The advantage of this option would be that no exploration activities would take place on the land and will not negatively impact on the environment and/or the local residents.

8 IDENTIFICATION AND DESCRIPTION OF POTENTIAL ENVIRONMENTAL IMPACTS

This section provides a discussion on the description of the identified potential impacts associated with the various project implementation phases including Reconnaissance (Geological mapping), Geochemical sampling, and exploration drilling (including rehabilitation) as presented in Section 4 on EPLs (7795,7796,7797, 7798, 7799 and 7800). The Scoping process allowed an opportunity for participation of Interested and Affected Parties, where concerns and issues have been documented and summarised in section 2.3.3. These have been taken into context of the assessment. The description on Aspects and Impacts also intercepts the baseline on the environment provided in Section 6. Recommendations regarding the mitigation measures that should be implemented to manage direct impacts and reduce the severity of the negative impacts and enhance the benefit of the positive impacts have been brought into context in this section and further defined in the EMP (Section 9).

8.1 IMPACT ASSESSMENT METHODOLOGY

Assessment of predicted significance of impacts for a proposed development is by its nature, inherently uncertain – environmental assessment is thus an imprecise science. To deal with such uncertainty in a comparable manner, standardised and internationally recognised methodology has been developed, and is applied in this report to assess the significance of the potential environmental impacts of the proposed exploration activities. For each impact, the SEVERITY (size or degree scale), DURATION (time scale) and EXTENT (spatial scale) are described in (Table 8-1). These criteria are used to determine the CONSEQUENCE of the impact (Table 8-2) which is a function of severity, spatial extent and duration.

Table 8-1: Ranking criteria for environmental impacts

SEVERITY/INTENSITY	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Limited loss of resources.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Noticeable loss of resources.
	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Irreplaceable loss of resources.
DURATION	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
SPATIAL SCALE	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

Table 8-2: Determining the Consequence

SEVERITY	DURATION		SPATIAL SCALE		
			Site Specific (L)	Local (M)	Regional/ National (H)
Low	Long term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short term	L	Low	Low	Medium
Medium	Long term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Low	Medium	Medium
High	Long term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Medium	Medium	High

The SIGNIFICANCE of an impact is then determined by multiplying the consequence of the impact by the probability of the impact occurring (Table 8-4) with interpretation of the impact significance outlined in Table 8-5.

Table 8-3: Determining the Significance Rating

PROBABILITY (of exposure to impacts)		CONSEQUENCE		
		L	M	H
Definite/ Continuous	H	Medium	Medium	High
Possible/ frequent	M	Medium	Medium	High
Unlikely/ seldom	L	Low	Low	Medium

Table 8-4: The interpretation of the impact significance

High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.

Once the significance of an impact has been determined, the CONFIDENCE in the assessment of the significance rating is ascertained using the rating systems outlined in table 8-6.

Table 8-5: Definition of Confidence Ratings

CONFIDENCE RATINGS*	CRITERIA
High	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Medium	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Low	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

* The level of confidence in the prediction is based on specialist knowledge of that particular field and the reliability of data used to make the prediction.

When assessing the significance of the project level impacts, cumulative effects have been considered as far as it is possible in striving for best practice. The sustainability of the project is closely linked to assessment of cumulative impacts.

Table 8-6: Environmental aspects and Potential impacts associated with the exploration activities on EPLs (7795,7796,7797, 7798, 7799 and 7800)

ACTIVITY	ASPECT	POTENTIAL ENVIRONMENTAL IMPACT	SIGNIFICANCE DISCUSSION	MITIGATION (with & without)	SEVERITY	DURATION	SPATIAL SCALE	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	REFERENCE
Phase 1: Year 1 - Reconnaissance including Geological Mapping and land owner's engagement											
Geological Field Mapping and Ground Geophysical Survey (all EPLs 7795 -7800)											
Ground surveys	Socio-economic	Inconvenience to farm residents and impacts on way of life; community unrest/ grievances.	In the case of the exploration team being allowed unsupervised access "or without access consent", there is the potential for an increased risk of criminal activities and possible disturbance of immediate farm residents or farm owner's property. There is also the potential that gates may be left open, resulting in the unwanted movement of livestock. However, it is anticipated that local- resident's support will be outsourced and therefore reducing this risk. Pre-liminary planning with the farm owners prior to any activities is vital in the success of this activity. Land access agreements between Mangrove and the relevant Farm Owners will be drafted and signed by both parties. Remediation measures will be raised in the EMP section 9.	Without	M	M	L	M	M	**M**	1
				With	L	L	L	L	L	**L**	

	Biodiversity	Potential impact on fauna and flora (General disturbance and clearing of vegetation)	Reference to Section 6.5.2 (EPLs 7795 and 7800) dominant vegetation is the encroaching shrub, thorn trees and limited grass cover. EPLs 7796-7799 is characterized by a mixture of trees and shrub savannas with lower acacias that are encroaching. • Where relevant, some clearing of vegetation may occur as vehicles may have to drive off-track to access certain areas. However, it is relatively small scale, involving a limited number of vehicles. This approach will be discussed broadly with the landowners, traditional authorities etc. • Access routes for staff on foot and cut lines where relevant for the ground surveys would also have to be developed in some instances due to the dense nature of the vegetation in the area. The footprint of these is small. • As stated above all EPLs are dominated by the bush encroachers. Thorn-bush shrubland is known to have significant impacts on farming areas within this biome as a bush encroacher. Remediation measures will be raised in the EMP section 9.	Without	M	M	L	M	M	**M**	2
				With	L	L	L	L	L	**L**	
	Air quality	Increase in dust levels (nuisance & health impacts)	The general dust levels in the proposed EPLs are subject to livestock movement, vehicles and prevailing winds in the area. Dust will also be generated in the establishment of access routes if necessary and drilling operations however this is expected to be on a small scale. Dust suppression	Without	L	L	M	L	M	**M**	3
				With	L	L	L	L	L	**L**	

			measures will have to be applied shall dust levels persistently increase. Where vehicles travel close to residences, the dust from the roads might be a nuisance to the residents, speed limits will be applied in during all exploration related activities. Exploration activities will not be undertaken in close proximity of farm owner's residents. Air pollution through vehicle emissions (i.e. exhaust fumes) is expected to be negligible due to the small scale of the project. Remediation measures will be raised in the EMP section 9.									
	Heritage	Activities could result in possible damage to/destruction of heritage resources.	With reference to section 6.8, Archaeological resources are not present on the EPLs. Figure 6-7 presents the identified heritage sites in relation to EPLs. Working on the EPLs will require constant engagement with the owners of the land to ensure critical areas i.e. grave sites are not encroached on. A chance find procedure has also included in the EMP. Refer to section 9.	Without	L	H	L	M	M	**M**	4
				With	L	H	L	M	L	**L**	
Phase 2 Year 2; Geochemical sampling campaign and Sample analysis												
Geochemical Sampling and Sample analysis (all EPLs 7795 -7800)												
Soil and rock sampling	Socio-economic	Inconvenience to residents	Impact reference: 1	Without	M	L	M	M	M	**M**	5
				With	M	L	M	L	L	**L**	
	Biodiversity	Potential impact on fauna and flora (General disturbance and clearing of vegetation)	Impact reference: 2	Without	M	M	L	M	M	**M**	6
				With	L	L	L	L	L	**L**	

			Measures relating to rehabilitation of small potholes from which soils and or rocks are sampled will be implemented accordingly.								
	Heritage	Activities could result in possible damage to/destruction of heritage resources.	Impact reference: 4	Without	L	H	L	M	M	**M**	**4**
				With	L	H	L	M	L	**L**	
Phase 3: Year 3 Exploration drilling programme including rehabilitation											
Exploration Drilling Operation (all EPLs 7795 -7800)											
<u>Drill site establishment:</u> Access the drill site using a new access track (where relevant) Set-up drilling machine with drip trays and groundsheets Establish temporary safety fencing around the drill site Set-up mobile ablution facilities	Noise	Noise generated by the establishment of access tracks and site clearing/ establishment activities.	Should the activities take place in close proximity to a residence, the noise from these activities might be a nuisance impact. Mangrove should communicate with the farm owner and detail the schedule for exploration activities. Mangrove will ensure Terms of reference is drafted and discussed with the farmer before any activities are undertaken. Where hunting excursions is undertaken it is anticipated that, exploration activities will not overlap with hunting activities however; Mangrove will discuss and request information from the farm owners and agree on the best suitable schedule for exploration activities within these areas. The proposed exploration activities (i.e. Soil sampling) will need to be identified in this specific hunting area. The prospecting team (Mangrove) should inform the farm owners of the planned activities two (2) days before undertaking such	Without	M	L	M	M	M	**M**	7
				With	L	L	M	L	M	**L**	

Set-up fuel and lubricants storage area Waste management			activities. The magnitude of the exploration activities is small and therefore noise impacts will be reduced to Low shall the mitigation measures be implemented.								
	Biodiversity	Potential impact on fauna and flora. (General disturbance and clearing of vegetation) Drilling contractors and employees (Mangrove) that are not well managed can impact on the biodiversity through illegal collection of firewood, poaching, road kills of livestock. Loss of economic function of disturbed area during exploration activities and potential loss of land capability.	• Refer to impact reference 1 .	Without	M	M	L	M	M	**M**	8
				With	L	L	L	L	L	**L**	
		Site clearance may allow for the establishment of invasive plants in the area.	The area is to be rehabilitated upon closure. Certain areas are currently characterized by severe bush encroachment However, management measures relating to the control of bush encroachment have been included in the EMP.	Without	L	M	M	M	M	**M**	9
				With	L	L	L	L	L	**L**	
	Land use	Loss off land capability due site clearance.	The soils are shallow with a low fertility and therefore low agricultural potential. However, where possible, the land is used for livestock grazing. The rehabilitation of the site will allow for the continued use for grazing.	Without	L	M	L	L	M	**M**	1
				With	L	L	L	L	L	**L**	0

	Heritage	Exploration activities could result in possible damage to/destruction of heritage resources.	Impact reference: 4									4
	Socio-economic and community safety	The proposed activity may have the potential to result in an increase in crime. Given that access to drill sites on the farms, may be gained through the use of farm residents access roads, this could pose a threat to farm residents safety	Given the location of the exploration area there is a need for a close working relationship with the land owners Refer to impact Reference 1	Without	M	L	M	M	M	**M**	1
				With	M	L	M	L	L	**L**	
	Waste Management	The dumping of general waste within the exploration area and drilling sites could prove hazardous to wildlife and livestock. This could also lead to general environmental degradation.	Waste generation is likely to be limited on site and will primarily be domestic waste. This material will be stored in designated Bins and removed from site daily or when the designated bins are filled up. The waste will be disposed of properly at the local municipal landfill site. Through the effective implementation of the management and mitigation measures, as described in the EMP (Section 9) the potential impacts relating to waste management can be avoided/ mitigated.	Without	M	L	M	M	M	**M**	11
				With	L	L	L	L	L	**L**	
Drilling	Spillages of hydrocarbons, lubricants, or possible spills from mobile ablution facilities	Soil pollution	Soil loss and contamination could have an impact on grazing animals. However, the area to be disturbed is very localise and on a small-scale, and impacts can be easily mitigated.	Without	L	L	L	L	L	**L**	12
				With	L	L	L	L	L	**L**	
		Surface water including salt pans contamination	Potential surface water contamination of salt pans from drilling equipment and hydrocarbon spills is possible shall drilling activities be undertaken on them	Without	L	L	L	L	L	**L**	13
				With	L	L	L	L	L	**L**	

			Due to the footprint of the operation and the proposed mitigation measures, the impact is less likely.									
		Groundwater could become polluted due to pollutants entering aquifers via surface water infiltration.	The magnitude of the project and small area to be affected, per hole this impact is likely to be insignificant. If mitigated.	Without	L	M	L	L	M	**L**	14
				With	L	L	L	L	L	**L**	
	Dust generation through using the access track. Air pollution from exhaust fumes. Dust generation through drilling activities	Air quality deterioration. Increase in dust levels (nuisance & health impacts)	Impact reference: 3								3
	Noise generation	Noise generated by the drill could disturb nearby residences (nuisance).	Impact reference 7								7
	Land use	Potential loss of land use and capability (very limited area) due to a combination of the above-mentioned impacts. Potential loss of wildlife.	Impact reference: 11								11

	Social – provision of Mobile toilet facilities	Health & safety issues	If mobile toilet facilities are not provided for the exploration team, they will relieve themselves in the environment which could lead to potential health and safety issues to 3rd parties. Mobile toilets should be serviced regularly by the provider and kept clean at all times.	Without	L	L	M	L	M	**M**	15
				With	L	L	L	L	L	**L**	
Groundwater abstraction (if required)	Groundwater	Reduction in availability of groundwater	The reduction in the availability of groundwater could impact land use in the area. It is unlikely that the quantities required will impact groundwater levels. However, measures should be taken in the correct usage of water. Ground water requirements during the course of diamond drilling are estimated at 3 cubic meters per day per diamond ring.	Without	M	M	M	M	M	**M**	16
				With	L	L	L	L	L	**L**	
Closure and rehabilitation of drill site													
Remove all waste and equipment from site. Rip compacted areas (including access roads and paths).	Biodiversity	Return site to natural state. No overall impacts.	The impacted sites will be rehabilitated in accordance with the EMP requirements.	Without	N/A						17
				With	N/A						

9 ENVIRONMENTAL MANAGEMENT PLAN FOR EXPLORATION ACTIVITIES ON EPL (7795-7800)

9.1 AIMS

The aim of the Environmental Management Plan (EMP) is to detail the actions required to effectively implement mitigation and management measures. These actions are required to minimise negative impacts and enhance positive impacts associated with the proposed Exploration activities on EPLs 7795 to 7800 (7795,7796,7797, 7798, 7799 and 7800).

The EMP (Environmental Management Plan) is commitment by the proponent to incorporate environmental protection in daily operations. The EMP gives the commitments, which form the environmental contract between Mangrove (PTY) Ltd and the Government of the Republic of Namibia; represented by the Ministry of Environment, Forestry and Tourism (MEFT).

It is important to note that an EMP is a living document in that it will be updated and amended as new information (e.g. environmental data), policies, authority guidelines and technologies develop. The conceptual management measures proposed to mitigate the potential impacts are detailed in the action plans below.

9.2 EMP OBJECTIVES

The overall environmental objectives are identified to ensure Mangrove implements this EMP across the board of all exploration activities on all the EPLs (7795-7800);

- To ensure continues engagement with the landowners prior to and during exploration activities to enhance the proponent's relationship with landowners and avoid potential community grievances':
- Ensure protection of fauna and flora and where necessary removal of vegetation is undertaken with the consent of the landowners and yet avoiding protected and or endemic flora and fauna
- Manage the aspect of air quality by implementing measures that would avoid elevated dust emissions
- Implement a chance find procedure in an event of a discovery of an archaeological artefact ;
- Manage the aspect of noise impact on all EPLs where target sites are in close proximity with the receptors.
- Implement rehabilitation measures required to mitigate potential loss of land capability

- To ensure appropriate waste management measures are implemented
- To avoid and mitigate any potential soil pollution;
- To implement health and safety measures across all exploration activities
- Ensure appropriate closure and rehabilitation of all drill sites.

9.3 LEGAL REQUIREMENTS

Before commencement of the proposed exploration activities, the following environmental certifications and documentations shall be required.

Table 9-1: Permits and authorization

Certification and documentation	Institution/competent authority
Environmental Clearance Certificate	Ministry of Environmental, Forestry and Tourism
Domestic and industrial wastewater and effluent discharge permits	Ministry of Agriculture, Water and Land Reform
Ground survey method statement	Environmental Management Committee
Method statement for Soil and Rock Surveys	Environmental Management Committee
Rehabilitation and exit operation plan	Environmental Management Committee
Baseline Environmental Monitoring plan	Environmental Management Committee
SOPs (Standard operation procedures)	Environmental Management Committee

9.4 ENVIRONMENTAL MANAGEMENT COMMITTEE

Within the structure of the proponent, must establish as an Environmental Management Committee (EMC). There is no need for the proponent to recruit new employees as this will constitute persons who are employed by the proponent. For specialized environmental services, the proponent may hire an IEC (independent environmental consultant) on contract basis.

Below are proposed committee members as well as required competency and responsibilities.

Table 9-2: Composition of Environmental Management Committee

Personnel	Competence	Responsibilities
Environmental management representative	Should be in employment of the proponent. Should be a senior staff member with a management position in the company. Preferably a Geologist/Head of Exploration.	• Represent management on environmental safety and occupational issues related to ground survey, rock and soil sampling. • Provide support and avail resources needed to endorse and implement the EMP.
Environmental safety and occupational representative (ESOR)	Should be in employment of the proponent. A minimum of grade 12, sufficient knowledge of exploration activities and ethics at work place. Preferably a Site Supervisor.	• Represent employees' environmental safety and occupational concerns related to underwater hull cleaning operations. • Ensure other employees comply to conditions as required in the environmental compliance certificates or permits. • The ESOR may call off the exploration activities if: -Illegal activities are suspected. -Excessive dust arises from activities related to this project other than natural or other events. -Where untoward situation arises that may constitute a hazard to human life or environment and the equipment or other assets.
Independent Environmental Consultant (IEC)	Master's degree or BSc. in the field of environmental or natural resources management, marine biology or water science. Knowledge of environmental impact assessment, EMP implementation and baseline environmental monitoring is compulsory. Field survey co-ordination and laboratory analytical skills will an added advantage.	• The overall responsibility of the IEC is to draft the Proponent's ensure environmental compliance and certification with GRN policies and legislation. • IEC will advise the EMC in issues with regard to EMP implementation and environmental rehabilitation.

9.5 TRANSLATION OF EMP INTO COMPANY POLICY

The proponent is required to formulate and endorse an environmental policy. This will be a written statement committing the proponent to adhere to the EMP and it will describe how the proponent shall prevent, reduce as well as rehabilitate the environment.

9.6 MITIGATION ACTIONS

All the mitigatory action raised are interlinked to environmental Aspects identified during the EIA process

Table-9-3 to 9-8 provide a summary of identified issues and corresponding management plans (section 6 of this EMP).

Mitigation actions that are required to reduce or minimize negative impacts are described in table.

9.7 RISK PREPAREDNESS AND RESPONSE PLAN

Risk is an event that may or may not happen; whereas an impact is what will happen if a risk occurs. Risks poses a significant impact to people, the environment or property. Although they may or not happen, there is a need to be prepared to response to risks at all times.

All response actions should be geared toward the following priorities in the order below:

- ***Safety*** of people (always First);
- ***Protection*** of the Environment, and
- ***Protection*** of Assets.

Emergence Preparedness and Response Management shall be implemented through by following (5) steps as follow: prevent, mitigate, prepare, rehabilitate and recover.

9.8 GRIEVANCE MECHANISM

The procedure for the management of internal grievances will be enforced as follows:

9.8.1 Timely Action

This should be the first action; the sooner a grievance is settled, the lesser it will affect the operation's performance.

9.8.2 Accepting the Grievance

The supervisor shall recognize and accept the employee grievance as and when it shall be expressed. Acceptance shall not necessarily mean agreeing with the grievance; it rather shows the supervisor's willingness to look into the complaint objectively and dispassionately.

9.8.3 Identifying the Problem

The grievance expressed by the employee shall be at times simply emotionally, over-toned, imaginary or vague. The supervisor, therefore, shall be required to identify or diagnose the problem stated by the employee.

9.8.4 Collecting the Facts

Once the problem is identified as a real problem, the supervisor should, then, collect all the relevant facts and proofs relating to the grievance. The facts so collected shall be separated from the opinions and feelings to avoid distortions of the facts.

9.8.5 Analysing the cause of the Grievance

Having collected all the facts and figures relating to the grievance, the next step involved in the grievance procedure shall be to establish and analyse the cause that led to grievance. The analysis of the cause shall involve studying various aspects of the grievance such as the employees past history, frequency of the occurrence, management practices, union practices, etc. Identification of the cause of the grievance helps the management to take corrective measures to settle the grievance and also to prevent its recurrence.

9.8.6 Taking Decision

In order to take the best decision to handle the grievance, alternative courses of actions shall be worked out. These are, then, evaluated in view of their consequences on the aggrieved employee, the union and the management. Finally, a decision taken shall best suited the given situation. Such decision should serve as a precedent both within the department and the company.

