

2024

PREPARED BY :



MARCH

FOR :

Mr. D.S Malan

**PHASE1 SCOPING REPORT AND
ENVIRONMENTAL MANAGEMENT PLAN:
EPL6072 OVERLAPPING THE HARDAP
AND KHOMAS REGIONS, NAMIBIA**

Environmental Clearance Application for the
Proposed exploration activities for copper and
gold on EPL 6072

	COPYRIGHT © TLSP ENVIRO SERVICES, 2023 - ALL RIGHTS RESERVED
PROJECT NAME	ECC application for the proposed exploration activities on EPL 6072, overlapping the Hardap and Khomas regions, Namibia
STAGE OF REPORT	Submission for public review to all levels of I&APs
CLIENT	Mr. Daniel Stefanus Malan Tel: +264 81 359 2777 P.O Box 21, Gemsbok Ave, Kamanjab
CONSULTANT	TLSP Enviro Services (T.E.S) Inquiries: Mr. Lester Harker Tel: +264 81 602-2082 E-Mail: info@tesnam.com / lester@tesnam.com
DATE OF RELEASE	March 2023
CONTRIBUTORS TO THE REPORT	Mr. Lester Harker (EAP) , Mr. Eddy Kuliwoye (GIS), Mr. Gwendal Madec (Geohydrologist) and Otah Consultants (Heritage and Archaeology)

Table of Contents

1	INTRODUCTION	7
1.1.	project location and size of the site.....	7
1.2.	Access to the site	8
1.3.	Historical exploration overview	8
1.4.	Project Motivation	9
1.5.	Constraints and limitations	10
2	LEGAL AND REGULATORY REQUIREMENTS	11
2.1	listed activities	11
2.2	laws and policies.....	12
1.6.	Additional National Legislation.....	14
2.3	international treaties and agreements.....	15
3	PROJECT DESCRIPTION	16
3.1	POTENTIAL PROJECT ALTERNATIVES CONSIDERED	16
3.1.1	Identification and analysis of alternatives	16
3.1.2	Analysis of the potential environmental and social impacts of the alternatives:	16
3.1.3	Comparison of the impacts of the alternatives to those of the proposed project:.....	16
3.2	EXPLORATION ACTIVITIES	16
3.2.1	Initial field-based exploration activities overview.....	16
3.3	INFRASTRUCTURE AND EQUIPMENT REQUIREMENTS.....	17
3.4	WATER REQUIREMENTS.....	18
3.5	ENERGY REQUIREMENTS	18



3.6	SEWAGE EFFLUENT AND INDUSTRIAL EFFLUENT.....	18
3.7	SENSITIVITIES PERTAINING TO THE PROPOSED EXPLORATION ACTIVITIES.....	20
4	BASELINE CONDITIONS (THE NATURAL ENVIRONMENT)	21
4.1	REGIONAL CLIMATE SETTING.....	21
4.2	TOPOGRAPHY	24
4.3	HABITATS AND VEGETATION	25
4.4	ALIEN SPECIES	27
4.5	WATER RESOURCES: SURFACE AND LOCAL HYDROLOGICAL PROCESSES	27
4.6	HYDROGEOLOGICAL APPRAISAL	29
4.7	AVIFAUNA AND FAUNA	30
4.8	REPTILES AND AMPHIBIANS	33
4.9	FLORA.....	33
4.10	GEOLOGY AND SOILS	35
4.11	Socioeconomic Conditions (Population Demographics, Sense of Place and Cultural Resources) 37	
4.12	Sense of Place	39
4.13	Cultural Heritage.....	39
4.14	Identification of any potential conflicts or sensitivities related to the project from baseline.....	51
5	IMPACT ASSESSMENT PROCESS AND METHODOLOGY	52
5.1	Process.....	52
5.2	Summary of the potential impacts identified during Phase1scoping.....	52
5.3	Assess the significance of each impact using a standardized methodology.....	53
5.4	Environmental control types.....	55



6	MITIGATION AND MONITORING	56
6.1	Mitigation	56
6.2	Monitoring.....	56
6.2.1	GROUNDWATER MONITORING	56
6.2.2	AMBIENT AIR QUALITY MONITORING.....	57
7	TERMS OF REFERENCES.....	58
7.1	Biodiversity Specialist study:	58
7.1.1	Objectives:	58
7.1.2	Scope of Work:	58
7.1.3	Methodology:.....	59
7.2	Heritage and archaeological specialist study.....	59
7.2.1	Objectives:	59
7.2.2	Scope of Work:	59
7.2.3	Methodology:.....	60
7.3	Traffic impact assessment.....	60
7.3.1	Objectives	60
7.3.1	Scope of Work:	60
8	CONCLUSIONS AND RECOMMENDATIONS.....	61
9	REFERENCES AND APPENDICES.....	62
9.1	REFERENCES.....	62
	Figure 1 - Locality map of EPL 6072	8
	Figure 2 - Average temperature readings per month for the Rietoog area. Source: Climatedata.org, 2021	22



Figure 3 - Average climate readings of Rietoog over a 12-month period (The blue bars indicate the average per month rainfall and the red graph illustrates the monthly average temperature). Source: Climatedata.org, 2021	23
Figure 4 - Average wind speed and direction in Rehoboth, north of EPL 6072. Source: IEM, 2023	24
Figure 5 - Elevation map of the EPL 6072.....	25
Figure 6 - Geohydrological map of EPL 6072.....	28
Figure 7 - Hydrology map of the Project area showing the stream order.	29
Figure 8 - Vegetation structure of the general area overlapping EPL 6072	34
Figure 9 – The Geology of EPL 6072.	36
Figure 10 - Stakeholder map of the general area.....	38
Figure 11 - Man-made water dam and well in Farm Rusplek (Source: Author, 2024)	40
Figure 12: Burial site in Farm Klein Noois (Source: Author, 2024)	41
Figure 13: Burial site in Farm Karibas (Source: Author, 2024)	42
Figure 14: Burial site in Farm Karibas (Source: Author, 2024)	43
Figure 15: Burial site in Farm Witkans (Source: Author, 2024).....	44
Figure 16: Previous underground mine entrance on Farm Witkans (Source: Author, 2024)	45
Figure 17: Primary Crusher Farm Witkans (Source: Author, 2024)	45
Figure 18: Ruins of old building structures (Source: Author, 2024)	46
Figure 19: Burial site in Farm Louwspoort (Source: Author, 2024)	47
Figure 20: Primary crusher from the previous mine in Farm Morgenroth (Source: Author, 2024)	48
Figure 21: A conveyor connected to the above Primary crusher with a visible load of rocks from previous mining activities in Farm Morgenroth (Source: Author, 2024)	48
Figure 22: Burial site in Farm Morgenroth (Source: Author, 2024)	49
Figure 23: A block of granite with a couple of rock paintings in Farm Morgenroth (Source: Author, 2024)	50
Figure 24: A. D- Stretched image of the above image in Farm Morgenroth (Source: Author, 2024)	50
Figure 25 - Environmental control types.....	55
Table 1 - Liquid Effluent discharge levels.....	19
Table 2 - R553 Regional Standards for Industrial Effluent, in Government Gazette No 217 dated 5 April 1962.....	20
Table 3 - Sensitivity scoring for habitats.....	26
Table 4 - Hydrocensus summary table.....	30
Table 5 - Avifauna species list with their protection status within Namibia.....	30
Table 6 - Evaluation Criteria for dust fallout control	Error! Bookmark not defined.
Table 8 - Significance rating table scales definitions	54



APPENDICES

Appendix A – EMP.....	58
Appendix B – Evidence of public consultation.....	59

ACRONYMS AND ABBREVIATIONS

Acronyms and Abbreviations	Definition
EPL	Exclusive Prospecting License
EMP	Environmental Management Plan
ESA	Environmental Scoping Assessment
TOR	Terms of Reference
g/t	Gram per ton
ppm	Parts per million
MEFT	Ministry Of Environment, Forestry and Tourism
MME	Ministry Of Mines and Energy
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ECC	Environmental Clearance Certificate
MHAISS	Ministry Of Home Affairs, Immigration, Safety and Security
MHSS	Ministry Of Health and Social Services
CBD	Convention on Biological Diversity
UNFCCC	United Nations Framework Convention on Climate Change
TLBS	Tractor-Loader-Backhoe
DWAF	Department Of Water Affairs and Forestry
NGOs	Nongovernmental Organizations