9.8.7 Implementing the Decision

The decision shall be immediately communicated to the employee and also implemented by the competent authority.

In case, it is not resolved, the supervisor once again needs to go back to the whole procedure step by step to find out an appropriate decision or solution to resolve the grievance.

9.9 EXTERNAL COMMUNICATIONS

External communications shall be handled in line with company procedures.

9.10 RECOMMENDATIONS

It is recommended that:

- The proponent strictly adheres to EMP and rehabilitate areas for them to recover;
- Environmental monitoring should undertake to assess recovery, and
- Data from environmental rehabilitation should be kept and availed to GRN authorities when requested.

9.11 REPORTING

Environmental rehabilitation and monitoring should be reported regulating authority when requested. This should be done either by submitting quarterly or annual reports.

Table 9-3: Environmental Mitigation Measures to geological filed mapping and ground geological survey.

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
Geological field Mapping and ground geophysical survey	Socio-economic	- Honour agreements set out in the site (land)-access contracts - Consult with local farmers/communities and provide feedback regarding activities - Provide contact details to a designated person, who will serve as liaison between community and the exploration teams - Farm owners to be provided with a list of all people working on site - All staff operating on site will be provided with identification and proof that they are working for the proponent.	Duration of survey	Head of Exploration and Site supervisor
	Ecosystem diversity/sensitive habitats	- The proponent shall appoint an IEC (independent environmental Consultant) to advise on environmental matters before commencement of intrusive activities (i.e. creating cut lines, access tracks, etc.). - EPLs 7796, 7797, 7798 and 7799 located in the Nossob river basin it is expected there are more grasses and trees than other EPLs. The footprint of this area should be minimised as far as is practically possible.	Duration of survey	EMC (environmental management committee)

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		- After removal of grass and topsoil the site should be rehabilitated to original state to allow regrowth and recovery. - Land degradation is major threat to habitats and exploration that may contribute to further degradation shall be avoided or when undertaken the proponent shall submit to the IEC a rehabilitation plan. - Open fires shall be prohibited on sites. Employees and contractors will use gas cookers for all cooking needs.		
	Geomorphology and landscape	- Use of renewable energy should be encouraged. - Oil and chemical spills should be avoided or minimized. - Solid waste may only be disposed at approved waste facilities.		EMC
	Biodiversity/flora	- The harsh climate in all EPLs expose fauna diversity to higher risks of biodiversity loss and overexploitation. The proponent shall implement a zero-tolerance policy with regards to cutting trees and collecting of firewood. This applies to employees of the proponent as well as employees of contractors working for the proponent. - There is already one invasive plant especially in the Nossob river basin. No plant maybe further introduced.		EMC
	Biodiversity/fauna	- No poaching or similar activities shall be allowed.		EMC

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		- There shall be a vehicle speeds of 40km/h to minimise accidental road kills of small mammals, reptiles and other fauna. - Through environmental awareness, employees and contractors shall be shown the value of biodiversity and the need to conserve the species and habitats that occur within the project area. - No construction of fence may be allowed as they obstruct the migratory routes of game animals.		
		- Pets should be avoided or kept under control and activities that may lead to introduction of invasive species should be avoided.	Duration of survey	EMC
	Air quality	- Vehicle speeds will be limited to 40km/h on access routes to limit dust. - National Road Safety Regulations that applies to usage of seatbelts and adhering to speed limits within gravel road tarred roads is to apply	Duration of survey	Head of Exploration Site supervisor
	Heritage	- In the event that archaeological resources are discovered, a chance find emergency procedure will be implemented which includes the following: o All work at the find will be stopped to prevent damage;	Duration of survey	Head of Exploration Site supervisor

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		○ An appropriate heritage specialist will be appointed to assess the find and related impacts; and ○ Permitting applications will be made to the necessary authorities, if required. - In the event that any graves are discovered during the exploration activities, these will be avoided and preserved as a first priority. If damage is unavoidable, prior to damaging or destroying any identified graves, permission for the exhumation and relocation of graves must be obtained from the relevant descendants (if known) and the relevant local and provincial authorities. - Permits will be required for the removal of protected tree species. (Refer to Section 5.3)		

Table 9-4: Environmental Management Measures to Geochemical Sampling campaign and Sample Analysis

Activity	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
Soil and rock sampling	Socio-economic	- Refer to socio-economic management measures relating to ground surveying (Table 9-3)	Planning. Duration of survey	Head of Exploration Site supervisor
	Biodiversity	- Refer to biodiversity management measures relating to ground surveying (Table 9-3) - Rehabilitate all excavations sites by infilling and topsoil replacement. - Rehabilitate access tracks and cut lines by ripping, unless the land owner wishes to continue using the access tracks for his/her farming activities. - Farm owners should be invited to carry out site inspections following rehabilitation in order to ensure that it has been carried out suitably. - Mangrove (PTY) Ltd policy is to open and close pit/ excavations within single days in order to minimise the risks associated with excavations.	Duration of survey	Head of Exploration Site supervisor

Table 9-5: Environmental Management Measures- Drill Site Establishment

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
- Access the drill site using a new access track where necessary - Set-up drilling machine with drip trays and groundsheets - Strip vegetation and topsoil (up to 300mm where available) - Temporarily store topsoil adjacent to drill site - Set-up mobile ablution facilities - Set-up fuel and lubricants storage area - Waste management	Air quality – dust and gaseous emissions	- The movement of drilling related vehicles on the unpaved access track will be on a small scale - Vehicle speeds will be limited to 30km/h on site (40km/h on access routes) - Vehicles and the drilling rig will be maintained in good working order - Minimise new access route development (routes to be approved by land owners prior to development)	Duration of survey	Head of Exploration Site supervisor
	Noise	- Vehicles will travel maximum 30 km/hour near houses/settlements - No operations are to be conducted at night	Duration of survey	Head of Exploration Site supervisor
	Biodiversity	- Refer to biodiversity management measures relating to ground surveying and sampling (Table 9-3) - Honour agreements set out in the site-access contracts, specifically relating to the areas utilised for tourism, hunting and livestock farming. Special consideration should be given to the sensitive hunting season. - All contractors should bring to site appropriate mobile toilet facilities for the exploration workers.	Duration of survey	Head of Exploration Site supervisor
	Land use	- Access agreements to be prepared and approved prior to drill site establishment. - The footprint of the area to be disturbed will be minimised as far as is practically possible. - Areas used as laydown areas are to be raked and/or ploughed to encourage re-vegetation. - Agree on relevant compensation with land-owners where land uses are impacted.	Duration of survey	Head of Exploration Site supervisor
	Heritage	- Refer to heritage management measures relating to ground surveying and sampling (Table 9-3)	Duration of survey	Head of Exploration Site supervisor
	Socio-economic	- Refer to socio-economic management measures relating to ground surveying (Table 9-3)	Duration of survey	Head of Exploration Site supervisor

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
	Waste Management	- Suitable receptacles (Wheelie Bins) for waste disposal should be available at all exploration sites. These receptacles will be clearly marked for different waste types. - Ensure all Receptacles have lid tops to prevent waste from being blown away - Waste shall be separated and recycled / re-used where possible. - No burning or burying of waste material will be allowed on site. - Employees and contractors will be shown the importance of correct waste disposal as well as waste minimisation and recycling. - Waste will be removed from site and disposed of at a suitable licensed waste disposal facility. - Hazardous waste (including hydrocarbon contaminated material/soil) will be disposed of at a licenced hazardous waste disposal facility. - Written evidence of safe disposal of waste will be kept. - Ensure daily inspection of waste bins and waste bin area to ensure waste is managed appropriately	Duration of survey	Head of Exploration Site supervisor

Table 9-6: Environmental Management Measures- Drilling

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
- Drill borehole - Contain all drilling water in the sump and allow to settle - Log the drill core and place on core trays - Maintain ablution facilities	Contamination of soil/Hydrocarbon spillages	- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances. - Regular inspection of hazardous storage area is required - Regular environmental awareness through Training should include potential risks associated with hydrocarbons. - Mangrove will establish environmental awareness in employees and contractors - All refuelling and any maintenance of vehicles will take place on impermeable surfaces. - Pollution will be prevented through basic infrastructure design and through maintenance of equipment. - Spill kits will be readily available on site. Employees and/or contractors will be shown to use the spill kits to enable containment and remediation of pollution incidents. - A PVC lined sump will be used for collection of oils and silt contained in the drilling water - Any spills will be contained and cleaned up immediately - Non-toxic and biodegradable drilling lubricant will be used	On-going for all drilling activities	Head of Exploration Site supervisor
	Groundwater and surface water contamination	- Refer to management measures relating to contamination of soils - Licenses in terms of the Water Resource Management Act (Act No. 11 of 2013) will be obtained shall the need to drill boreholes for water abstraction purposes arise. - Contractors should bring appropriate Mobile toilet facilities for the exploration site.	On-going for all drilling activities	Head of Exploration Site supervisor

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
	Air quality deterioration	- Vehicle speeds will be limited to 40km/h on access routes and 30Km/h on residential farm property or through settlements to limit dust. - The movement of drilling related vehicles on unpaved access track will be on a small scale. - Water sprays can be used around the lay-down area when a drill-site is located near settlements.	On-going for all drilling activities	Head of Exploration Site supervisor
	Noise generation	- Drilling will only be conducted during the day when drill sites are located close to inhabited homesteads. - Drilling plans and schedules will be discussed and agreed upon with land owners prior to initiation. - Vehicles will travel maximum 30 km/hour near houses/settlements.	On-going for all drilling activities	Head of Exploration Site supervisor
	Land use	- Refer to land use management measures relating to drill site establishment.	On-going for all drilling activities	Head of Exploration Site supervisor
	Social – provision of toilet facilities	- Provide appropriate mobile toilet facilities (Chemical) for the exploration workers on the site. - Ensure that sewerage- effluent tanks if required or installed at the exploration site are managed properly. - Ensure that mobile toilets are working properly and are cleaned at least weekly, so they do not pollute the surrounding environment or create hygiene problems. - The contractor should ensure regular servicing of mobile toilets - All sewerage from the chemical toilets and tanks will be pumped out by a contractor when required.	On-going for all drilling activities	Head of Exploration Site supervisor

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
		- Personnel may not relieve themselves in the surrounding bush.		
Water abstraction	Groundwater quantity	- No abstraction of water is anticipated. - The farming water reservoir will be used as per terms of agreement with the farm owner to extract an amount of approximately 3 cubic meters per day. - Shall the need arise to draw more 3 cubic meter of water per day due to operational demand, the farm owner shall be informed and the current terms of agreement on the extraction of water from the farming reservoir shall be amended to include the additional required water quantity. The quantity of water required should not affect the day to day farming activities in the area. - Shall the need arise to drill boreholes for water abstraction purposes, water levels will be measured prior to abstraction, during abstraction (daily) and after completion. Levels will be reported to Farm owners. Water abstraction permit conditions will apply. - Should water be reached during drilling the farm owners will be informed? Should the Farm owners wish it; the holes will be cased and left for use by the community (liability relating to the boreholes will then be transferred to the Farm Owners).	On-going for all drilling activities	Head of Exploration Site supervisor

Table 9-7: Environmental Management Measures- Social Issues and Training

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
Employees – social issues	Violence, health and safety issues	- Have zero tolerance to alcohol in the workplace. - After taking leave, before returning to work employees should be in isolation for 7 days minimum. This is preventing spread of COVID-19. - Establish a HIV / AIDS / TB workplace policy and wellness programme. - Only People working for Mangrove or their contractors will be allowed to stay at the on-site accommodation. - First Aid Kits should be at all sites and drill camp to be used when needed. - Ambulance/ Emergency numbers should be written and placed at all exploration.	Once- Closure of drill site	Head of Exploration Site supervisor and IEC
Training & Awareness		- All individuals who work on, or visit, the sites are aware of the contents of the EMP.	On-going	Head of Exploration Site supervisor

Table 9-8: Environmental Management Measures- Closure and Rehabilitation

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
General closure activities: - Close drill holes (unless otherwise agreed with the Farm owner) - Remove water from the sump and drip trays - Remove oils and silt from drip trays and store until disposal to permitted hazardous landfill site - Backfill the sump once it has dried out (dome to allow for subsidence) and plug borehole (unless an agreement is in place with community for alternative uses)	Groundwater and surface water contamination	- In all areas where there is storage of hazardous substances (i.e. hydrocarbons), there will be containment of spillages on impermeable floors and bunded trays that can contain 110% of the volume of the hazardous substances. - All refuelling and any maintenance of vehicles will take place on impermeable surfaces. - Pollution will be prevented through basic infrastructure design and through maintenance of equipment. - Spill kits (drip trays) will be readily available on site. Employees and/or contractors will be shown how to use the spill kits to enable containment and remediation of pollution incidents. - Any spills will be contained and cleaned up immediately	Once- Closure of drill site	Head of Exploration Site supervisor
	Noise pollution	- Vehicles will travel maximum 30 km/hour near houses/settlements.	On-going	Head of Exploration Site supervisor
	Contamination of soils	- Refer to management measures relating to contamination of soil (Table 9-4)	On-going and closure	Head of Exploration Site supervisor
	Biodiversity	- Refer to rehabilitation requirements relating to biodiversity in Table 8-2.	On-going and closure	Head of Exploration
	Air quality deterioration	- Vehicle speeds will be limited to 60km/h on access routes to limit dust. - The movement of drilling related vehicles on unpaved access track will be on a small scale.	On-going	Head of Exploration Site supervisor

Activities	Potential Impact	Management and Mitigation Measures	Action Plan	
			Frequency	Responsible Parties
- Move drill core trays, ablution facilities, water bowser, stores and drill rig from the site - Dispose of any general waste to a permitted landfill site - Remove temporary fencing - Rip and plough compacted areas - Replace topsoil over disturbed area - Rehabilitate access track by ripping - GPS marker to identify drill site	Soil erosion	- Impacted footprints are to be raked and/or ploughed to encourage re-vegetation - Access routes will be ripped unless the land owners wish for them to remain. - A monitoring program will be implemented to establish re-vegetation progress - Agree on relevant compensation with land-owners where land used for hunting purposes is impacted	Starts at closure, continues for a pre-determined time (as stated in agreements)	Head of Exploration Site supervisor
	Waste management	- Decommission ablution facilities - Ensure that all waste generated during activities is removed from the site and disposed of appropriately	Once off	Head of Exploration, IEC and Site supervisor
	Land use	- Farm owners will be invited to carry out site inspections following rehabilitation in order to ensure that it has been carried out suitably.	Post-closure	Head of Exploration Site supervisor and IEC

10 THE WAY FORWARD

10.1 WAY FORWARD FOR THE SCOPING REPORT

The way forward for the EIA scoping phase is as follows:

- Submit this report to MME as the Competent Authority who will then forward it to MEFT for a decision record.

11 CONCLUSION

The environmental aspects associated with the proposed exploration activities on EPLs (7795-7800) have been successfully identified and assessed as part of this EIA Scoping process. Relevant mitigation measures have been provided and are included in the EMP that accompanies this scoping report. it must be taken into consideration that, constant engagement with the landowners prior to exploration activities is vital in the success of the proposed project.

12 REFERENCES

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Louis du Preez & Vincent Carruthers. 2009. A complete guide to the frogs of Southern Africa. South Africa. Random House Struik (Pty) Ltd.

Bill Branch. 2009. Field guide to snakes and other reptiles of Southern Africa. South Africa. Struik Publishers (Pty) Ltd.

Coleen Mannheimer & Barbara Curtis. Eds. 2009. Revised and Expanded of Le Roux and Muller,s Field guide to the trees and shrubs of Namibia. Namibia. Macmillan Education Namibia (Pty) Ltd.

Johan van Eck. 2007. Revised and updated M.A.N Muller Grasses of Namibia. Namibia. Publish Pro, Alta van der Merwe.

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13 APPENDICES A – E

TASK	DESCRIPTION	DATE	References
Notification - regulatory authorities and IAPs			
IAP identification	The stakeholder database was created and has been updated throughout the EIA Scoping process, where required.	March & June 2021	Appendix A: IAP database.
IAPs invitation and Distribution of BIDs	Post Mail and emails where relevant distributing the BID and inviting the IAPs to participate in the EIA process were sent to contacts on the IAPs Database.	July-September 2021	Appendix B: Post Mail correspondences including Cover Letters
Distribution of background information document (BID) and telephone calls	BIDs (Appendix B1) with cover letters (post mail) were distributed to relevant authorities and IAPs on the stakeholder database. The purpose of the BID was to inform IAPs about Mangrove's proposed exploration activities, the EIA (Scoping) process being followed, possible environmental impacts and means of providing input to the EIA (Scoping) process.	July-September 2021	• Appendix B: Post Mail correspondences including Cover Letters • Appendix B1: BID

TASK	DESCRIPTION	DATE	References
Newspaper Advertisements	Block advertisements were placed as follows: • New Era (10 March 2021); • The Namibian Sun (24 March 2021);	March 2021	• Appendix C: Newspaper Advertisement
Focus Group Meetings and submission of comments			
Stakeholders Engagement Comments Responses	Reference to the advertisements above and the distribution of the BIDs to the stakeholders, the stakeholders were given an opportunity to raise comments or any concerns. Physical contact was avoided as much as possible. The Stakeholders are still given more opportunity to raise any concerns. During the exploration campaign, stakeholders will again be contacted for input in the project implementation.		
Review of draft Scoping Report			
IAPs and authorities (excluding MEFT) review of Scoping Report and EMP	The Scoping Report (main report, excluding appendices) will be distributed to all IAPs upon request. The Scoping Report will be discussed with the landowners on the EPLs (7795-7800) and emailed where email addresses are furnished. Authorities and IAPs are given 21 working days to review the Scoping Report and submit comments in writing.	August- October 2021	
MEFT review of Scoping Report and EMP	A copy of the final Scoping Report, including authority and IAP review comments, will be delivered to the competent Authority (MME) on completion of the public review process, for review and then MME is to forward report to MEFT for decision. Where necessary, an updated version of the EIA report will be submitted to MME and MEFT for review.	October 2021	
	List of Flora and Fauna on EPLs 7795-7800	Appendix D	
	CV of the consultants that preprared this report	Appendix E	

Appendix A: Stakeholders database

LAND OWNERS DATABASE EPLs 7795 AND 7800

PERIMETER	KEY	FARM_NAME	DISTRICT	HECTARES	IDENTIF	Farm Owner	Address
27109.127	FMM/00140/00REM	BLANKENESE	Mariental	4430.206	Mariental_FMM/00140/00REM	Government Of Namibia	P/Bag 13343 Windhoek
27253.74	FMM/00095/00REM	BLUMFELDE	Mariental	3690.983	Mariental_FMM/00095/00REM	Erasmina Engla Elizabeth Durand	P O Box 11007 Klein Windhoek
15787.422	FMM/00095/00002	BLUMFELDE	Mariental	330.037	Mariental_FMM/00095/00002	Henrich Fortsch	P/Bag 13100 Windhoek
37461.947	FMM/00107/00REM	DERM EAST	Mariental	6553.322	Mariental_FMM/00107/00REM	Dietrch Welhelm Heinz	P O Box 5952 Windhoek
846.302	FMM/00107/00001	DERM EAST	Mariental	4.195	Mariental_FMM/00107/00001	Government Of Namibia	P/Bag 13343 Windhoek
22307.204	FMM/00109/00REM	DERM WEST	Mariental	2987.447	Mariental_FMM/00109/00REM	Dietrch Welhelm Heinz	P O Box 5952 Windhoek
22778.576	FMM/00109/00001	DERM WEST	Mariental	3062.397	Mariental_FMM/00109/00001	Hildegard Malie Brenchenmacher	P O Box 90 Stampriet
34106.725	FMM/00088	EEM	Windhoek	5798.115	Windhoek_FMM/00088	Jacobus Van Der Westhuizen	P O Box 9845 Eros Windhoek
22925.887	FMM/00452	FRANSENHOF	Windhoek	2928.188	Windhoek_FMM/00452	Abraham Johannes Van Niekerk	P/Bag 13110 Windhoek
33655.608	FMM/00119	GEMINI	Mariental	7029.339	Mariental_FMM/00119	Government Of Namibia	P/ Bag 13343 Windhoek
27180.913	FMM/00122/00001	GOMCHANAS	Mariental	4223.558	Mariental_FMM/00122/00001	Gabriel Gerhadus Kruegel	P O Box 622 Mariental