GROWAS	The National Groundwater Information System at DWAF, Geohydrology
ASTM D1739	The American Standard for Testing and Materials method D1739
MAWF	Ministry of Agriculture, Water and Forestry
RBS	Risk Based Solutions
masl	Meters Above Sea Level
rwl	Rest Water Level
km	Kilometres
Mps	Meters per second
ml	Millilitres
mm	Millimetres
l	Liters
%	Percentage
°C	Degrees Celsius
mg/l	Milligrams Per Liter
ph	Potential Of Hydrogen
kw/hr	Kilowatt-hour
m³	Cubic Meters



1 INTRODUCTION

Mr. Daniel Stefanus Malan (The Proponent), a Namibian citizen in his private capacity appointed TLSP Enviro Services (T.E.S.) to conduct an environmental scoping assessment (ESA) of the Project and develop an environmental management plan (EMP) to be used toward the application for an Environmental Clearance Certificate for EPL 6072 to continue with ore verification exploration drilling activities for base metals (copper) and precious metals (gold).

This Phase1 scoping assessment describes the proposed exploration activities on the biophysical and social environment directly affected, hence ensuring its independence and objectivity. Therefore, the purpose of this report is to illustrate the environmental risks potentially involved in this project, should there be any, public consultation conducted to date and the terms of references (TOR) required for further studies, and how to mitigate them via an environmental management plan (EMP) tool.

A detailed assessment of the potential impacts identified will be contained in a subsequent full environmental impact assessment report scheduled for completion later in 2024 upon completion of the feasibility study and its specialist sub-components.

1.1. PROJECT LOCATION AND SIZE OF THE SITE

EPL 6072 is located approximately 94 km southwest of Rehoboth, within its boundaries overlapping the Khomas and the Hardap regions. The biggest portion of the EPL fall within the Hardap Region. The EPL is 20 000 ha in size. See figure 1 below.

The EPL overlaps portions of ten farms, these are:

- Neu Franken 232 (mainly High topographical areas / mountains)
- Neu Franken 213
- Nauams 177
- Morgenroth 17
- Noois 337
- Klein Noois
- Witkrans 342
- Witkrans Suid
- Kabiras 343, and
- Louwspoot



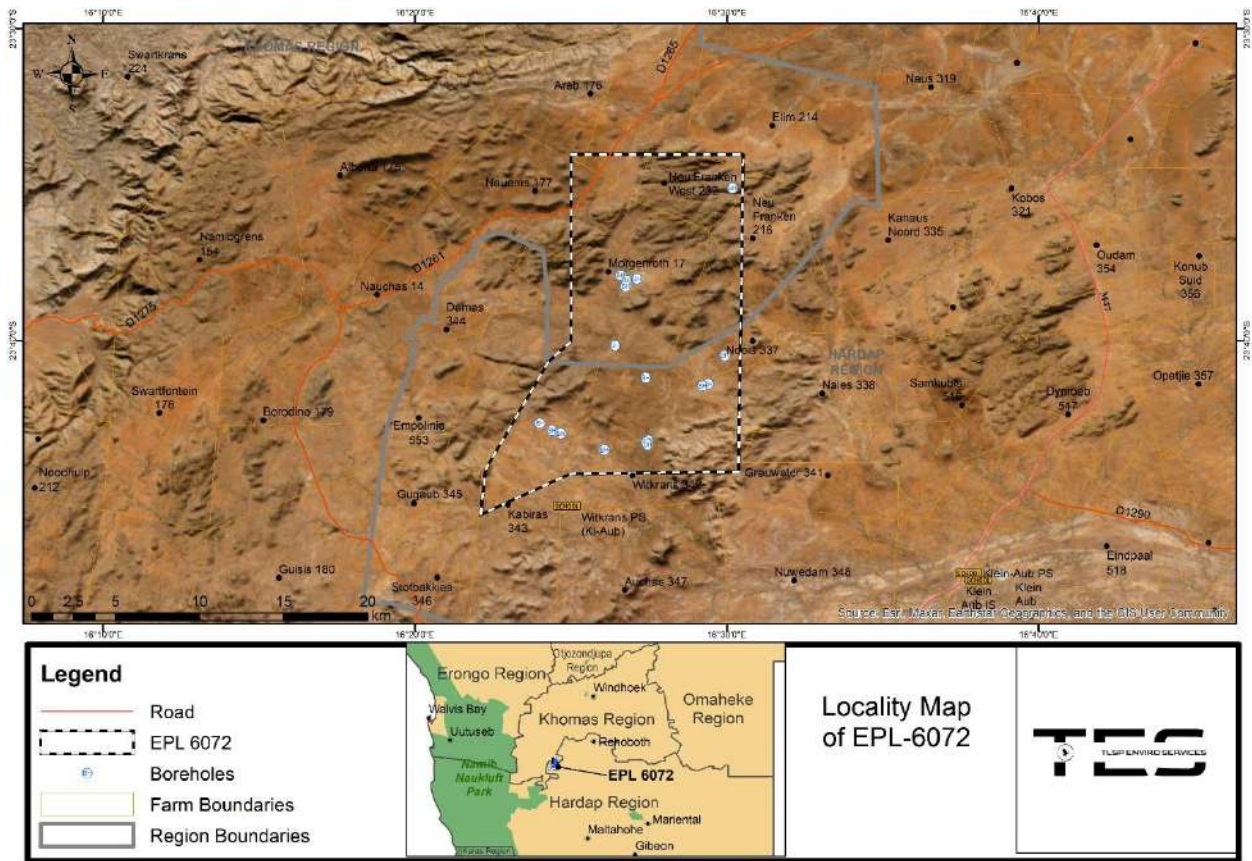


Figure 1 - Locality map of EPL 6072

1.2. ACCESS TO THE SITE

The site is accessed via the M47 district road from Rehoboth. At the settlement Kobos a two spoor track heads in a south westerly direction through privately owned farms toward the EPL.

1.3. HISTORICAL EXPLORATION OVERVIEW

The historical continuum of prospecting, exploration, and mining in the region dates to the early 15th century, with pre-modern activities reaching their peak in the seventeenth century. However, it was during the colonial period (1884 - 1915) that these ventures gained momentum, evolving until the 1980s when major copper mines were closed due to diminished demand and depressed metal prices on the global market.

Geographically, the region's significance is underscored by three copper mines: Swartmodder Mine, Oamites Mine, and Klein Aub Mine. All of which are currently non-operational.



Swartmodder Mine, located 6 km south of Rehoboth, operated since colonial times, reaching its peak in the 1960s. Substantial exploration efforts commenced in 1972, identifying approximately 160,000 metric tons of copper ore reserves at a grade of 2.2% Cu. Operations ceased in 1981 due to unfavourable copper prices. The primary ore minerals at Swartmodder Mine include chalcopyrite and pyrite, occurring as stringers and thin veinlets within host rocks, predominantly sheared lavas, and schist. Secondary copper minerals such as malachite, chrysocolla, and chalcocite is also present. Until mid-2013, local miners, supported by Chinese investors, reactivated small-scale mining operations, and established a standard ore treatment facility, exporting copper concentrate to China.

The Oamites Mine, situated approximately 30 km north of Rehoboth, exploited copper mineralization hosted within meta-sedimentary rocks, interpreted as marine facies of terrestrial arenites. The mine commenced operations in July 1971, with initial ore reserves estimated at 2 million tons grading 1.58% Cu. Over the course of its operation until 1984, Oamites Mine produced 6.6 million tons of concentrate, containing 35.6% Cu and 14.8 g/t Ag. Main copper minerals included bornite, chalcopyrite, chalcocite, digenite, and covellite. The mine ceased operations in December 1984 upon depletion of ore reserves.