27509.751	FMM/00122/00REM	GOMCHANAS	Marientral	3802.668	Mariental_FMM/00122/00REM	Government Of Namibia	P/Bag 13343 Windhoek
37003.983	FMM/00125/00REM	GOMCHANAS EAST	Marientral	6291.582	Mariental_FMM/00125/00REM	Government Of Namibia	P/Bag 13343 Windhoek
33196.74	FMM/00125/00001	GOMCHANAS EAST_STEINHOF	Marientral	5728.739	Mariental_FMM/00125/00001	Volker Eckhart Plarre	P O Box 313 Mariental
36921.982	FMM/00104	GOMNAB	Marientral	7154.855	Mariental_FMM/00104	Henrich Fortsch	P/Bag 13100 Windhoek
35595.432	FMM/00094/00REM	GUMUCHAB EAST	Windhoek	4527.043	Windhoek_FMM/00094/00REM	Gumuchab Farming (Pty) Ltd	P O Box 864 Windhoek
21187.61	FMM/00094/00001	GUMUCHAB EAST	Windhoek	1956.586	Windhoek_FMM/00094/00001	Sonesta Properties CC	P O Box 6896 Asspannplatz Windhoek
25020.614	FMM/00087/00001	GUMUCHAB WEST	Windhoek	2862.982	Windhoek_FMM/00087/00001	Van Schalkwyk Investments CC	P O Box 542 Windhoek
26586.811	FMM/00087/00REM	GUMUCHAB WEST	Windhoek	3989.587	Windhoek_FMM/00087/00REM	Van Schalkwyk Investments CC	P O Box 542 Windhoek
33462.957	FMM/00110	JA DENNOCH	Marientral	6325.176	Mariental_FMM/00110	Government Of Namibia	P/Bag 13343 Windhoek
34425.623	FMM/00117/00REM	JUDAA	Marientral	7554.818	Mariental_FMM/00117/00REM	Government Of Namibia	P/Bag 13343 Windhoek
23780.446	FMM/00117/00001	JUDAA	Marientral	2468.772	Mariental_FMM/00117/00001	Government Of Namibia	P/Bag 13343 Windhoek
27744.123	FMM/00118	JUDAA EAST	Marientral	4449.187	Mariental_FMM/00118	Judea Farming CC	P O Box 90835 Klein Windhoek
22461.25	FMM/00086	KARLSRUHE	Windhoek	2932.66	Windhoek_FMM/00086	Elke Charlotte Van Niekerk	P O Box 90 Stampriet

29405.196	FMM/00124/00001	KEIB	Marie ntal	4071.013	Mariental_FMM/00124/00001	Dougal Francis Bassingthwaighte	P O Box 951 Mariental
29246.489	FMM/00124/00REM	KEIB_SONNELUS	Marie ntal	4052.969	Mariental_FMM/00124/00REM	Zanja Properties Number Two CC	P O Box 72 Stampriet
41984.616	FMM/00128	KEMPTON	Marie ntal	6677.686	Mariental_FMM/00128	Linko Farming CC	P O Box 74 Stampriet
29951.58	FMM/00108	KILDARE	Marie ntal	5284.434	Mariental_FMM/00108	Elke Charlotte Van Niekerk	P O Box 90 Stampriet
14357.058	FMM/00923/00001	KLEIN BEGIN	Marie ntal	1126.642	Mariental_FMM/00923/00001	Siccitas Farming CC	P O Box 834 Mariental
35708.288	FMM/00135	KLEIN SWARTMODDER	Marie ntal	7415.441	Mariental_FMM/00135	Government Of Namibia	P/Bag 13343 Windhoek
26299.062	FMM/00136/00004	LIDFONTEIN	Marie ntal	4136.847	Mariental_FMM/00136/00004	Goeorge Prinzonsky	P O Box 21262 Windhoek
26068.892	FMM/00080/00REM	LIMERICK	Windh oek	3425.585	Windhoek_FMM/00080/00REM	Abraham Johannes Van Niekerk	P O Box 60 Stampriet
29214.462	FMM/00112	LUNEBURG	Marie ntal	4704.731	Mariental_FMM/00112	Siegfried Hans Ludwig Keil	P O Box 357 Winhoek
18770.701	FMM/00081/00REM	MANHATTAN	Windh oek	1993.194	Windhoek_FMM/00081/00REM	Grace Investment Thirty Eight (Pty) Ltd	P O Box 90083 Klein Windhoek
18881.383	FMM/00081/00002	MANHATTAN_KARO	Windh oek	2099.378	Windhoek_FMM/00081/00002	Siegfried Hans Ludwig Keil	P O Box 357 Winhoek
39050.72	FMM/00097	NEU LOORE	Marie ntal	7185.349	Mariental_FMM/00097	**David Jasen Van Vuuren** + Roads Contractor Company	**P O Box 35 Leonardville** + P O Box 13373 Windhoek
38633.455	FMM/00096/00REM	NEU SIMMERN	Marie ntal	6575.107	Mariental_FMM/00096/00REM	Jan Abraham Ackerman	P O Box 90433 Klein Windhoek

1371.14	FMM/00096/00002	NEU SIMMERN	Marientel	10.148	Mariental_FMM/00096/00002	Jan Abraham Ackerman	P O Box 90433 Klein Windhoek
24525.075	FMM/00103/00REM	NEUMARK	Marientel	3301.666	Mariental_FMM/00103/00REM	Henrich Fortsch	P/Bag 13100 Windhoek
25195.268	FMM/00103/0000A	NEUMARK	Marientel	3403.079	Mariental_FMM/00103/0000A	Amanda Maria Van Der Walt	P O Box 80250 Windhoek
26365.789	FMM/00099/00REM	OLIFANTSWATER EAST	Marientel	3655.698	Mariental_FMM/00099/00REM	G.N.Z Farming (Pty) Ltd	P O Box 30426 Windhoek
35042.878	FMM/00102	OLIFANTWATER WEST	Marientel	6904.319	Mariental_FMM/00102	Olifantwater Farm CC	P O Box 2422 Windhoek
42104.848	FMR/00122	OLIVA	Marientel	10614.179	Mariental_FMR/00122	**Gabriel Gerhadus Kruegel**+ Government of Namibia	**P O Box 622 Mariental**+ P/Bag 13343 Windhoek
29047.834	FMM/00123/00REM	PADDINGTON	Marientel	2688.764	Mariental_FMM/00123/00REM	Coenrad Gert Johannes Le Loux	P O Box 438 Mariental
24999.512	FMM/00123/00002	PADDINGTON	Marientel	3444.321	Mariental_FMM/00123/00002	Coenrad Gert Johannes Le Loux	P O Box 438 Mariental
20468.445	FMM/00123/00001	PADDINGTON	Marientel	997.383	Mariental_FMM/00123/00001	Coenrad Gert Johannes Le Loux	P O Box 438 Mariental
40508.207	FMM/00182	PANAMA	Marientel	10336.769	Mariental_FMM/00182	Hendik Lodewyk Jansen	P O Box 453 Mariental
23758.645	FMM/00211	RETAMA	Marientel	2088.483	Mariental_FMM/00211	Retama Farming CC	P O Box 90835 Klein Windhoek
31222.597	FMM/00191/00001	SEKRETARISPAN	Marientel	4044.051	Mariental_FMM/00191/00001	Government Of Namibia	P/Bag 13343 Windhoek
40943.285	FMM/00191/00REM	SEKRETARISPAN	Marientel	6799.249	Mariental_FMM/00191/00REM	Government Of Namibia	P/Bag 13343 Windhoek

35692.838	FMM/00098	SUNCAIRN	Marientental	6697.253	Mariental_FMM/00098	Ernst Zacharias Jansen Van Vuuren	P O Box 98 Rosh Pinah
31540.704	FMM/00106	TSAURAB	Marientental	6314.661	Mariental_FMM/00106	Heinie Denfred Izaacs	P O Box 3938 Rehoboth

EPL 7796			
Farm Name	**Farm Number**	Farm Owner	Address
The Farm	948	Government of Namibia	P/Bag 13343 Windhoek
Soronto	734	Luxury Investments One Four Three Pty	P O Box 25668 Windhoek
The Farm	949	Government of Namibia	P/Bag 13343 Windhoek
The Farm	950	Government of Namibia	P/Bag 13343 Windhoek
The Farm	951	Government of Namibia	P/Bag 13343 Windhoek
Aminuis Native Reserve	330		
Goreb	374	Government of Namibia	P/Bag 13343 Windhoek
Nuiba	373	Government of Namibia	P/Bag 13343 Windhoek
wachus	993	Gottfriedine	P o Box 1375 Gobabis
EPL7799			
The Farm	951	Government of Namibia	P/Bag 13343 Windhoek
The Farm	952	Government of Namibia	P/Bag 13343 Windhoek
The Farm	953	Government of Namibia	P/Bag 13343 Windhoek

The Farm	954	Government of Namibia	P/Bag 13343 Windhoek
Aminuis Native Reserve	330		
EPL7798			
The Farm	954	Government of Namibia	P/Bag 13343 Windhoek
The Farm	955	Government of Namibia	P/Bag 13343 Windhoek
The Farm	956	Government of Namibia	P/Bag 13343 Windhoek
The Farm	957	Government of Namibia	P/Bag 13343 Windhoek
The Farm	958	Government of Namibia	P/Bag 13343 Windhoek
Aminuis Native Reserve	330		
EPL7797			
The Farm	958	Government of Namibia	P/Bag 13343 Windhoek
The Farm	959	Government of Namibia	P/Bag 13343 Windhoek
	unidentified		
The Farm	961	Government of Namibia	P/Bag 13343 Windhoek
The Farm	962	Government of Namibia	P/Bag 13343 Windhoek
The Farm	963	Government of Namibia	P/Bag 13343 Windhoek

Appendix B: Post Mail correspondences including Cover Letters

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gumuchab West
87 Ptn 1
POBox 542 Windhoek

ATTENTION: Van Schalkwyk Inv. CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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- Stakeholders Engagement Process and request of your contact details;
- The way forward;

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gumuchab West
87 Rem
PO Box 542 Wtk

ATTENTION: Van Schalkwyk Inv. CC

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WINDHOEK
2021/08/30
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Ja Dennoch
110
P/Bag 13343 Wtk

ATTENTION: Sir | Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Judaa
117 Rem
P/Bag 13343 WHK

ATTENTION: Sir/Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Judaa
117 Ptn 1
P/Bag 13343 WHK

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Judaa East
118
P O Box 90835 K/Windhoek

ATTENTION: Judea Farming CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CC
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Karlsruhe
86
POBox 90 Stampriet

ATTENTION: Elke C. Van Niekerk

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 2021.09.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Keib
124 Ptn 1
PO Box 951 Mariental

ATTENTION: Daugal F. Baessingthwaight

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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2021.08.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Keib_Sonnelus
124 Rem
PO Box 72 Stampriet

ATTENTION: Zanja Properties Number Two CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Kempton
128
PO Box 74 Stampriet

ATTENTION: Linko Farming CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 5
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Kildare
108
PO Box 90 Stampriet

ATTENTION: Elke C. Van Niekerk

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 2021.09.03-6 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Klein Begin
923 Ptn 1
P O Box 834 Mariental

ATTENTION: Siccitas Farming CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Klein Swartmodder
135
P/Bag 13343 Windhoek

ATTENTION: Sir/ Madam

Dear Sir/ Madam

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Kidfontein
136 Ptn 4
P O Box 21262 Wtk

ATTENTION: George Prinzonsky

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Limerick
80 Rem
P O Box 60 Stampriet

ATTENTION: Abraham J. Van Niekerk

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

Thank you for the opportunity presented to engage with you. This letter sets out the following detail;

- The proposed project background;
- Stakeholders Engagement Process and request of your contact details;
- The way forward;

1. PROJECT BACKGROUND

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- **Drilling:** Core drilling of pilot holes and downhole logging

WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Luneburg
112
P O Box 357 WHK

ATTENTION: Siegfried H.L. Keil

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03 B
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Manhattan
81 Rem
PO Box 90083 Wtk

ATTENTION: Grace Inv. Thirty Eight (Pty) Ltd

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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2021/03/05
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Manhattan_Karo
81 Ptn 2
P O Box 357 WHK

ATTENTION: Siegfried H. L. Keil

Dear Sir/ Madam

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WINDHOEK
2021/08/31
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Neu Loore
97
PO Box 35 Leonardville

ATTENTION: David J. Van Vuuren

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Ney Simmern
96 Rem
POBox 90433 K| Windhoek

ATTENTION: Jan A. Ackerman

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021-09-03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Neu Simmen
96 Rtn 2
Box 90433 K/Windhoek

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WINDHOEK CNTR 9
2021 08 03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Neumark
103 Rem
P/Bag 13100 Windhoek

ATTENTION: Henrich Fortsch

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Neumark
103 A
POBox 80250 Wtk

ATTENTION: Amanda M. Van Der Walt

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK ENTR 9
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Olifantwater East
99 Rem
Box 30426 Windhoek

ATTENTION: G.N.Z Farming CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK ENTER NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 962
P/Bag 13343
Windhoek

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 963
P/Bag 13343
Windhoek

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Panama
182
Box 453 Windhoek

ATTENTION: Hendrick L. Jansen

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2021.09.03
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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Oliva
122
P/Bag 13343 Windhoek

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WINDHOEK CNTR 6
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

Neu Koore
97
Box 13373 Windhoek

30 August 2021

ATTENTION: Roads Contrator Company

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Blankensee
Farm. no 140 Rem
P/Bag 13343 Windhoek

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WINDHOEK CNTR 9
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Blumfelde
Farm no. 95 Rem
POBox 11001 K/Windhoek

ATTENTION: Erasmina E.E. Durand

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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- Stakeholders Engagement Process and request of your contact details;
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WINDHOEK NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Blumfelde
95 Ptn 2
P/Bag 13100 Windhoek

ATTENTION: Henrich Fortch

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

Derm East
107 Rem
PO Box 5952 WHK

30 August 2021

ATTENTION: Dietrch W. Heinz

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

Derm East
107 Ptn 1
P/Bag 13343 Wtk

30 August 2021

ATTENTION: Sir / Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Derm West
109 Rem
P O Box 5952 WHK

ATTENTION: Dietrch W. Heinz

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Derm West
109 Ptn 1
PO Box 90 Stampriet

ATTENTION: Hildegard M. Brenchenmacher

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

EEM
88
P O Box 9845 Eros

ATTENTION: Jacobus V D Westhuizen

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 2021.09.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Fransen hof
452
P/Bag 13110 WHK

ATTENTION: Abraham J. Van Niekerk

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 69 2021.09.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gemini
119
P/Bag 13343 Wdhk

ATTENTION: Sir/Madam

Dear Sir/ Madam

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WINDHOEK CNTR P.O. BOX 2021.05.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gomchanas
122 Ptn 1
P O Box 622 Mariental

ATTENTION: Gabriel G. Kruegel

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 2021.08.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Comchanas
122 Rem
P/Bag 13343 Wdhk

ATTENTION: Sir/Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gomchanas East
125 Rem
PO Box 13343 WHK

ATTENTION: Sir / Madam

Dear Sir/ Madam

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WINDHOEK 2021 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gomchanas East Steinhof
125 Ptn1
PO Box 313 Mariental

ATTENTION: Volker E. Plarre

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gomnab

104

P/Bag 13100 Wtfk

ATTENTION: Henrich Fortch

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 2021.09.03 8 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Gumuchab East
94 Rem
P O Box 864 WHK

ATTENTION: Gumuchab Farming Pty

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03-8
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

Gumuchab East
94 Ptn 1
PO Box 6896 Ausspannplz

30 August 2021

ATTENTION: Sonesta Properties CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

Thank you for the opportunity presented to engage with you. This letter sets out the following detail;

- The proposed project background;
- Stakeholders Engagement Process and request of your contact details;
- The way forward;

1. PROJECT BACKGROUND

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 955
P/Bag 13343
Windhoek

ATTENTION: Sir / Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 956
P/Bag 13343
Windhoek

ATTENTION: Sir/Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 957
P/Bag 13343
Windhoek

ATTENTION: Sir / Madam

Dear Sir/ Madam

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WINDHOEK CNTR 2021.09.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 958
P/Bag 13343
Windhoek

ATTENTION: Sir/Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 959
P/Bag 13343
Windhoek

ATTENTION: Sir / Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021/08/03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 961
P/Bag 13343
Windhoek

ATTENTION: Sir/Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021 08 03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 374
P/Bag 13343
Windhoek

ATTENTION: Sir / Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK 2021.09.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 373
P/Bag 13343
Windhoek

ATTENTION: Sir/Madam

Dear Sir/ Madam

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT
CONSULTANTS CC
Experts in Sustainable Development

30 August 2021

Wachus
Farm no 993
Box 1375 Gobabis

ATTENTION: Gottfriedine

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 951
P/Bag 13343
Windhoek

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Dear Sir/ Madam

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 952
P/Bag 13343
Windhoek

ATTENTION: Sir / Madam

Dear Sir/ Madam

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2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 953
P/Bag 13343
Windhoek

ATTENTION: Sir/Madam

Dear Sir/ Madam

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2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 954
P/Bag 13343
Windhoek

ATTENTION: Sir | Madam

Dear Sir/ Madam

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NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Suncairn
98
Box 98 Rosh Pinah

ATTENTION: Ernst Z. J. Van Vuuren

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Isaurab
106
Box 3938 Rehoboth

ATTENTION: Heinie D. Izaacs

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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- **Drilling:** Core drilling of pilot holes and downhole logging

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 948
P/Bag 13343
Windhoek

ATTENTION: Sir / Madam

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK
2021.08.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Soronto
734
Box 25668 Windhoek

ATTENTION: Luxury Inv. 143 Pty

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9
2021.09.03
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 949
P/Bag 13343
Windhoek

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no. 950
P/Bag 13343
Windhoek

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WINDHOEK CNTR 9
2021.09.03.8
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Farm no 951
P/Bag 13343
Windhoek

ATTENTION: Sir/ Madam

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Olifantwater West
102
Box 2422 Windhoek

ATTENTION: Olifantwater Farm CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK CNTR 9 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT
CONSULTANTS CC

30 August 2021

Oliva
122
PO Box 622 Mariental

ATTENTION: Gabriel G. Kruegel

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Paddington
123 Rem
Box 438 Mariental

ATTENTION: Coenrad G.J. le Loux

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK ENTER 9 2021.08.30 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Paddington
123 Ptn 3
Box 438 Mariental

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MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Paddington
123 Pth 1
Box 438 Mariental

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WINDHOEK CNTR 2021.09.03 NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Retama
211
Box 90535 K/Windhoek

ATTENTION: Retama Farming CC

Dear Sir/ Madam

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS: SCOPING REPORT AND EMP FOR THE PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795 TO 7800 IN KHOMAS, HARDARP AND OMAHEKE REGION

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WINDHOEK ENTR 9
2021.09.03 B
NAMIBIA

MARVIN
ENVIRONMENTAL PROJECT

30 August 2021

Sekretarispan
191 Ptn 1
P/Bag 13343 Windhoek

ATTENTION: Sir/ Madam

Dear Sir/ Madam

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WINDHOEK CNTR 2021/08/30

MARVIN
ENVIRONMENTAL PROJECT

Sekretarispan
191 Rem
P/Bag 13343 Windhoek

30 August 2021

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Appendix B1: Background Information Document

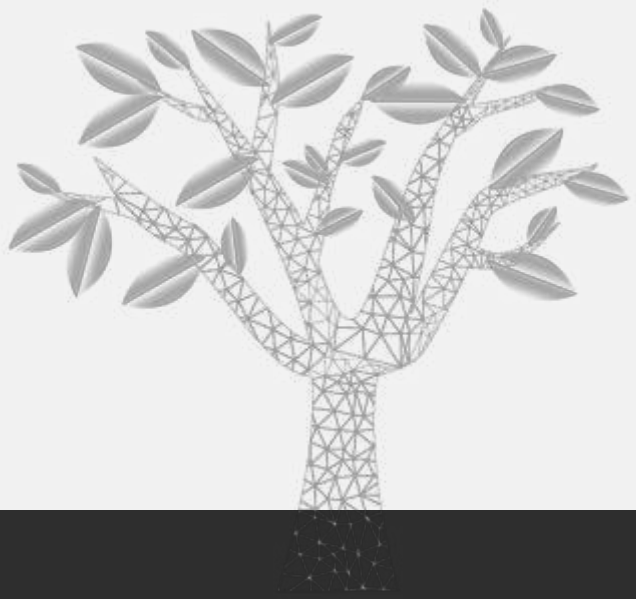
MARVIN
ENVIRONMENTAL PROJECT
CONSULTANTS CC
Experts in Sustainable Development

MANGROVE (PTY) LTD

BACKGROUND INFORMATION DOCUMENT:

EIA PROCESS: SCOPING REPORT (ASSESSMENT) AND EMP FOR PROPOSED EXPLORATION ACTIVITIES ON EPLS 7795, 7796,7798,7799 & 7800 IN KHOMAS, HARDAP AND OMAHEKE REGIONS

AUGUST 2021



Contact: +264 85 732 8952 | marvinconsultants@outlook.com

CONTENTS

1 INTRODUCTION

In 2021, Mangrove (PTY) Ltd ("Mangrove") proposes to undertake exploration activities for Base and Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear Fuel Minerals and Precious Metals on Exclusive Prospecting Licenses ("EPLs") 7795; 7796; 7797; 7798; 7799 and 7800 (EPLs 7795 - 7800) in Khomas, Hardap and Omaheke regions (Refer to Figure 1-1 for an overall locality map to all the EPLs).

Mangrove through the Minisitry of Mines and Energy (MME) have undertaken extensive baseline review of the EPLs based on historical geological mapping and water drilling activities that have recorded the existence of potential metals from water borehole logging which were largely dismissed in the past as being of no economic significance. **The proposed exploration approach will be structured into three phases and the activities and results of each phase will inform the activities to be undertaken in the following phase until there is sufficient justification for an exploratory drilling program**. The proposed exploration programme will be implemented accordingly and ensure that aspects related to environmental and social aspects are addressed accordingly through the Envrionmental Impact Assessment Process.

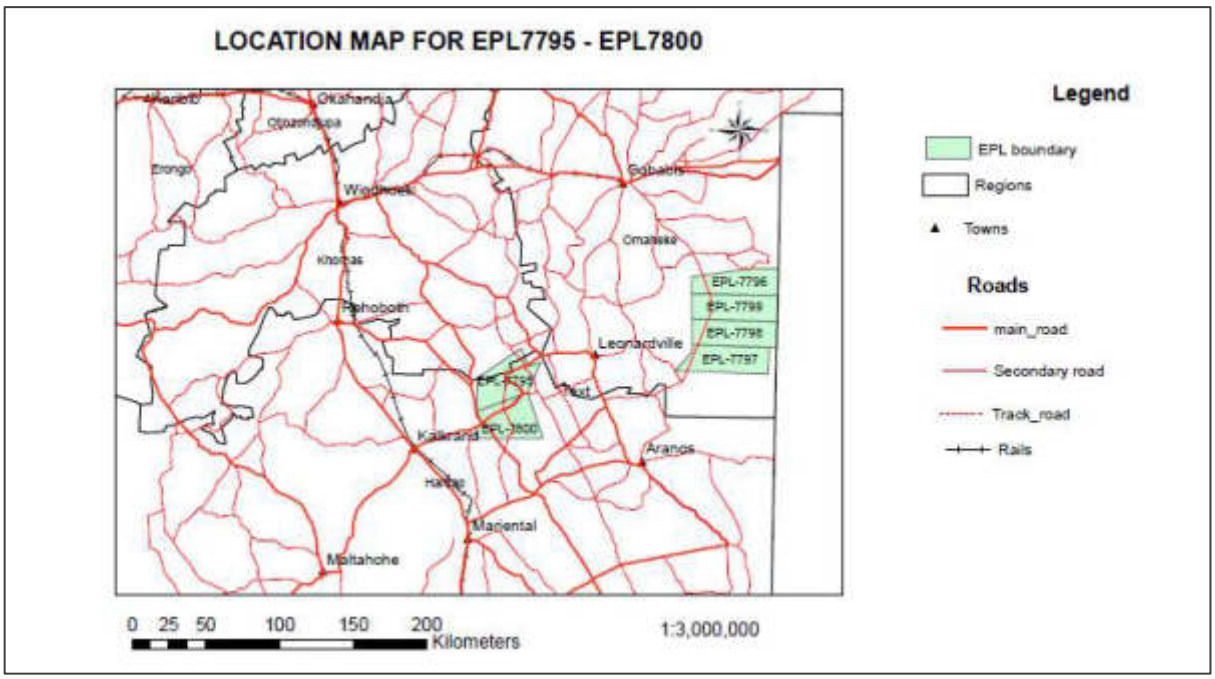


Figure 1-1: Locality Map to Mangrove EPLs proposed for exploration activites (Mangrove and Hiveluah 2021)

EPL 7795

EPL 7795 is located about ±102 km south east of Rehoboth (23.637222 S; 18.195556 E) and can be accessed via the C25 road. The EPL is split by both Khomas and Hardap regions and encompasses an area of about 99966.19 Hectares (ha). Refer to Figure 1-2 for detail on the EPL.

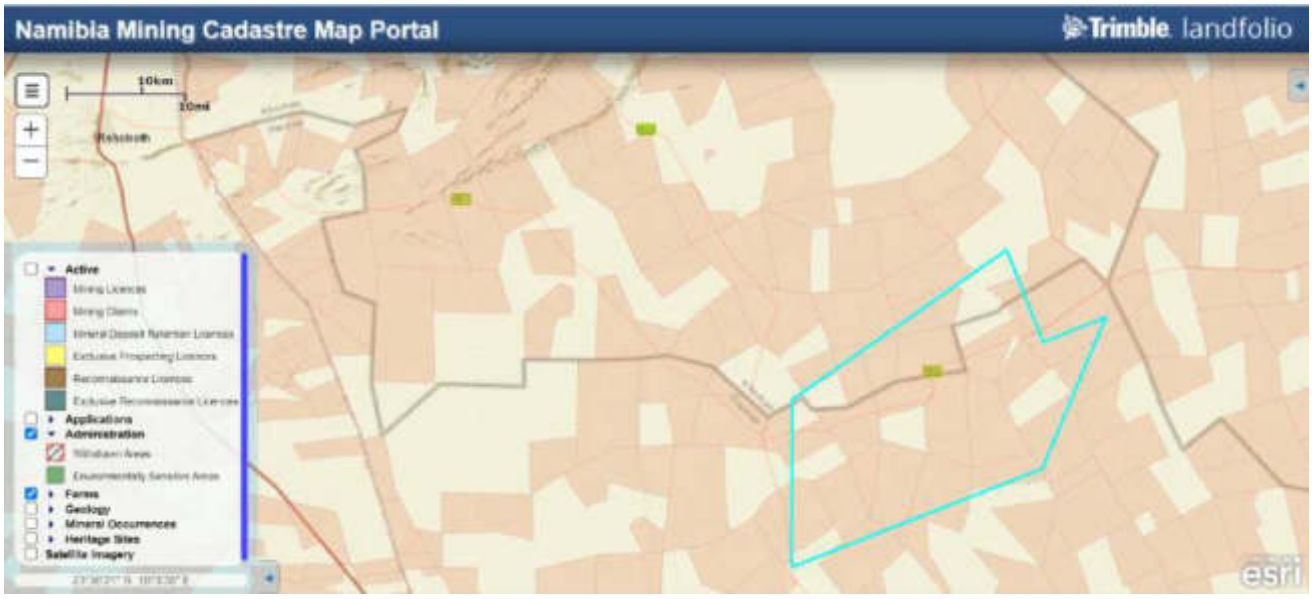


Figure 1-2: Locality Map to EPL 7795 (Namibia Mining Cadastre Map Portal 2021)

EPL 7800

EPL 7800 is located about ±113 km Southwest of Rehoboth and can be accessed via the C25 road. The EPL is within the boundery of the Hardap Region and encompasses an area of about 99985.07 ha. Refer to Figure 1-3 for detail on the EPL location.

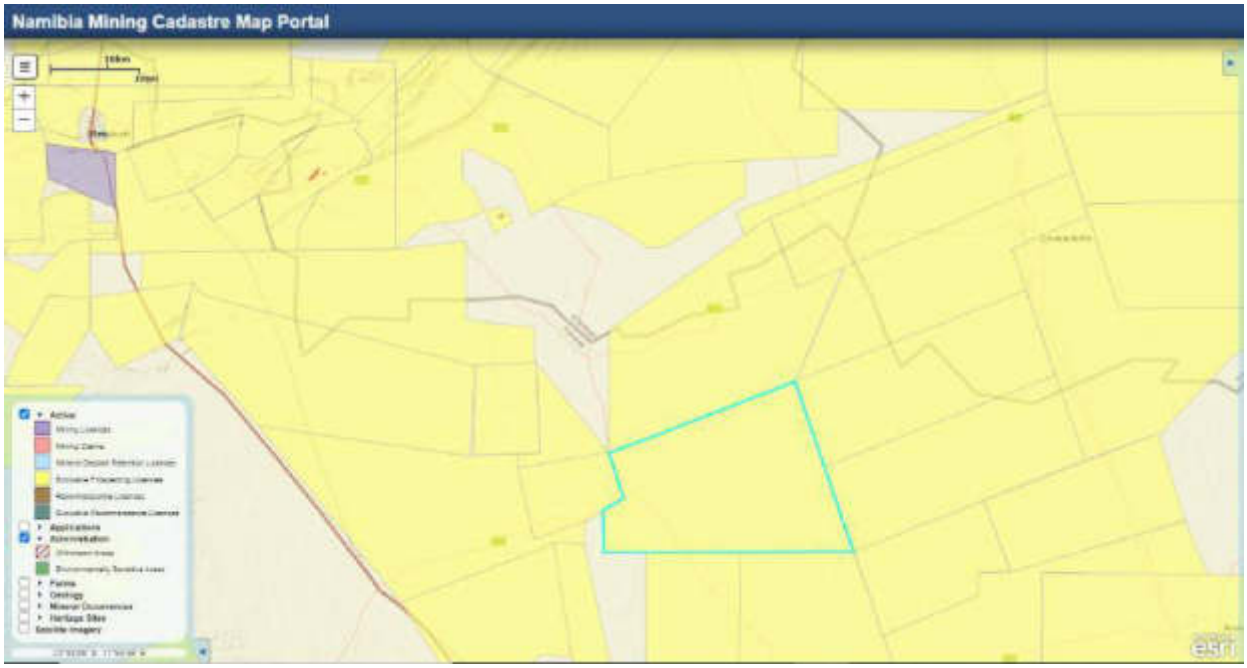


Figure 1-3: Locality Map to EPL 7800 (Namibia Mining Cadastre Map Portal 2021)

EPL 7796

EPL 7796 is located about ±85 km Southwest of Gobabis (23.031667 S; 19.741389 E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 91155.30 ha. Refer to Figure 1-4 for detail on the EPL.

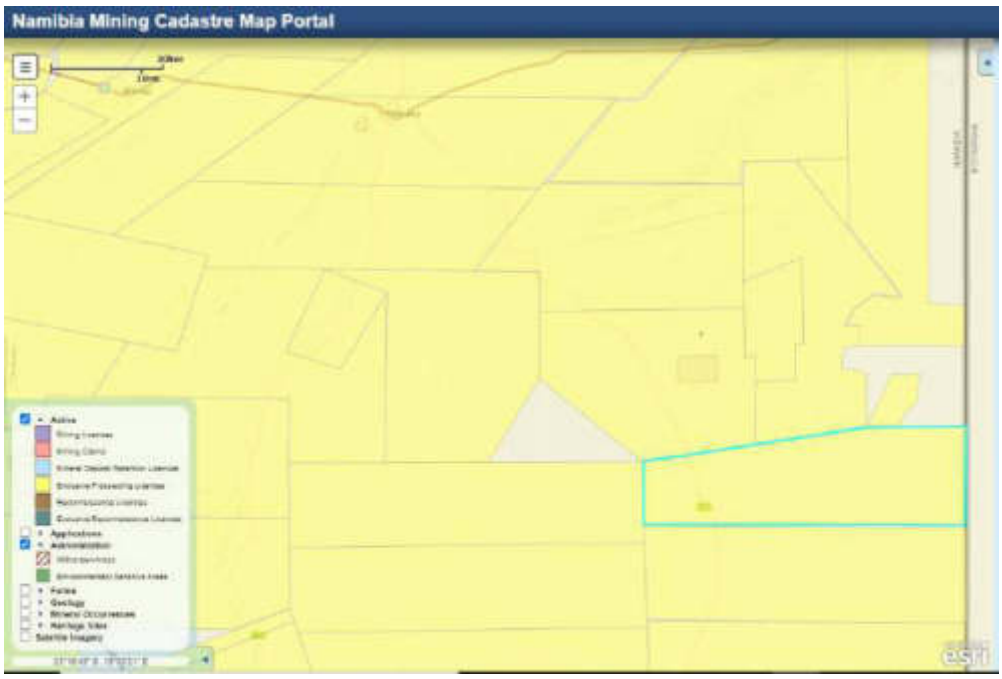


Figure 1-4: Locality Map to EPL 7796 (Namibia Mining Cadastre Map Portal 2021)

EPL 7799

EPL 7799 is located about ± 90 km south west of Gobabis (23.179444S; 19.699722 E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 91155.30 ha. Refer to Figure 1-5 for detail on the EPL.

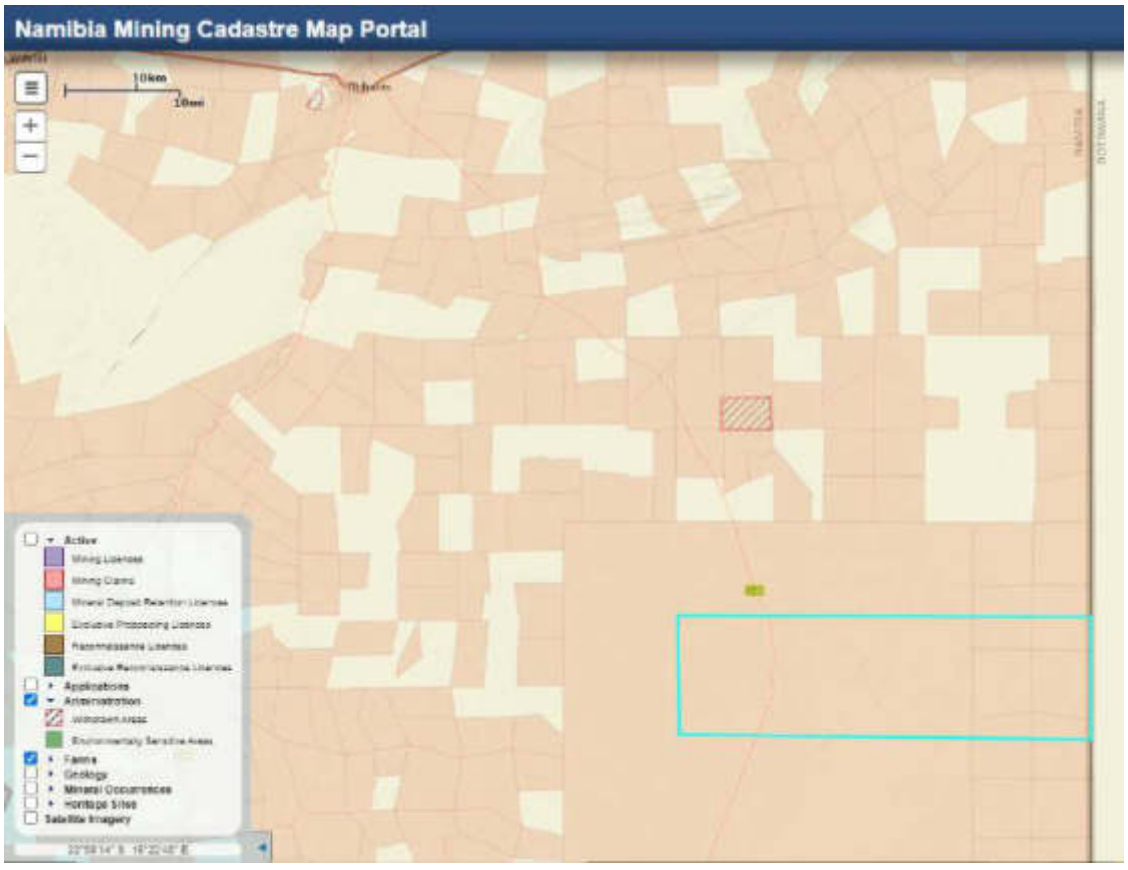


Figure 1-5: Locality Map to EPL 7799 (Namibia Mining Cadastre Map Portal 2021)

EPL 7798

EPL 7798 is located about ± 112 km south west of Gobabis (23.350556S; 19.673611 E) in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 99985.19 ha. Refer to Figure 1-6 for detail on the EPL 7798.

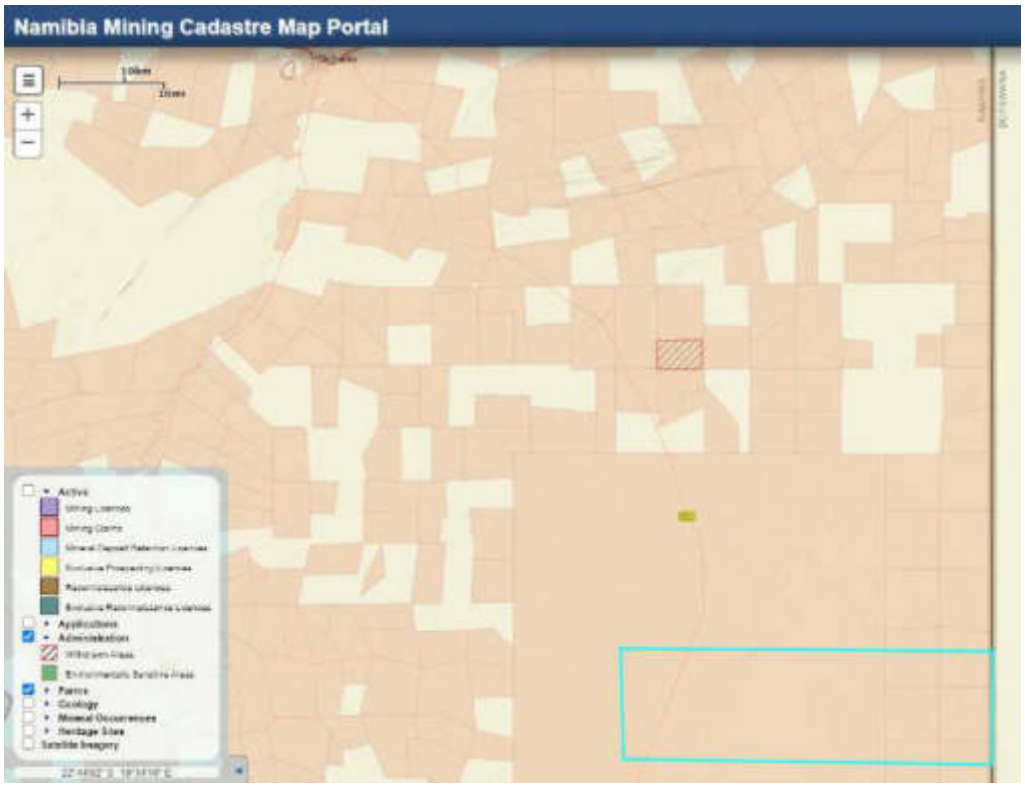


Figure 1-6: Locality Map to EPL 7798 (Namibia Mining Cadastre Map Portal 2021)

EPL 7797

EPL 7797 is also located about ± 126 km south west of Gobabis in the Omaheke region and can be accessed via the C22 road (south east of Gobabis). The EPL encompasses an area of about 99894.80 ha. Refer to Figure 1-4Figure 1-7 for detail on the EPL 7797.