The Klein Aub Mine, located on farm Klein Aub 350, approximately 100 km southwest of Rehoboth and 45 km south of EPL 3877 Witkrans, was initially discovered in 1915, explored with limited success in 1927, and subsequently diamond drilled in 1959/60, indicating 1 million tons of ore. Production commenced in 1966 and continued until 1987, yielding 7.5 million tons of ore grading 2% Cu and 50 ppm Ag. The recovered concentrate contained 45-56% Cu and 700-1100 ppm Ag. Primary copper minerals included chalcocite, digenite, bornite, chalcopyrite, covellite, cuprite, native copper, and malachite, alongside native silver, pyrite, galena, and iron oxides.

Exploration activities on farm Witkrans 342 (EPL 6072) commenced during World War II, yielding approximately 32 kg of gold from white quartzites of the Elim Formation between 1939 and 1945. Small-scale mining operations were conducted at the Witkrans Gold Mine, also known as "Quasi-Modo West and East Mine," during the 1950s and 1960s. Gold mineralization occurred within Elim Formation rocks in contact with Piksteel Granodiorite and was extracted from sheared hydrothermal quartz veins exhibiting limited strike lengths and erratic gold content. Despite several attempts to reactivate exploration and mining until the mid-1980s, success was limited. Nevertheless, trench sampling revealed promising gold grades, and during base metal exploration in the 1970s, a significant copper-lead anomaly was discovered on farm Witkrans, indicating the potential for further mineral exploration and development (Schreck, 2013).

1.4. PROJECT MOTIVATION

The EPL 6072 is in an area with fairly pronounced but underutilised historical exploration for copper and gold, characterized by minimal competition for land use other than livestock



farming. Comparatively, the Swartmodder Mine, situated to the northeast of EPL 6072, is known to contain copper deposits and mined intermittently.

Historical evidence, such as old mine workings and excavations within (Farm Witkrans 342) and surrounding the EPL area, suggests that both copper and gold have been explored and mined on a small scale. Given the extensive exploration activities conducted thus far, there exists a favourable probability of discovering economically viable mineral resources within EPL 6072.

The proposed exploration activities are expected to yield moderate socioeconomic benefits to the local community. These benefits primarily include the payment of annual license rental fees to the Central Government, investment in the local economy through personnel and contractor hiring, local expenditures, financial obligations under a farm owner agreement for infrastructure placement, and the enhancement and upkeep of the existing access track toward the EPL owned by the Regional Authority.

In the event of a discovery of sufficient economic minerals resources, the likely new mining project will have much greater local, regional, and national socioeconomic benefits in terms of capital investments, license rental fees, royalties payable to Government, direct and indirect contracts and employment opportunities, export earnings, foreign direct investments, and various taxes payable to the Government.

1.5. CONSTRAINTS AND LIMITATIONS

This scoping assessment concentrates on the scale and scope of the activities proposed to be undertaken on EPL 6072 and is conducted in line with the 2015 MEFT guidelines.

- Due to time constraints on the part of the EPL owner's tenement management obligations with MME and its financial and corporate timeline with its investor group, this Phase1 scoping report was submitted to the I&APs in parallel with the submission to the competent authorities for review by all parties.
- A Phase2 scoping assessment report will be submitted to the I&APs and the competent authorities upon completion of the ongoing specialist studies and public consultation.
- The Proponent will undertake a full EIA at a later stage once their feasibility study has been completed. The preparation of the prefeasibility and feasibility studies forms the final stages of the minerals exploration process to prove that a specific mineral deposit is viable for developing a mine.

This Phase1 scoping report contains the terms of references for the specialist studies required for the Phase2 scoping assessment and the full ESIA once commissioned.



2 LEGAL AND REGULATORY REQUIREMENTS

2.1 LISTED ACTIVITIES

The Environmental Impact Assessment (EIA) Regulations, 2012 and the Environmental Management Act, 2007, (Act No. 7 of 2007) determines a set of listed activities that cannot be undertaken without an Environmental Clearance Certificate (ECC). The following activities as contained in Annexure I of the Government Notice Schedule Number 30 pertains to the exploration project.

1. Energy Generation, Transmission, and Storage activities

The construction of facilities for -

(a) The generation of electricity.