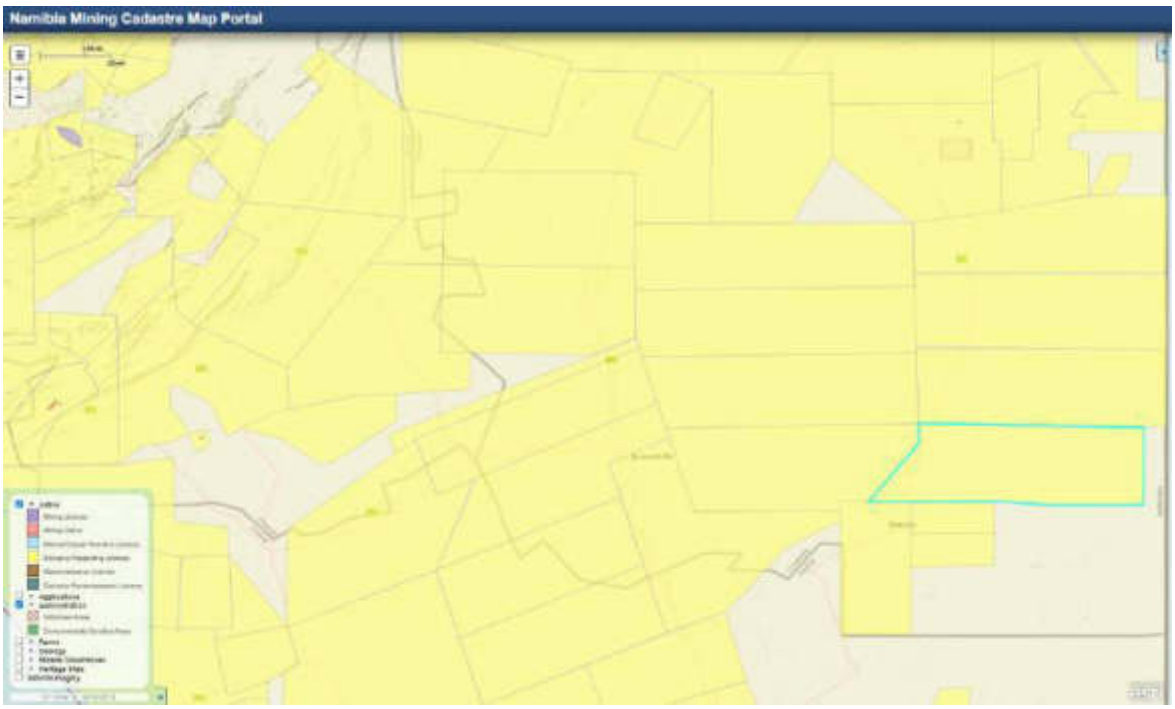


Figure 1-7: Locality Map to EPL 7797 (Namibia Mining Cadastre Map Portal 2021)

Mangrove require an Environmental Clearance Certificate (ECC) from the Ministry of Environment Forestry and Tourism (MEFT): Department of Environmental Affairs (DEA) to conduct the proposed exploration activities on EPLs 7795 – 7800.

1.1 MOTIVATION (NEED AND DESIRABILITY)

The Ministry of Mines and Energy (MME), Directorate of Mines undertakes to exploit the country's mineral resources in a manner which integrates mining into the various economic sectors for the socio-economic development of the country. In order to achieve this, MME issues EPLs to various entities for the exploration of minerals within the country. Mangrove intends to explore which metals and/or minerals could be found in the EPLs 7795-7800. 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.

1.2 EIA PROCESS

1.2.1 Introduction to EIA for the proposed exploration activites

EIA's in Namibia are regulated by the Ministry of Environment, Forestry and Tourism (MEFT) in terms of the Environmental Management Act, 7 of 2007. This Act was gazetted on 27 December 2007 (Government Gazette No. 3966). The List of Activities that may not be undertaken without an Environmental Clearance Certification (ECC) and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Government Gazette No. 4878) were promulgated on 6 January 2012.

The following listed activities are relevant to the proposed exploration activities on EPLs 7795-7800:

Mining and Quarrying Activities

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

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

3.3 Resource extraction, manipulation, conservation and related activities.

Water Resource Developments

8.1 The abstraction of ground or surface water for industrial or commercial purposes.

8.2 The abstraction of groundwater at a volume exceeding the threshold authorised in terms of a law relating to water resources.

As interpreted above, the proposed exploration activities requires an EIA process prior to any activities on the localities.

1.2.2 EIA process for the proposed exploration activities on EPLs 7795-7800

An application will be submitted to the Ministry of Environment Forestry and Tourism (MEFT): Department Environmental Affairs (DEA) for the activities relating to the EPLs. An EIA process is being conducted in terms of the Environmental Management Act, 7 of 2007. This process includes: a screening phase and a scoping phase, which will include an impact assessment (qualitative) and the production of an Environmental Management Plan (EMP).

The main purpose of this report is to provide information relating to Mangrove and Hiveluah proposed exploration activities and to indicate which environmental aspects and potential impacts have been identified during the Screening and Scoping phases. This Scoping Report was developed through site observations and consultation with relevant stakeholders. An Environmental Management Plan (EMP) is also included as part of this report (Section **Error! Reference source not found.**).

This report is the Scoping Report and EMP. Taking the above mentioned into consideration, this report will provide sufficient information for the MEFT to make an informed decision regarding the proposed exploration activities, and whether an environmental clearance certificate can be issued or not.

More detailed information on the Scoping Report and EMP is provided in Section 0.

1.2.3 EIA Scoping process

The EIA Scoping process and corresponding activities are outlined in Table 1-1 below.

Table 1-1: EIA Scoping process for proposed Exploration activities on EPLs (7795-7800)

Objectives	Corresponding activities
Project initiation and Screening Phase (March and July-August 2021)	
• Request for Project information, project description etc; • Identify environmental aspects and potential impacts internally; • Notify the competent authority and decision-making authority of the proposed project and EIA process. • Register the project on the MEFT- EIA online portal. • Initiate the EIA Scoping process.	• Project initiation discussions with the project proponent. Identify environmental issues and determine legal requirements. • A pre-application consultation with MME and the submission of the ECC application form was done. • Registration of the project with MEFT
Scoping phase (including assessment of impacts) (June- August 2020)	
• Identify interested and/or affected parties (IAPs) (specifically relevant and neighboring business operators) and involve them in the scoping process through information sharing. • Further identify potential environmental issues associated with the proposed project. • Consider alternatives. • Provide a description of the potentially affected environment • Assessment of potential environmental impacts associated with the proposed project.	• Notify relevant government authorities and IAPs of the project and EIA process (telephone calls, e-mails, distribution of background information documents, newspaper advertisements and site notices) • Interested and affected party (IAP) registration and comments • Site visit and Focus Group meetings • Compilation of Scoping Report and EMP • Distribute Scoping Report to relevant authorities and IAPs for review (August 2021). • Forward finalised Scoping Report and EMP with IAPs comments to Competent Authority MME who will then forward the report to MEFT for decision making (September 2021).

• Additional design requirements and management and mitigation measures. • Receive feedback on application	

1.2.4 EIA Team

The EIA process management role is performed by Marvin Sanzila of Marvin Environmental Project Consultants CC with technical input by Envirodu Consulting and Training Solutions cc.

Marvin Environmental Projects Consultants CC (Marvin Consultants) is a registered independent company comprised of a team of experts and associates. Marvin Sanzila (MS) was appointed by SCT to undertake the EIA process required for the proposed upgrade. The EIA process management role is performed by Marvin Sanzila as the EIA practitioner. MS is a certified Environmental Practitioner and under the Environmental Assessment Professionals Association of Namibia (EAPAN) and serves on the board as the Secretary General. MS has nine years of relevant experience in environmental management, Project Management, conducting/managing EIAs, compiling EMPs and implementing EMPs and Environmental Management Systems. MS has assisted various consultants in conducting Environmental Impact Assessments (EIAs) for project appraisals with the regulating authorities. All projects experience related to EIAs have been successfully awarded Environmental Clearance Certificates (ECCs) by the regulating authority and are operational, enhancing both local and international business sector while implementing best practice environmental and social management tools. Apart from Project Management and Environmental Assessments, MS has presented and narrated two films, one that emphasizes the role of the environmental Management Act no.7 of 2007 in the modern-day Namibian development context and the other that looks at Namibia's Wetlands and its potential for ecotourism.

Twalinohamba Akawa has a master's degree of Philosophy in Environmental Management (Stellenbosch University, 2012) specialising in development planning and environmental analysis. Teaching and research from the University of Namibia exposed him to a wide range of project activities: ecosystem health assessment; water quality monitoring, standard and treatment; fisheries and aquaculture. Mr Twalinohamba is also an Environmental Assessment Practitioner providing services across various sectors of development. Services include; EIA/scoping, socio-economic, ecosystem and biodiversity assessments; climate risk analysis, mitigation and resilience. His current focus/interest is the transfer/application of new technologies (i.e. the essentials eight: artificial intelligence, virtual reality, internet of things, etc) in mitigating environmental risks such as droughts, pollution, environmental degradation and others.

The relevant curriculum vitae (EIA Practitioners) documentation is attached in Appendix F. The environmental project team is outlined in Table 1-2 below.

Table 1-2: The Environmental project team

Team	Name	Designation	Tasks and roles
Mangrove and Hiveluah Consult	Leefa Ndilula	Executive	Executive
	Garneth Shamaila	Project Manager	Management and overall coordination of project related activities.
Marvin Environmental Projects Consultants CC	Marvin Sanzila	EIA project Practitioner and Project Manager.	Management of the EIA process and compilation of relevant reports.
	Christine Links	Project Administrator	All Project administrative needs
	Twalinohamba Akawa	Envirodu Consulting and Training Solutions cc	Technical input reviewer

2 SCOPING METHODOLOGY

2.1 INFORMATION COLLECTION

The main sources of information for the preparation of this Scoping Report include:

- Project information provided by Mangrove and Hiveluah which includes:
    - Description of proposed Exploration activities on EPLs (7795-7800)
    - Locality Maps to EPLs
- Site visit;
- Consultation with Interested and Affected Parties (IAPs);
- Mangrove and Hiveluah Consult Environmnetal Protection Brief Report
- Literature research.

2.2 SCOPE TO THE SCOPING REPORT

The main purpose of this Scoping Report is to indicate which environmental aspects relates to the proposed exploration activities that might have an impact on the environment, to assess them and to provide management and mitigation measures to avoid or reduce these impacts. Table 2-1 outlines the Scoping

Report requirements contained in Section 8 of the Environmental Impact Assessment Regulations promulgated in February 2012 under the Environmental Management Act, 7 of 2007. The table includes reference to the relevant sections in the report.

Table 2-1: Scoping report requirements stipulated in the EIA regulation and the respective sections in the EIA rport

Requirements for a Scoping Report in terms of the February 2012 regulations	Reference in report in Main Report
(a) the curriculum vitae of the EAP who prepared the report;	Appendix G
(b) a description of the proposed activity;	Sections 4
(c) a description of the site on which the activity is to be undertaken and the location of the activity on the site	Section 1 &4
(d) a description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Sections 6
(e) an identification of laws and guidelines that have been considered in the preparation of the Scoping Report;	Section 3
(f) details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including - **(i) the steps that were taken to notify potentially interested and affected parties of the proposed application;** **(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;** **(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application; and** **(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;**	Section2.4 , Appendices C- E
(g) a description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Sections 1 and 5
(h) a description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Section 7
(i) terms of reference for the detailed assessment; and	
(j) a draft management plan, which includes - **(i) information on any proposed management, mitigation, protection or remedial measures to be undertaken to address the effects on the environment that have been identified including objectives in respect of the rehabilitation of the environment and closure;**	Section 8

(ii) as far as is reasonably practicable, measures to rehabilitate the environment affected by the undertaking of the activity or specified activity to its natural or predetermined state or to a land use which conforms to the generally accepted principle of sustainable development; and **(iii) a description of the manner in which the applicant intends to modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation remedy the cause of pollution or degradation and migration of pollutants.**	

2.3 PUBLIC PARTICIPATION PROCESS AND COVID-19 PANDEMIC RESTRICTIONS

The COVID-19 pandemic is a pandemic of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak was first identified in Wuhan, China, in December 2019. The World Health Organization declared the outbreak a Public Health Emergency of International Concern on 30th January, and a pandemic on 11th March. The COVID-19 pandemic reached Namibia on 14th March 2020. On 14 April 2020, the Government of Namibia stated a more aggressive state of emergency and declared a lockdown from midnight 17 April 2020 to midnight 4 May 2020. Prior to the lapse of the lockdown, a 4-stage strategy was developed to gradually ease restrictions. The EIA process was undertaken in the currently active stage 3 of the Namibian COVID-19 guideline.

In order to avoid human contact and comply as much as possible to the national regulations on COVID-19, Focus group meetings with key stakeholders were undertaken at a maximum of 10 people per meetings. The public participation/ stakeholder's engagement process is aimed to ensure that all persons (i.e. relevant business neighbors/ and/or organisations) that may be affected by, or interested in, the proposed activities were informed of the project and could register their views and concerns. By consulting with IAPs the range of environmental issues to be considered in the Scoping Report (including the assessment of impacts) has been given specific context and focus.

Included below is a summary of the people consulted, the process that was followed, and the issues that were identified.

2.3.1 Mangrove and Hiveluah Stakeholders

The following table (Table 2-2) provides a list of stakeholders consulted during the EIA process.

Table 2-2: EIA process stakeholders

Stakeholder Grouping	Organisation
Government Ministries	• Ministry of Environment, Forestry and Tourism (MEFT) ○ Department of Environmental Affairs • Ministry of Agriculture Water and Land reform; • Ministry of Urban and Rural Development;

Affected Landowners	• Landowners in the EPLs (7795-7800); • Ovambanderu Traditional Authority; • Farmers Union;
Regional and local Authorities	• Khomas Regional Council • Rehoboth Town Council • Gobabis Town Council
Other interested and/ or affected parties	• Any other people with an interest in, or who may be affected by, the proposed project.

The full stakeholder database for this project is included in Appendix C of the report.

2.3.2 Steps in the consultation process

Table 2-3 sets out the steps in the consultation process that were conducted during the EIA process:

Table 2-3: Consultation process with IAPs

TASK	DESCRIPTION	DATE	References in Main report
Notification - regulatory authorities and IAPs			
IAP identification	The stakeholder database was created and has been updated throughout the EIA Scoping process, where required.	March & June 2021	Appendix C1: IAP database.
IAPs invitation and Distribution of BIDs	Post Mail and emails where relevant distributing the BID and inviting the IAPs to participate in the EIA process were sent to contacts on the IAPs Database.	July-September 2021	Appendix C2: Post Mail correspondences
Distribution of background information document (BID) and telephone calls	BIDs with cover letters (Email correspondences and post mail) were distributed to relevant authorities and IAPs on the stakeholder database. BID's were emailed to I&APs where email contacts were available. The purpose of the BID was to inform IAPs about Mangrove and Hiveluah's proposed exploration activities, the EIA (Scoping) process being followed, possible environmental impacts and means of providing input to the EIA (Scoping) process.	July-September 2021	• Appendix B: Background Information Document • Appendix C2: Emails Correspondences.
Site notices	Site Notices were placed at the Khomas Regional council, Rehoboth Town Council, Gobabis Town Council. See reference to Appendices for photos.	July-August 2021	• Appendix C3: Site notices and Newspaper adverts • Appendix C4: Photos to placed Site notices.
Newspaper Advertisements	Block advertisements were placed as follows: • New Era (10 March 2021);	March 2021	• Appendix C5: Newspaper

TASK	DESCRIPTION	DATE	References in Main report
	• The Namibian Sun (24 March 2021);		Advertisement Tear Sheet
Focus Group Meetings and submission of comments			
Focus group meeting and the Submission of Comments	This is a part of the EIA process. The Main report shall include all issues raised from various stakeholders. A report will also be shared to the various stakeholders for their records.	• Appendix C6	
Stakeholders Engagement Comments Responses		• Appendix D: Stakeholders Engagement Comments and Responses	
MEFT review of Scoping Report and EMP	A copy of the final Scoping Report, including authority and IAP review comments, will be delivered to the competent Authority (MME) on completion of the public review process, for review and then MME is to forward report to MEFT for decision.	September 2021	

3 ENVIRONMENTAL AND SOCIAL LEGISLATIVE REQUIREMENTS

3.1 NAMIBIAN LEGAL FRAMEWORK

The relevant Namibia legislation, with regards to environmental aspects, that will be required during the EIA process is detailed as follows.

3.1.1 The Constitution of the Republic of Namibia

The Constitution of the Republic of Namibia (1990) provides the set of foundational principles according to which Namibia is governed. Article 95 (L) of the Constitution commits the state to promote sustainable development by "*maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians both present and future…"*.

The constitutional recognition of environmental concerns triggered widespread legislative reform relating to the management of natural resources in Namibia. The country's environmental protection effort is currently comprised of the Environmental Management Act (7 of 2007) and its Regulations (2012).

3.1.2 Namibia's Environmental Impact Assessment Policy

The Environmental Impact Assessment (EIA) Policy of 1995 promotes accountability and informed decision making through the requirement of EIAs for listed programmes and projects (activities). The EIA Policy is currently enforced through the Environmental Management Act (No. 7 of 2007 (EMA)) and the EIA Regulations of 6 February 2012.

3.1.3 Environmental Management Act

The EMA was promulgated in December 2007 and came into effect on 6 February 2012. Part 1 of the EMA describes the various rights and obligations that pertain to citizens and the Government. The main objectives of the Act are to ensure that:

- Significant effects of activities on the environment are considered carefully and timeously;
- There are opportunities for timeous participation by I&APs throughout the assessment process; and
- Findings are taken into account before any decision is made in respect of activities.

Part 2 of the EMA sets out a number of principles of environmental management which give effect to the provisions of the Constitution for integrated environmental management. Decision-makers must take these principles into account when deciding whether or not to approve a proposed project. In terms of this legal framework certain identified activities may not commence without an environmental clearance (or amendment thereto) that is issued by MEFT.

3.1.4 EIA Regulations

The EIA Regulations, promulgated on 6 February 2012 in terms of Section 56 of the Environmental Management Act, 2007 provides for the control of certain listed activities. These listed activities are provided in GN No. 29 and are prohibited until an ECC has been obtained from MEFT. Such ECCs, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations. GN No. 30 sets out the procedures and documentation that need to be complied with in undertaking an EIA process. Listed activities applicable to the proposed Project are presented in Section 1.3.1 dards will be considered and is summarized in **Error! Reference source not found.**:

3.1.5 Other relevant Namibian legislation

Table 3-2 below provides a summary of other relevant environmental and social legislation that may be applicable to the project.

Table 3-1: Other relevant Environmental and social legislation relevant to the project

YEAR	NAME	Natural Resource Use (energy & water)	Emissions to air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health
1990	The Constitution of the Republic of Namibia of 1990	X	X	X	X	X	X	X	X	X	X	X	X	X
1997	Namibian Water Corporation Act, 12 of 1997	X											X	
1992	The Minerals (Prospecting and Mining) Act 33 of 1992	X	X	X	X					X				
2001	The Forestry Act 12 of 2001	X							X	X				
2013	Water Resources Management Act 11 of 2013	X			X								X	
2004	National Heritage Act 27 of 2004										X			X
2007	Environmental Management, Act 7 of 2007	X	X	X	X	X	X	X	X	X	X		X	X

YEAR	NAME	Natural Resource Use (energy & water)	Emissions to air (fumes, dust & odours)	Emissions to land (non-hazardous & hazardous	Emissions to water (industrial & domestic)	Noise (remote only)	Visual	Vibrations	Impact on Land use	Impact on biodiversity	Impact on Archeology	Emergency situations	Socio-economic	Safety & Health
2012	Regulations promulgated in terms of the Environmental Management, Act 7 of 2007													
1975	Nature Conservation Ordinance 14 of 1975	X			X					X	X			
1976	Atmospheric Pollution Prevention Ordinance 11 of 1976		X											
1995	Namibia's Environmental Assessment Policy for Sustainable Development and Environmental Conservation	X	X	X	X	X	X	X	X	X	X	X		X

4 DESCRIPTION OF THE PROPOSED EXPLORATION ACTIVITES

4.1 EXPLORATION METHODOLOGY OVERVIEW FOR ALL EPLS (7795-7800)

The proposed exploration approach on EPLs 7795 - 7800 will be structured into three (3) phases and the activities and results of each phase will inform the activities to be undertaken in the following phase until there is sufficient justification for an exploratory drilling program. These tests are mutually exclusive and working in conjunction with each other to increase the success rate. The critical first phase of the program is thorough, and cost-effective enabling a more exhaustive exploration than with traditional techniques with less environmental impact.

The description below relating to the proposed exploration activities applies to all the EPLS and will be implemented accordingly on targeted areas withing the EPLs. The Exploration Prospecting Licences are valid for three years its during this period that the activities will be undertaken as follows:

Phase 1: Year 1 Reconnaissance including Geological Mapping and landowners engagement

- **Geological Mapping and Google Earth Tool**: Conduct detailed mapping campaign and digitization of mapping data and creation of detailed GIS database from initial regional datasets and consolidate database and design geochemical sampling grid (time frame is subject to ease of obtaining farm access permissions).
- **Exploration Planning and Landowners Engangement**: an exploration implementation programme will be developed and discussed with the identified landowners on targeted areas in the EPLs for all EPLs. It is also at this stage that land access agreements will be spearheaded by Mangrove and Hiveluah Consult with the respective land owners.
- **Ground Geophysical Surveys**: The collection of information of the substrata with magnetic and electromagnetic (AMT & IP) surveys to detect any mineralisation in the area.
    - Regional Gravity Surveys
    - National Radiometric Survey
    - Regional Aeromagnetic Survey
    - Existing geological data

Phase 2: Year 2 Geochemical Sampling Campaign and Sample analysis

- **Geochemical Sampling and sample analysis**: Samples of soil and rock are collected and sent for geochemical trace element analysis to determine if sufficient quantities of a base or precious metal or industrial mineral are present. These analyses are conducted by analytical chemistry laboratories.

Phase 3: Year 3 Exploration drilling program including Rehabilitation

- **Drilling**:

- Core drilling of pilot holes, sample analysis and downhole logging;
- Infill- drilling campaign at higher resoulution
- Ore Body Modelling
- Pre-feasibility study

- **Rehabilitation;**
  - All sites EPLs (7795-7800) will be rehabilitated as per requirements in the Environmental Management Plan (EMP) and shall engange the various landowners on completion.

4.1.1.1 Phase 1: Reconnaisance (Geological Mapping and landowners engangement)

4.1.1.2 *Geological Mapping*

Geological mapping as detailed above includes the review of geological maps of the area and updating it where relevant, should any further information be obtained. At the early stage of mapping, targeted areas will be identified and engagement with the respective landowners will be initiated.

4.1.1.3 *Google Earth Tool*

Due to its ubiquity, this tool is often overlooked, however it is a free tool that enables surface anomalies, changes in vegetation and geological structure to be found. It will also be used to visualise data such as geochemical and radiometric results. Hiveluah's lead consultant Garneth Shamaila is an experienced developer of geospatial systems and is expert at integrating this type of data into Google Earth. **Google Earth will also be used as a tool flag any potential significant risk area assessed in the EIA process and or later raised by the landowners.**

4.1.1.4 *Exploration programme and Landowners engangement (all EPLs)*

Prior to any exploration activities a communication engangement stratergy will be developed to ensure land access consents and access agreements are discussed and negotiated with the landowners in targeted areas for exploration activities on the EPLs areas. The Exploration project implementation planning will be discussed thoroughly at this stage.

4.1.1.5 *Ground Geophysical Surveys*

Geophysical surveys are conducted in order to ascertain the mineralisation of a given area. There will be a survey conducted by air and/or ground through sensors such as radar, magnetic and electromagnetic.

When air surveys are conducted, sensors will be mounted to an aircraft, which flies over the target area. These surveys are contracted out to companies specialising in aerogeophysical surveys.

Ground geophysical surveys would be carried out using sensors mounted on vehicles or carried by staff.

The ground geophysical surveys involve the following activities:

- Two to six people will be required to conduct the survey, depending on the type of survey to be conducted.
- Depending on the size of the area to be surveyed, surveyors can cover anywhere from 1km to 10km (along a transect line).
- Surveys will be conducted in early project stages and take approximately 3 to 4 months to complete.

4.1.1.6 *Regional Airborne Geophysics*

The Ministry of Mines and Energy is responsible for all aspects of airborne geophysical surveys to promote mineral exploration with the aim of identifying potential new mine targets (MME 2021). The most important parameters measured are conductivity, magnetic susceptibility, rock density, radioactive element concentration, and reflectance spectra. In addition to the Regional Airborne magnetic data set, a national programme of high-resolution magnetics and radiometrics has been completed, and other airborne surveys undertaken in recent years include electromagnetics, hyperspectral scanning and gravity (MME 2021). This type of datasets has been intercepted by Mangrove and Hiveluah Consult and advised the Exclusive Prospecting Licensing Application with the MME for granting of Base and Rare Metals, Industrial Minerals, Non-Nuclear Fuel Minerals, Nuclear Fuel Minerals and Precious Metals exploration activities on the EPLs.

4.1.1.7 *Regional Aeromagnetic Survey*

Regional aeromagnetic surveys have already been purchased and will be interpreted during the exploration programme as detailed above. This exercise is of paramount importance to the success of the envisaged exploration programme. The country rock in the Nama Group was defined by “total magnetic field intensity” signatures of 32 500nT. Raw aeromagnetic field data were collected at 1km flight line intervals at a flight height of 100m above surface. The elroctromagnetic readings collected from the airborne survey by NAMCOR are presented in figure 4-1 below.

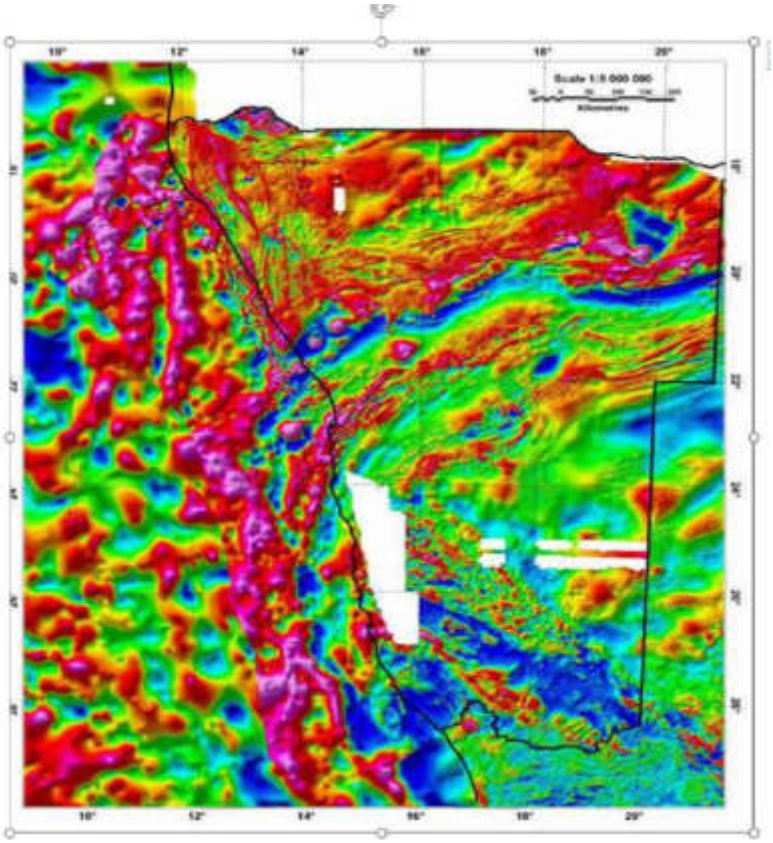


Figure 0-1: Electromagnetic readings from Airborne Survey (NAMCOR 1993)

4.1.2 Phase 2: Geochemical Sampling and sample analysis

4.1.2.1 *Geochemical sampling*

This is arguably one of the best and cheapest pre-drilling activities. A minimum of 600 samples i.e., grab, soil and stream sediment will be collected at a yet to be determined sampling interval. Note that while this is inexpensive, it is an extremely time-consuming process and sampling is guided by success or failure of other aspects of the exploration program.

4.1.2.2 *Soil and rock sampling*

With guidance from the geological mapping, samples of soil or rock are collected, and sent for geochemical major and trace element analysis to determine if sufficient quantities of a base or precious metal or industrial mineral are present. These analyses are conducted by analytical chemistry laboratories.

4.1.2.3 *Pitting and trenching*

This method will be implemented where necessary and mitgatory actions implemented. The various landowners will be required to assist with localized human resources from the farms where necessary to assist with the pitting and trenching.

Pitting and trenching involves the mechanical or manual digging of small-scale pits and trenches in order to provide a soil profile and a representative sample of the mineralisation. With regard to the activities on the EPLs, pitting will only occur should results come back positive for mineralisation. It is anticipated that the average pit will be approximately "5m x 5m and 3m deep".

Trenching is similar to pitting, except a trench will show a latitudinal profile across a longer horizontal access, it is designed to follow an ore body across the landscape. The expected average size of a trench is approximately "30m x 1m and 2m deep".

All open pits and trenches will be backfilled immediately after sampling this will be undertaken in one day exercise. Where this is not possible, temporary fencing will be erected around the pits/trenches.

4.1.3 Phase 3: Exploration Drilling Campaign

4.1.3.1 *Exploration Drilling*

As detailed above, the exploration approach will be structured into phases and the activities and results of each phase will inform the activities to be undertaken in the following phase until there is sufficient justification for an exploratory drilling program.

Exploration drilling is the process of removing rock samples from an area, where it is suspected there is mineralisation. There are various drilling methods that would be considered including, open percussion drilling, reverse circulation drilling and diamond-core drilling, which will take place on the EPL's.

While an initial drilling programme is developed, they cover a broad area of the EPL. Once sampling results are obtained, the area is narrowed down and holes are drilled closer together in order to obtain a cross-section of the potential ore-body.

A typical drilling pad/area will consist of a drill-rig, an area where the drill core and geological samples can be stored and a storage area for drill equipment, fuel and lubricants. This area is cordoned off and off-limits to those not part of the exploration team. The drilling pad/area is usually cleared and levelled and is approximately 10 m x 10 m. All drill-water will be collected in drill-sumps, which will be managed to prevent overflows.

Reverse Circulation (RC) Drilling/Open percussion drilling:

The drilling mechanism is a pneumatic reciprocating piston known as a "hammer" driving a tungsten-steel drill bit. RC drilling utilises much larger rigs and machinery and depths of up to 500m are routinely achieved.

RC drilling ideally produces dry rock chips, as large air compressors dry the rock out ahead of the advancing drill bit. RC drilling is slower and costlier but achieves better penetration; it is also less costly than diamond coring.

Open percussion drilling differs in that air is blown directly down the drill-hole in order to return rock samples to the surface.

Diamond-core Drilling:

Diamond core drilling uses an annular diamond-impregnated drill bit attached to the end of hollow drill rods to cut a cylindrical core of solid rock. Holes within the bit allow water to be delivered to the cutting face. This provides three essential functions — lubrication, cooling, and removal of drill cuttings from the hole. Diamond drilling is much slower than reverse circulation (RC) drilling due to the hardness of the ground being drilled. Drilling of 1200 to 1800 metres is common and at these depths, ground is mainly hard rock.

Diamond rigs can also be part of a multi-combination rig. Multi-combination rigs are a dual setup rig capable of operating in either a reverse circulation (RC) and diamond drilling role (though not at the same time). This is a common scenario where exploration drilling is being performed in a very isolated location. The rig is first set up to drill as an RC rig and once the desired metres are drilled, the rig is set up for diamond drilling. This way the deeper metres of the hole can be drilled without moving the rig and waiting for a diamond rig to set up on the pad.

Samples taken during drilling and trenching will be sent away for analysis, specifically to determine the mineral composition and the level of base metals, namely copper, zinc and lead within the samples. Samples are taken during drilling by either the geologists or geological assistants and can be in either rock, soil or drill core form.

4.2 REHABILITATION

Once the proposed exploration has been concluded, the impacted sites will be rehabilitated in accordance with the requirements of the EMP.

4.3 MACHINERY/VEHICLES

The following machinery/vehicles will be utilized in the drilling program for all EPLs

- 1 TLB
- 2-3 Drill Rigs
- 2-3 Support Trucks

- 2-3 4x4 Vehicles

4.4 PERSONNEL FOR ALL EPLS

It is anticipated that the following personnel will be employed to carry out the above-mentioned activities:

- 2 Geologists
- 1 Geo-Technician
- 3 Semi-skilled/un-skilled workers
- 12 Drill Crew

Where possible, the exploration and drilling teams will be housed in accommodation located on or near the EPL areas. In remote areas; a camp site will be established to accommodate the team. (The camp site will consist of tents, caravans, make-shift buildings and ablution facilities.)

4.4.1 Waste Management

The following types of waste will be generated during the exploration activities, in small volumes:

- Domestic waste (non-hazardous)

Domestic waste will be stored in a manner that there can be no discharge of contamination to the environment and disposed of correctly.

Potential hydrocarbon spills from vehicles and drilling equipment might lead to soil contamination and needs to be treated as a hazardous waste if not bio-remediated.

4.4.2 Sanitation

In areas where ablution facilities are located in close proximity, and with consent from the Traditional Authority, personnel will use the existing facilities. Should activities be conducted in remote locations, an appropriate toilet facility will be made available for the use of personnel. Due to health and safety concerns, personnel may not relieve themselves in the surrounding bush.

4.4.3 Water supply

Water will be required for some drilling (diamond-core drilling) and for dust suppression. Water can be supplied through existing boreholes (with the permission of the local residents and Traditional Authority); new boreholes created by Mangrove and Hiveluah specifically for exploration activities (permits required);

or trucked in from the nearest municipality. While it would be more efficient to utilise existing boreholes on the property/ farms, this would depend on the agreement reached with each landowner and or Traditional Authority.

4.4.4 Power supply

The various machinery and equipment required for drilling have their own power supplies and or generators attached. Fuel (diesel) will be stored in small mobile bowsers. The drill rigs will be re-fuelled with Jerry cans.

4.4.5 Access routes

As far as is practicable, no new roads or tracks will be developed. Access routes to the target sites will be identified and demarcated prior to the commencement of drilling. Motorised access will be limited to existing tracks where possible and defined operational areas. Should additional access roads be required, the routes will be determined and agreed upon with the land owners prior to the commencement of exploration activities.

MARVIN
ENVIRONMENTAL PROJECT
CONSULTANTS CC
Experts in Sustainable Development

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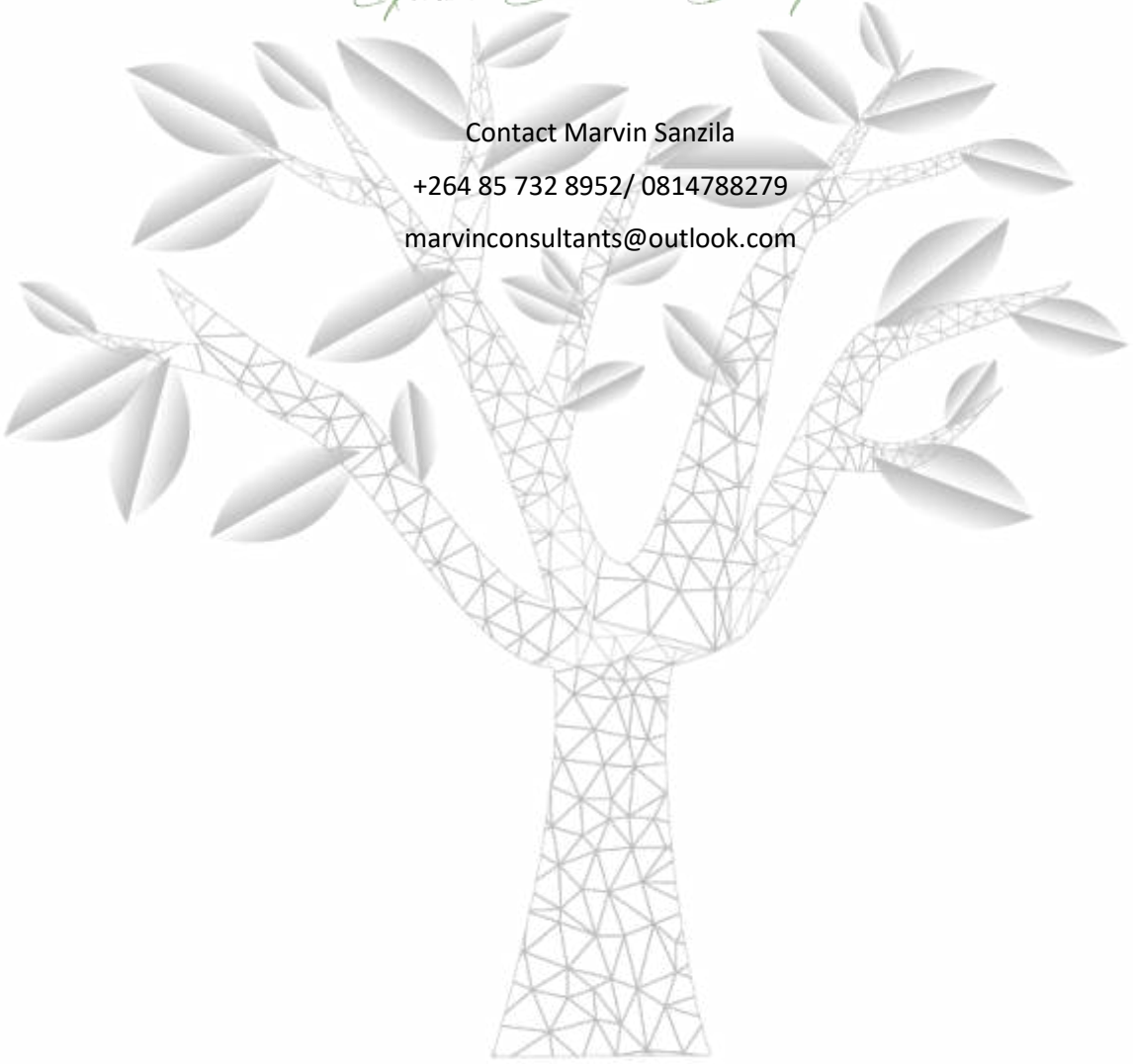

Appendix C: Newspaper Advertisement

PUBLIC NOTICE

APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATES (ECCs) BY Mangrove (PTY) LTD FOR PROPOSED MINERALS PROSPECTING IN THE EXCLUSIVE PROSPECTING LICENSES (EPLs) Nos. 7795, 7796, 7797, 7798, 7799 and 7800 IN KHOMAS, OMAHEKE, HARDAP AND //KARAS REGIONS

Mangrove (Pty) Ltd (the "Proponent") holds mineral rights under the Exclusive Prospecting Licenses (EPLs) Nos. 7795, 7796, 7797, 7796, 7799 and 7800 for base and rare metals, industrial minerals, non-nuclear fuel minerals, nuclear fuel minerals and precious metals. The EPLs were granted on the 16th of September 2020 and will expire on the 15th September 2023. The Proponent intends to conduct a three-phase exploration/prospecting program starting with desktop studies which shall entail a full review and compilation of existing local and regional geological, geophysical and environmental data sets for the development of a geological library of the area. This shall include the processing of the data and the mapping and delineation of geological structures and depositional areas. If these activities prove to be positive, the proponent will then employ detailed geological and geophysical studies which shall lead into more detailed delineation mapping, geophysical surveys, trenching, drilling, and sampling for laboratory tests.

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, the Proponent is in the process of preparing Environmental Assessment and Management Reports to support the application for ECC. All Interested and Affected Parties (I&AP) are hereby invited to register and submit written comments / objections / inputs with respect to the proposed prospecting activities. A Background Information Document (BID) is available on request upon registration.

REGISTER BY EMAIL: robert@metprosol.com and for more information

Please Contact: Robert Mwanachilenga
CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS:
FROM Tuesday March 9th to Tuesday March 30th 2021

NEW ERA NEWSPAPER
WEDNESDAY 10 MARCH 2021

Dated at Windhoek on this 15th day of December2020
FISHER, QUARMBY & PFEIFER
LEGAL PRACTITIONER FOR PLAINTIFF
Cnr. of Robert Mugabe & Thorer Streets
Entrance on Burg Street
P O Box 37
WINDHOEK
GMcC/JVZ/S5013

DM0202100379792

676, Abenab District, Otjozondjupa Region.
Date of death: 30 September 2020.
Name and (only one) address of executor or author issued agent:
FA PRETORIUS & CO
PO Box 31
Tsumeb
Namibia
Tel: 067-222008

DM0202100379822

PUBLIC NOTICE

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REGISTER BY EMAIL: robert@metprosol.com and for more information Please Contact: Robert Mwanachilenga
CONSULTATION DURATION AND DEADLINE FOR WRITTEN SUBMISSIONS IS:
FROM Tuesday March 9th to Tuesday March 30th 2021

DM0202100379888

The Namibian Sun 24/03/2021

Appendix D: List of Species

Appendix D: List of Flora and Fauna on EPLs 7795-7800

Table 1: List of Grasses on EPLs 7795- 7800

Species name	**Probability to occur**		**Conservation status**
	EPL 7795/7800	**EPL 7796, 7799, 7798 and 7797**	
Brachiaria nigropedata	Most likely	Not likely	Not evaluated
Pogonarthria fleckii	Most likely	Not likely	Not evaluated
Pogonarthria squarrosa	Most likely	Not likely	Not evaluated
Aristida adscensionis	Most likely	Not likely	Not evaluated
Aristida stipitata	Most likely	Not likely	Not evaluated
Enneapogon desvauxii	Most likely	Not likely	Not evaluated
Eragrostis truncata	Likely	Not likely	Not evaluated
Pennisetum foermeranum	Likely	Not likely	Not evaluated
Schmidtia kalahariensis	Most likely	Most likely	Not evaluated
Schmidtia pappophoroides	Most likely	Most likely	Not evaluted
Setaria verticillata	Most likely	Not likely	Widespread beyond Africa. Not evaluated
Aristida effusa	Most likely	Not likely	Not evaluated
Aristida meridionalis	Likely	Not likely	Not evaluated
Aristida stipoides	Most likely	Not likely	Not Evaluated
Cymbopogon caesius	Not likely	Most likely	
Eragrostis annulata	Most likely	Not likely	Least concern
Eragrostis bicolor	Most likely	Most likely	Least concern
Eragrostis biflora	Most likely	Most likely	Least concern
Eragrostis echinochloidea	Most likely	Most likely	Not evaluated
Eragrostis legmanniana	Most likely	Most likely	Not evaluated
Eragrostis omahekensis	Most likely	Not likely	Not evaluated
Eragrostis pallens	Most likely	Most likely	Not evaluated
Eragrostis porosa	Most likely	Not likely	Least concern
Eragrostis rotifer	Most likely	Not likely	Not evaluated
Eragrostis trichophora	Most likely	Not likely	Least concern
Melinnis repens	Most likely	Not likely	Not evaluated

Panicum lanipes	Most likely	Not likely	Widespread. Least concern
Stipagrostis hirtigluma	Most likely	Not likely	Widespread. Not evaluated
Stipagrostis namaquensis	Not likely	Most likely	Widespread. Not evaluated
Stipagrostis obtusa	Most likely	Not likely	Not evaluated
Stipagrostis uniplumis	Most likely	Most likely	Not evaluated
Trecholaena monachne	Most likely	Most likely	Not evaluated
Triraphis purpurea	Most likely	Most likely	Widespread. Not evaluated

Table 2: Schrubs and Trees on EPLs 7795- 7800

Species name	**Probability to occur**		**Conservation status**
	EPL 7795/7800	**EPL 7796, 7799, 7798 and 7797**	
Acacia ataxacantha	Not likely	Most likely to occur	Endemic to sub-Saharan Africa, least concern.
Xeric Kalahari	Not likely	Most likely to occur	Endemic.
Acacia erioloba	Most likely to occur	Most likely to occur	Southwestern African endemic, Least Concern.
Prosopis sp.	Most likely to occur	Most likely to occur	Alien, least concern.
Boscia albitrunca	Most likely	Most likely	Southwestern African endemic. Least concern.
Acacia erioloba	Most likely	Most likely	Southwestern African endemic. Least concern.
Acacia fleckii	Most likely	Mostly likely	Southwestern African endemic. Least concern
Acacia hebeclada	Most likely	Most likely	Southwestern African endemic. Least concern.
Acacia luedetitzii	Most likely	Most likely	Not evaluated
Acacia mellifera	Most likely	Most likely	Endemic to South and East Africa. Least concern.
Dichrostachys cinerea	Most likely	Most likely	Endemic to Sub-Saharan Africa. Least concern.
Elephantorrhiza elephantina	Most likely	Most likely	Endemic to Southern Africa. Not evaluated.
Bauhinia petersiana	Most likely	Most likely	Endemic to South and East Africa. Least concern.
Searsia tenuinervis	Most likely	Most likely	Endemic to South and East Africa. Least concern.
Ziziphus mucronata	Most likely	Most likely	Not Evaluated.

Grewia flava	Most likely	Most likely	Southwestern African endemic. Least concern.
Grewia retinervis	Most likely	Most likely	Southern Africa. Least concern.
Lycium bosciifolium	Most likely	Most likely	Endemic Southwestern African endemic. Least concern.
Catophractes alexandri	Most likely	Most likely	Endemic to Southern Africa. Least concern.
Tarchonanthus camphoratus	Most likely	Most likely	Endemic to South and East Africa. Least concern.

Table 3: List of Reptiles

Species name	**Probability to occur**		**Conservation status**
	EPL 7795/7800	**EPL 7796, 7799, 7798 and 7797**	
Rhinotyphlops schlegelii	Not likely	Not likely	Indigenous, endemic to south and east Africa, not evaluated.
Typhlosaurus gariepensis	Not likely	Most likely	Endemic.
Chamaeleo dilepis	Most likely	Most likely	Least concern.
Bitis arietans	Most likely	Most likely	Not evaluated.
Bitis caudalis	Most likely	Most likely	Not evaluated.
Aspidelaps scutatus	Most likely	Most likely	Not evaluated.
Atractaspis bibronii	Most likely	Most likely	Endemic to South and East Africa. Not evaluated.
Psammophis trinasalis	Most likely	Most likely	Not evaluated.
Amblyodipsas ventrimaculata	Not likely	Not likely	Least concern.
Xenocalamus bicolor	Most likely	Most likely	Not evaluated.
Python natalensis	Most likely	Most likely	Not evaluated.
Lamprophis capensis	Most likely	Most likely	Not evaluated.
Pseudaspis cana	Most likely	Most likely	Least concern.
Prosymna bivittata	Most likely	Most likely	Least concern.
Dasypeltis scabra	Most likely	Most likely	Least concern.
Rhinotyphlops boylei	Most likely	Most likely	Not evaluated.
Rhinotyphlops schinzi	Most likely	Most likely	Least concern.
Leptotyphlops scutifrons	Most likely	Most likely	Not evaluated.
Acontias percivali	Most likely	Most likely	Not evaluated.
Lygosoma sundevallii	Most likely	Most likely	Not evaluated.

Mabuya capensis	Most likely	Most likely	Not evaluated.
Mabuya accidentalis	Most likely	Most likely	Not evaluated.
Mabuya spilogaster	Most likely	Most likely	Not evaluated.
Mabuya variegata	Most likely	Most likely	Not evaluated.
Heliobolus luggubris	Most likely	Most likely	Not evaluated.
Ichnotropis squamulosa	Most likely	Most likely	Least concern.
Pedioplanis lineoocellata	Most likely	Most likely	Not evaluated.
Pedioplanis namaquensis	Most likely	Most likely	Not evaluated.
Pedioplanus lineoocellata	Most likely	Most likely	Not evaluated.
Gerrhosaurus flavigularus	Not likely	Most likely	Not evaluated.
Lygodactylus bradfieldi	Most likely	Not likely	Southwestern African endemic. Not evaluated.
Pachydactylus capensis	Most likely	Most likely	Southwestern African endemic. Not evaluated.
Pachydactylus turneri	Most likely	Most likely	Endemic to South and East Africa. Not evaluated.
Ptenopus garrulus	Most likely	Most likely	Southwestern African endemic. Least concern.

Table 4: Shrubs and Trees on EPLs 7795- 7800

Species name	**Probability to occur**		**Conservation status**
	EPL 7795/7800	**EPL 7796, 7799, 7798 and 7797**	
Xenopus laevis	Most likely	Most likely	Not threatened.
Cacosternum boettgeri	Most likely	Most likely	Not threatened.
Pyxicephalus adspersus	Most likely	Most likely	Near threatened.
Tomopterna cryptotis	Most likely	Most likely	Not threatened.
Tomopterna krugerensis	Most likely	Most likely	Not threatened.
Tomopterna tandyi	Most likely	Most likely	Not threatened.

Table 5: List of potential fauna on EPLs 7795-7800

Species name	**Probability to occur**		**Conservation status**
	EPL 7795/7800	EPL 7796, 7799, 7798 and 7797	
Bubulcus ibis	Most likely	Most likely	Widespread beyond Africa. Least concern.

Leptoptilos crumeniferus	Most likely	Most likely	Endemic to Subsaharan Africa. Least concern.
Ciconia abdimii	Most likely	Most likely	Endemic to Subsaharan Africa. Least concern.
Ciconia nigra	Most likely	Most likely	Widespread beyond Africa. Least concern.
Scopus umbretta	Most likely	Most likely	Endemic to Subsaharan Africa. Least concern.
Charadrius tricollaris	Most likely	Most likely	Endemic to Subsaharan Africa. Least concern.
Charadrius hiaticula	Most likely	Most likey	Widespread beyond Africa. Least concern.
Calidris ruficollis	Most likely	Most likely	Widespread beyond Africa. Near threatened.
Calidris minuta	Most likely	Most likely	Widespread beyond Africa. Least concern.
Actitis hypoleucos	Most likely	Most likely	Widespread beyond Africa. Least concern.
Tringa glareola	Most likely	Most likely	Widespread beyond Africa. Least concern.
Vanellus coronatus	Most likely	Most likely	Endemic to South and East Africa. Least concern
Vanellus armatus	Most likely	Most likely	Endemic to South and East Africa. Least concern
Recurvirostra avosetta	Most likely	Most likely	Widespread beyond Africa. Least concern.
Burhinus capensis	Most likely	Most likely	Endemic to Sub-Saharan Africa. Least concern.
Rhinoptilus africanus	Most likely	Most likely	Endemic to Afro-arid. Least concern.

Table 5: List of insects on EPLs 7795-7800

Species name	**Probability to occur**		**Conservation status**
	EPL 7795/7800	**EPL 7796, 7799, 7798 and 7797**	
Formicidae	Likely	Most likely	Not evaluated
Other Hymenoptera	Likely	Most likely	Not threatened
Diptera	Likely	Most likely	Not evaluated
Isoptera	Likely	Most likely	Not evaluated
Tenebrionidae	Likely	Most likely	Not evaluated
Other Coleoptera	Likely	Most likely	Not evaluated
Blattodea	Likely	Most likely	Not evaluated
Heteroptera	Likely	Most likely	Not evaluated
Homoptera	Likely	Most likely	Not evaluated
Lepidoptera	Likely	Most likely	Not evaluated
Orthoptera	Likely	Most likely	Not evaluated
Araneae	Likely	Most likely	Not evaluated
Ixodida	Likely	Most likely	Not evaluated

Appendix E: CVs

CURRICULUM VITAE

MARVIN NM SANZILA

ENVIRONMENTAL CONSULTANT

Environmental Management Systems, Impact Assessments, Permitting and Compliance.

Ph: +264 81 4788279

Email: marvinconsultants@outlook.com

- Qualifications

BSc	2007	Natural Resources
Cert	2014	Understanding and Auditing ISO 14001
Cert	2015	New Managers Development Programme

- **EXPERTISE**

- Environmental Assessments and Project Management
- ISO 14001: Environmental Management Systems; EMPs: Implementation and Coordination
- Environmental Auditing
- Stakeholders Consultation
- Film presenter and narrator: https://vimeo.com/116761669 and https://vimeo.com/110487124

Marvin Sanzila joined SLR Environmental Consulting (Pty) Ltd in March 2016 as an Environmental Assessments Practitioner and currently serves as a board member of the Environmental Assessment Professionals of Namibia (EAPAN). Prior to this venture, Marvin successfully implemented the Langer Heinrich Uranium's Environmental Management System (ISO 14001) for 5 years, ensuring compliance across the business sector and retention of the project's license to operate.

Marvin has assisted various consultants for 5 years in conducting Environmental Impact Assessments (EIAs) for project appraisals with the regulating authorities. All projects experience related to EIAs have been successfully awarded Environmental Clearance Certificates (ECCs) by the regulating authority and are operational, enhancing both local and international business sector while implementing best practice environmental and social management tools.

Apart from Project Management and Environmental Assessments, Marvin has presented and narrated two films, one that emphasizes the role of the environmental Management Act no.7 of 2007 in the modern-day Namibian development context and the other that looks at Namibia's Wetlands and its potential for ecotourism. His diverse capabilities, skills and knowledge and growing passion for environmental management allows an opportunity for a dynamic Environmental Team.

- **PROJECTS**

Marvin established Marvin Environmental Project Consultants CC in 2018 with the aim to bring forward a reputable technical team of expertise established over 9 years of working experience, affiliation and association in an Environmental and Project Management sector.

Reconnaissance Energy Namibia (Pty) Ltd	Role: EIA Scoping Phase- Stakeholders Engagement Coordination Environmental Scoping Process to support the application for Environmental Clearance Certificate (ECC) for the proposed 2D Seismic Survey (Oil and Gas Exploration) covering the Area of Interest (AOI) In Petroleum Exploration Licence (PEL) No. 73, Kavango Basin, Kavango West And East Regions, Northern Namibia

Reconnaissance Energy Namibia (Pty) Ltd	Role: Environment Social and Governance Support Services Petroleum (Oil and Gas Exploration) (PEL) No. 73, Kavango Basin, Kavango West and East Regions, Northern Namibia
Votorantim Metals Namibia (Pty) Ltd	Role: EIA Practitioner (Project Manager) EIA Process for proposed Exploration and prospecting for base metals (particularly Copper, Zinc and Lead) and rare metals, industrial minerals and precious metals on EPLs 7963, 7973 and 8050 in Rehoboth, Hardap Regions
Skeleton Coast Trawling (Pty) Ltd - Novanam	Role: EIA Practitioner (Project Manager) EIA process for the proposed Upgrade of the existing sea water treatment activities for cleaning purposes including the installation of a desalination plant at the Novanam fish factory in Lüderitz (Karas Region)
NAMISUN and Reptile Mineral Resources and Exploration (Pty) Ltd.	Role: EIA Scoping Phase Coordination Proposed Tumas Project (Uranium mining project) and associated infrastructure in the Erongo region of Namibia
NAMISUN and Lodestone Namibia (Pty) Ltd.	Role: EIA Scoping Phase Coordination Environmental Impact Assessment Amendment For Lodestone's Dordabis Iron Ore Mining Project And Associated Infrastructure.
Wolf Briquettes CC	Role: EIA Practitioner (Project Manager) EIA Process for Wolf Briquettes processing activities in Usakos, Erongo Region
Alten Renewable Energy Group (Alten) Environmental and Social Management Support for the proposed construction and operation of the 37 MW Solar Power Plant in Mariental, Namibia (2018-2020)	Role: Environmental and Social Management Support Manager (Construction and Operational Phase). Successfully managed the implementation of the Environmental and Social Management System during the construction and operation of a 37 MW Solar Power plant in Mariental. During the construction phase of the project, the Environmental and Social Management Plans (ESMPs) required their implementation in compliance to **International Finance Corporation (IFC), Equator Principles (EPS) and the Namibian Regulations.**
NAMWATER Environmental and social screening: Feasibility study for a desalination plant and water carriage system to secure water supply to central coast, Windhoek and en-route users (2019-2021)	Role: Environmental Impact Assessment Practitioner (Project Management Assistant) (**Project On-going**). The Feasibility Study is financed through the Government of the Federal Republic of Germany, KfW Development Bank. Namibia Water Corporation Ltd. (NamWater) has been assigned by the Ministry of Agriculture Water and Forestry (MAWF), as the Project Executing Agency, to undertake a feasibility study for the development of a Desalination Plant and Water Carriage System, to secure water supply to the central coastal area of Namibia; Windhoek; as well as en-route users (i.e. towns). SLR (including Marvin) and the Council for Scientific and Industrial Research (CSIR) (South Africa) were jointly appointed by the Project Management Team to undertake the Environmental Screening Study as input into to the overall Feasibility Study.

GALP Proposed offshore Exploration Well drilling in PEL 82 & 83, Orange Basin, Namibia. EIA Report and Environmental & Social Management Plan (ESMP), (2019)	Role: Project Assistant: Environmental Practitioner. EIA process for the proposed offshore Exploration Well drilling in PEL 82 & 83, in the Orange Basin, Namibia. The outcome of the project required the compilation of an EIA Report including the Environmental & Social Management Plan (ESMP). **Environmental Clearance Certificate (ECC) was successfully issued for the project.**
Shell Namibia Upstream B.V. EIA for proposed Deep Water Exploration Well Drilling in Petroleum Exploration Licence 39 (blocks 2913a and 2914b) off the coast of Southern Namibia (2017)	Role: Project Assistant: Environmental Practitioner. Project Assistant (Environmental Practitioner) for the Public Consultation Process (including Focus Group Meetings) of the EIA process, correspondence with Client and overall EIA Project Management. Shell Namibia Upstream BV holds PEL 39, which is located adjacent to the southernmost Namibian offshore border with South Africa. Shell is proposed to drill one or possibly two exploration wells in the northern portion of the licence area. **ECC was successfully issued through the regulating authority for the project.**
Swakop Uranium PTY (LTD) Environmental Impact Assessment process for the proposed Husab mine on-site 12 MW (Phase 1) (2019).	Role: Environmental Impact Assessment Practitioner and Project Manager Swakop Uranium PTY (LTD) has partnered with CGN Energy International Holdings CO. Limited (CGNEI), a sister Company of Swakop Uranium, to construct and operate a Solar Photovoltaic (PV) Power Plant with a capacity of 12 megawatt (MW) at the Husab Mine to supply power to the processing plant and associated activities. **ECC was successfully issued through the regulating authority for the project.**
European Investment Bank and NamPower: Environmental Impact Assessment (EIA) for the proposed Encroacher Bush Biomass Power Project in Namibia (2019-2020)	Role: Project EIA Management Assistant NamPower has partnered with the European Investment Bank (EIB) proposes to construct and operate a biomass power plant that will generate electricity by the combustion of wood from encroacher bush, growing in the surroundings of the proposed power plant area.
Tschudi Copper Mine: Environmental Audit Report- November 2017- 2020	Role: Environmental Compliance Auditor (**Continues to support the Mine through Environmental compliance audits**) Environmental Audit for the EMP implementation of the Tschudi Mine in Tsumeb, Namibia.
Swakop Uranium PTY (LTD) Scoping report (including impact assessment) for the proposed changes to the Husab mine and linear infrastructure (2018-2019)	Role: Environmental Impact Assessment Practitioner Swakop Uranium PTY (LTD) Swakop proposed further amendments to the currently approved Husab Mine Plan and associated activities, as follows: • Further alterations of the Waste Rock Dump (WRD) design; • The Implementation and operation of an on-site incinerator for the purposes of improved waste management; • Six (6) new mobile communication antenna-poles for mobile communication road coverage along the access road to the mine from the B2 turn off. **ECC was successfully issued through the regulating authority for the project.**

Farm Skakel Environmental Performance Report and Management Plan For Water Abstraction Boreholes (WW10801 & WW10062) On Farm Skakel (2020).	Role: Environmental Impact Assessment Practitioner Environmental Performance Report And Management Plan For Water Abstraction Boreholes (WW10801 & WW10062) On Farm Skakel. **ECC was successfully issued through the regulating authority for the project.**
Farm Burnel Environmental Performance Report and Management Plan for Water Abstraction Boreholes (WW 200285 & WW 37681) on Farm Burnel (2020).	Role: Environmental Impact Assessment Practitioner Environmental Performance Report and Management Plan for Water Abstraction Boreholes (WW 200285 & WW 37681) on Farm Burnel. **ECC was successfully issued through the regulating authority for the project.**
Farm Finsterbergen Environmental Performance Report and Management Plan for Water Abstraction Boreholes on Farm Finsterbergen (2020).	Role: Environmental Impact Assessment Practitioner Environmental Performance Report and Management Plan for Water Abstraction Boreholes on Farm Finsterbergen. **ECC was successfully issued through the regulating authority for the project.**
Swakop Uranium PTY (LTD) Swakop Uranium Internal Scoping Report for the proposed New Raw Water Pond (2017).	Role: Environmental Practitioner for the Scoping (including assessment) process. Swakop Uranium Projects and Processing Departments proposed to construct an additional raw water pond for the storage of Raw water supplied by NamWater. The additional pond is not only required to provide the plant with the required volumes of water, but also to ensure suitable volumes of water being stored during scheduled NamWater maintenance shutdown periods. **ECC was successfully issued through the regulating authority for the project.**
Namibian National Parks Programme Phase IV and V (NamParks IV) Environmental considerations related to development of park management infrastructure in the Tsau //Khaeb national park in the /Karas Region (2017 and 2020)	Role: Environmental Practitioner (Project Manager) NamParks is supported by the Federal Republic of Germany through the Kreditanstalt für Wiederaufbau (KfW) Development Bank. The programme (NamParks) has been implemented into development phases (1 to 5). NamParks Phase 4 (NamParks IV) was focused on parkmanagement infrastructure development in the Tsau //Khaeb (Sperrgebiet) National Park (TKNP) while Phase 5 is focused on the Skeleton National Coast Park, Namib Naukluft Park and Dorob National Park. **ECC was successfully issued through the regulating authority for the NamParks IV. Awaiting ECC for NamParks V.**

Earthmaps CC Scoping Report and EMP for Earthmaps Consulting CC's Exploration Activities on EPLs 6339 and 6340, North-West of Tsumeb in the Oshikoto Region (2017)	Role: Environmental Practitioner (Project Manager) Earthmaps Consulting CC (Earthmaps) founded in 2004, is a local consulting service based in Swakopmund, Erongo Region with vast experience in minerals' exploration and mining in Namibia and across Africa. Earthmaps holds the Exclusive Prospecting Licenses (EPLs) 6339 and 6340, located north-west (NW) of Tsumeb in the Oshikoto Region. Earthmaps required an environmental clearance certificate (ECC) from the Ministry of Environment and Tourism (MET): Department of Environmental Affairs (DEA) to conduct exploration activities in these EPLs. **ECC was successfully issued through the regulating authority for the project.**
Votorantim Metals Namibia (PTY) LTD Scoping Report (including assessment) and EMP for Votorantim Metals Namibia (PTY) LTD's Exploration Activities on EPL 6521, North-West of Otavi in the Otjozondjupa Region (2017)	Role: Environmental Practitioner (Project Manager) for the EIA process of the proposed project activity. Votorantim Metals Namibia (Pty) Ltd (Votorantim) is a wholly owned subsidiary of Votorantim Metais Zinco, a Brazilian mining company, specialising in zinc, lead and copper. Votorantim has successfully obtained an Exclusive Prospecting Licence (EPL) 6521 in the North-western side of Otavi in the Otjozondjupa Region. Votorantim require an environmental clearance certificate (ECC) from the Ministry of Environment and Tourism (MET): Department of Environmental Affairs (DEA) to conduct exploration activities on EPL 6521. **ECC was successfully issued through the regulating authority for the project.**
Namibian National Parks Programme Phase NAMPARKS Phase II Scoping Report for Infrastructure Development: Amendment for the proposed Addition of Entrance Gate, Tourist Reception, Staff Housing at Mudumu. (2016)	Role: Environmental Practitioner An environmental Scoping Report and Environmental Management Plan (EMP) for the infrastructure development in the North-Eastern Parks was completed in March 2008 and the Environmental Clearance Certificate (ECC) subsequently issued in 2008, following the submission to the MET: Department of Environmental Affairs (DEA). Infrastructure provisions for the Mudumu South in the approved Scoping Report only included a Park Entrance gate. It has come to terms that additional infrastructure is required at the Mudumu South. **ECC was successfully issued through the regulating authority for the project.**
ErongoRed EIA for a new 44 kV powerline between Swakopmund reservoir and the Swakop River Plots (2016).	Role: Environmental Practitioner (for the EIA process, including EIA write up, Public Participatory process, review of specialist report and project management). EIA for the proposed upgrading of the 22 kV to 44 kV powerline. A new overhead powerline to be constructed. **ECC was successfully issued through the regulating authority for the project.**
Ministry of Agriculture, Water & Forestry (MAWF) EIA process for the Zone Irrigation Project , North west of Nkurenkuru, Kavango Region (2016, 2018)	Role: Environmental Practitioner (EIA write up, process, review of specialist report and project management) The Ministry of Agriculture, Water & Forestry (MAWF) through the Division of Agricultural Engineering (DAE) intends to develop an Irrigation Project as part of the Government's Green Scheme in the Zone Area located about 30 km northwest of Nkurenkuru in the Western region of Kavango. An EIA process is required for the project to obtain an ECC. **ECC was successfully issued through the regulating authority for the project.**

Namibia Construction PTY Ltd. Scoping (Including Assessment) Report and EMP for Sand Mining project- 20km South West of Okahandja (2016)	Role: Environmental Practitioner Namibia Construction (Pty) Ltd is mining sand in the upper reaches of the Swakop River on Farm Osona 65, 20 km south-west of Okahandja town and 6 km East of Gross Barmen. Namibia Construction has been mining sand from this location in the Swakop River between 2011 to 2014 and resumed in 2015 after the river flow reinstated the river sand in the mined-out areas. An EIA process was required as per EIA regulations and EMA **ECC was successfully issued through the regulating authority for the project.**
Swakop Uranium PTY LTD Scoping Report (including impact assessment) for the proposed amendment to the Husab Mine Linear Infrastructure - 33kV Overhead Powerline at the B2 Vehicle Staging Area (2016)	Environmental Practitioner (for the entire EIA process, including EIA write up, Public Participatory process, review of specialist report and project management. Swakop Uranium proposes to erect a 33 kV overhead power line (±1.25 km in length) from the existing Erongo RED 22kV powerline to their B2 Vehicle staging area next to the B2 main road. And EIA process was required for the issue of the ECC. **ECC was successfully issued through the regulating authority for the project.**
Igneous Mining Environmental Certificate Clearance (ECC) Renewal for small scale mining activities on ML 135 in Sarusus Area, Skeleton Cost Park (2016)	Role: Environmental Practitioner for the ECC Renewal Process Igneous Mining's environmental clearance certificate for ML 135 Small scale mining activities at Sarusus Area in the Skelton Coast Park is due for renewal. It's with this background that the project still intends to keep the Mining lease until such time that the lease lapses. It has come to terms that Igneous Mining needs to apply for a renewal of their ECC. **ECC was successfully issued through the regulating authority for the project.**
Swakop Uranium PTY LTD Swakop Uranium Internal Environmental Scoping Report for the proposed Sub-Economic Material Stockpiling Area (2016)	Role: Environmental Practitioner Swakop Uranium proposes a minor change and/or addition to the approved Husab Mine design plan and infrastructure specific to stockpiling of Sub Economic Material (SEM) with an average ore grade of 113 ppm. The SEM is proposed to be stockpiled on two dedicated "SEM stockpiles", located next to the Waste Rock Dump (WRD) within the perimeters of Pit Zone 1 and Pit Zone 2. An internal screening process was required to assess the impacts associated with the project activity **ECC was successfully issued through the regulating authority for the project.**

Langer-Heinrich Uranium PTY Ltd Environmental Compliance Coordinator (2014-2016)	Role: Environmental Compliance Coordinator The primary purpose of this role is to coordinate the environmental compliance program at Langer Heinrich Uranium (LHU) in order to ensure LHU successfully integrate environmental compliance across the business and retains its licence to operate. • Coordinate and provide support to ensure impact /aspect and risk assessment registers are up to date • EMP implementation • Participate in environmental incident investigations • Training and awareness • Conduct assessment of company activities to ensure compliance with ISO /internal standards and facilitate or coordinate environmental audit programme • Document control • Environmental register • Co-ordination, communication & networking
Langer-Heinrich Uranium PTY Ltd. Environmental Technician (September 2011-2013)	Role: Environmental Technician Roles: • Environmental Aspect and compliance monitoring • Incident management and data entry • EMP Compliance • Site-Contractors compliance to Environmental procedures, Environmental Management Plan, • Compliance to EMS ISO 14001; Environmental Internal Audits and Reports • Contribution to Monthly and Bi-Annual Environmental Reports • Waste management overall mining operation • Environmental Monitoring • Maintenance and Utilization of environmental Monitoring equipment • Training; Environmental awareness, Policy, Spill and Waste management
MAMOKOBO Video& Research, Ministry of Environment & Tourism. Documentary Film; Eco-tourism and Namibia's Wetlands: supporting livelihoods. (2011)	Role: Presenter, Narrator. Filming Logistics and schedule planner
Risk Based Solutions cc Scoping Report: InnoWind Energy Namibia (PTY) LTD for the proposed 10 MW Solar array Project, Walvis Bay, Erongo Region (March 2011)	Role: Environmental Junior consultant • Project development stages, Socio- economic (Regional and Local Positive and Negative social impacts, Assessment methodology and procedures. **ECC was successfully issued through the regulating authority for the project.**

Risk Based Solutions cc Scoping Report: On Road Investment (PTY) LTD for mining of copper, zinc and gold at farm Elbe 10, EPL 4232 Okahandja, Otjozondjupa Region (November 2010)	Role: Environmental Junior Consultant • Project development stages, Socio- economic (Regional and Local Positive and Negative social impacts, Assessment methodology and procedures, Health and Safety **ECC was successfully issued through the regulating authority for the project.**
Risk Based Solutions cc Scoping Report: Zhonghe Resources (Namibia) Development (PTY) LTD for proposed new uranium mine, EPL3602. Arandis area, Erongo region. (October 2010)	Role: Environmental Junior Consultant • Project development stages, Socio- economic (Regional and Local Positive and Negative social impacts, Assessment methodology and procedures. **ECC was successfully issued through the regulating authority for the project.**
Risk Based Solutions cc Scoping Report: Logwood Investment (PTY) LTD for mining of Copper and Silver at Klein Aub, EPL 3663, Rehoboth District, Hardap Region (May 2010)	Role: Environmental Junior Consultant • Project development stages, Socio- economic (Regional and Local Positive and Negative social impacts), Assessment methodology and procedures, Health and Safety **ECC was successfully issued through the regulating authority for the project.**
Alex Speiser Environmental Consultants CC (ASEC cc Environmental Background and Environmental Management Plan for the development of Eros Load Centre 66/11KV Substation and upgrade of the Olympia Load Centre (March 2010)	Environmental Junior Consultant • Baseline Assessment • Identification of potential impacts • Environmental Management Plan **ECC was successfully issued through the regulating authority for the project.**
UNDP-MET, Versacon cc Namibia Landscape Conservation Area Initiative" NAM-PLACE (Sept 2009)	Role: Assistant Coordinator Development of Project Document for the "Namibia Landscape Conservation Area Initiative" NAM-PLACE. Pre-Feasibility and Baseline Assessment of the project focal areas and verification of the proposed PLACA demonstration Sites • Project coordination and management

Versatile Environment Consulting cc Namibia National Climate Change Policy and accompanying Strategic Action Plan (Mar 2009)	Role: Assistant Coordinator • Administrative support and coordination.
Versatile Environmental Consulting cc (Feb 2009- Feb 2010)	Role: Environmental Junior Consultant Technical environmental services to Versacon cc: • Project development, management and coordination • Project and programme environmental assessment, EIA.
MAMOKOBO Video & Research, Ministry of Environment &Tourism (MET) – Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) Environmental Management Act Film(Feb 2009)	Role: Project Coordinator Assistant Marketing and Distribution of the Environmental Management Act no.7 of 2007 film "A Balancing Act".
MAMOKOBO Video & Research, Ministry of Environment &Tourism (MET) – Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) Environmental Management Act no.7 0f 2007, supporting film (A Balancing Act) Sept 2008- Dec 2008	Role: Film Presenter/ Narrator • Participate in public consultation meetings • Conduct live interviews with various stakeholders
Risk Based Solution cc EIA for Northern Namibia Development Company (NNDC) PTY LTD proposed mining and ongoing exploration – EPL No. 2633 May - June 2008	Role: Environmental Junior Consultant • Assessment of Environmental components (Fauna and flora Coastal Settings and the Kunene River Mouth settings, likely impact and management) • Review of the Legal Framework relevant to the project.
SAIEA- Millennium Challenge Account (MCA) Strategic Environmental Impact Assessment of the construction of a new veterinary cordon fence along Namibia-Angola border (April 2008)	Role: Consultant- Enumerator • Baseline data collection and impact assessment of the proposed veterinary cordon fence

SAIEA- Millennium Challenge Account (MCA) Strategic Environmental Impact Assessment of the construction of a new veterinary cordon fence along Namibia-Angola border (April 2008)	Role: Consultant- Enumerator • Baseline data collection and impact assessment of the proposed veterinary cordon fence
Versatile Environment Consulting cc Namibia National Climate Change Policy and accompanying Strategic Action Plan (Mar 2009)	Role: Assistant Coordinator • Administrative support and coordination.
Versatile Environmental Consulting cc EIA for a Seismic Survey in Block 1911, offshore Namibia (April 2007)	Role: Environmental Junior Consultant • Review of international, regional and national agreements/ policies/ legislation relevant to project • Provision of information and data about coastal and marine regarding sensitivity, ecological importance and other relevant attributes of block 1911 • Preparation and provision of information about the Kunene River mouth, key species, sensitivities and threats.
Versatile Environmental Consulting cc EIA for proposed development of guano platforms near Sandwich Habour Walvis Bay (March 2007)	Role: Environmental Junior Consultant • Review of policies, legislation and international conventions in the context of the project and biodiversity conservation
SAIEA Trans-boundary issues of the Orange-Senqu river basin waters May 2007	Role: Project Assistance
Versatile Environmental Consulting cc Data gathering and gap analysis for modeling of the cumulative effects of offshore petroleum exploration and production activities on the marine environment in the BCLME region. (February 2007)	Role: Environmental Junior Consultant • Compilation of quantitative data on past, present, future petroleum industry activities and techniques for drilling in a GIS compatible format. • Identification and compilation of data on biological, physical and chemical elements most likely to be affected at sites of existing petroleum exploration and production activities. • Analysis of common impacts and project specific impact from oil/gas exploration

National Botanical Institute (NBRI), Namibia Biodiversity Database (NaBiD) Facilitation of baseline biodiversity data through the Brown Hyena Research Project for conservation planning of the Sperrgebiet National Park (Feb 2006- Jan 2007)	Role: Data Coordinator Facilitation of baseline biodiversity data through the Brown Hyena Research Project for conservation planning of the Sperrgebiet National Park
Versatile Environmental Consulting cc EIA for a Seismic Survey in Block 1911, offshore Namibia (April 2007)	Role: Environmental Junior Consultant • Review of international, regional and national agreements/ policies/ legislation relevant to project • Provision of information and data about coastal and marine regarding sensitivity, ecological importance and other relevant attributes of block 1911 • Preparation and provision of information about the Kunene River mouth, key species, sensitivities and threats.
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National Botanical Institute (NBRI), Namibia Biodiversity Database (NaBiD) Facilitation of baseline biodiversity data through the Brown Hyena Research Project for conservation planning of the Sperrgebiet National Park (Feb 2006- Jan 2007).	Role: Data Coordinator
Ministry of Fisheries and Marine Resources (Marine Mammal Section) Cape fur seal Project Jan – Feb 2004	Role: Assistant Fisheries Technician
• **MEMBERSHIPS**	
ENVIRONMENTAL ASSESSMENT PROFESSIONALS OF NAMIBIA (EAPAN)	Professional Membership

CURRICULUM VITAE Mr. Twalinohamba Akawa P. O. Box 4120 Swakopmund Email: akawatwali@yahoo.com

PERSONAL DETAILS

Name of Consultant: Twalinohamba Akawa

Profession: Technologist/Environmental Consultant

Date of Birth: 15 March 1982

Nationality: Namibian

MEMBERSHIP IN PROFESSIONAL BODIES

- EAPAN (Environment Assessment Professionals of Namibia)
- WEMAF (Walvis Bay Environmental Management Advisory Forum)

KEY PROFILE

I have a Degree Master of Philosophy in Environmental Management (Stellenbosch University, 2012) specialising in development planning and environmental analysis. Teaching and research from the University of Namibia exposed me to a wide range of project activities: ecosystem health assessment; water quality monitoring, standard and treatment; fisheries and aquaculture. On part-time, I am an Environmental Assessment Practitioner providing services across various sectors of development. Services include; EIA/scoping, socio-economic, ecosystem and biodiversity assessments; climate risk analysis, mitigation and resilience. My current focus/interest is the transfer/application of new technologies (i.e. the essentials eight: artificial intelligence, virtual reality, internet of things, etc) in mitigating environmental risks such as droughts, pollution, environmental degradation and others.

EDUCATION

Year/qualification	**Mini-thesis title/University**
2012, *M.Phil. Environmental Management*.	"Sustainability analysis of the Namibia marine fishing sector". **Stellenbosch University.**
2005, *BSc. Natural Resources & Conservation*.	"Influence of environmental factors on distribution of Cape hake". **University of Namibia**

EMPLOYMENT RECORD

2007 – present (full time), University of Namibia – Senior Technologist

Acquisition and transfer of equipment/technologies used in teaching and action-based research projects. Action-based research and technology transfer; planning and co-ordination of fieldwork/workshops when transferring technologies to end-users. Provide technical advice on climate resilience and smart technologies aimed at supporting land/water-based aquaculture farms. Community development; assist vulnerable farmers especially in Communal Conservancies to adopt new technologies; assist in project proposal and implementation as well as monitoring and evaluation.

2013 – Present (part-time), Envirodu Consulting & Training Solutions CC – Environmental Consultant

Development and environmental analysis (environmental impact assessment, risk assessment, climate resilience and sustainable development). Project management (e.g. project proposal preparation, scheduling, costing/budgeting, etc) and implementation (e.g. sub-contracting, project closure/exit, monitoring and evaluation).

LANGUAGES

Oshindonga (Excellent) and English (Good).

PROJECT/CONSULTANCY EXPERIENCE

Name of assignment	Name of Project	Cost	Start date	End date	Reference
Environmental Impact Assessment	**EIA/scoping for upgrading and operation of Ugab Rhino Campsite in** Tsiseb Communal Conservancy.	N$80,000.00	January 2019	March 2019	Mr. Eric Xaneb Email: tsisebconservancy@gmail.com Cell: +264813479255
Health assessment	**Ecosystem Health Assessment of the Walvis Bay Lagoon:** monitoring & evaluation as provided in Environment Management Plan for the Walvis Bay port terminal expansion project.	N$3,000,000.00	February 2016	January 2019	Professor Edosa Omoregie Email: edosa.omoregie@gmail.com Cell: +264813732311
Risk Assessment	Strengthening the fisheries management in the BCLME through the application of Ecological Risk Assessment (ERA) for hake and horse mackerel.	N$600,000.00	May 2016	October 2016	Dr. Johannes Itembu Email: jitembu@unam.na Cell: +264811472947
Climate resilience	**Current state of extension, ICTs and KM as solutions to Climate Resilience in Namibia**: *a country study.* Conduncted on behald of CTA (Technical Centre for Agricultural and Rural Co-operation).	N$50,000.00	July 2016	September 2016	Ms. Hlamalani J Nwenya Email: Hlamalaniiburst.co.za Cell: +264811472947
Strategic planning	**Integrated Coastal Zone Management (ICZM) Strategic Planning and Project Management:** *Trainee's/short course manual*.	N$450,000.00	January 2015	November 2015	Mr. Lesley Tjongarero Cell: +264812116291 Patchyderm Environmental Consultants P. O. Box 277, Swakopmund
Scoping/Socio-economic study	**Socio-economic/scoping study: establishment of solid waste facility in the Mudumu Landscape, Zambezi region.** Carried out on behalf of NAMPLACE project/MET, November 2013.	N$250,000.00	July 2013	November 2013	**Centre of Environment & Natural Resources** P. O. Box 96063, Windhoek Tel: 061-272275 Email: cenrcc@gmail.com