2. Waste management, treatment, handing and disposal activities

The construction of facilities for waste sites, treatment of waste and disposal of waste.

(2.1) Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976

3. 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.

4. Forestry activities

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

8. Water Resource developments

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

(8.5) The construction of dams, reservoirs, levees, and weirs.

(8.6) The construction of industrial and domestic wastewater treatment plants and related pipeline systems.

9. Hazardous substance treatment, handling, and storage



(9.2) Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence, or authorisation or which requires a new permit, licence, or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent, or waste.

2.2 LAWS AND POLICIES

In Namibia, exploration and mining activities and the associated environmental impact assessments (EIA) are governed by several laws and regulations. These laws aim to ensure sustainable development, protection of the environment, and the rights of affected communities. Below is a breakdown of the key laws related to mining and the EIA process in Namibia.

i. The Namibian Constitution:

The Namibian Constitution, particularly Article 95(d), recognizes the state's responsibility to protect the environment and promote sustainable development. It establishes the constitutional basis for environmental protection and guides the formulation and implementation of environmental laws and policies.

ii. The Minerals (Prospecting and Mining) Act, 1992:

This Act regulates prospecting, mining, and related activities in Namibia. It outlines the procedures for obtaining mining licenses, mining rights, and mineral concessions. It also includes provisions for the protection of the environment during mining operations.

iii. The Environmental Management Act, 2007:

The Environmental Management Act is the main legislation governing environmental protection and the EIA process in Namibia. It establishes the legal framework for assessing and managing the environmental impacts of various activities, including mining. The Act requires mining companies to conduct EIAs before commencing mining operations and provides guidelines for the assessment process.

iv. The Environmental Impact Assessment Regulations, 2012:

The regulations provide detailed procedures for conducting EIAs in Namibia. They specify the contents of an EIA report, the process of public participation (not required for this renewal application), and the requirements for monitoring and reporting. Mining projects that are likely to have significant environmental impacts are subject to a comprehensive EIA process.

v. The Forestry Act, 2001:



The Forestry Act governs the protection, management, and sustainable utilization of forests and woodlands in Namibia. It includes provisions to safeguard forest resources from the impacts of mining activities and requires obtaining permits for activities such as timber harvesting or clearing of forests for mining.

vi. The Water Resources Management Act, 2013:

This Act (Gazetted in August of 2023) regulates the management, development, conservation, and use of water resources in Namibia. It ensures that exploration operations comply with water resource management principles and obtain the necessary permits for water use.

vii. The Atmospheric Pollution Prevention Ordinance, 1969:

The Atmospheric Pollution Prevention Ordinance aims to prevent and control atmospheric pollution in Namibia. It prohibits the emission of harmful substances, such as smoke, dust, gases, or odours, into the atmosphere beyond prescribed limits. The ordinance also establishes procedures for the licensing and monitoring of industries and activities that have the potential to cause atmospheric pollution. Part III of the Act sets out regulations pertaining to atmospheric pollution by smoke. While preventative measures for dust atmospheric pollution are outlined in Part IV and Part V outlines provisions for atmospheric pollution by gases emitted by vehicles.

viii. The Waste Management Act, 2000:

The Waste Management Act provides the legal framework for the management, control, and disposal of waste in Namibia. It establishes guidelines for waste classification, storage, transportation, treatment, and disposal. The Act also outlines the responsibilities of waste generators, transporters, and disposal site operators, as well as the powers of regulatory authorities in enforcing waste management regulations.

ix. The Petroleum Products and Energy Act of 1990:

Under this Act, the Minister responsible for energy matters has the authority to issue regulations and guidelines concerning the storage, handling, and transportation of petroleum products, including fuel. These regulations outline the requirements for obtaining a consumer installation certificate for the storage of fuel more than 600 litres in rural areas and 200 litres in urban areas. Any entity holding a certificate or exercising control over activities related to petroleum products is mandated to promptly report any substantial petroleum product spill, defined as exceeding 200ℓ per spill, to the Minister. The responsible party is also required to undertake all necessary measures, in line with established petroleum industry practices, for the effective cleanup of the spill. Failure to fulfil this obligation empowers the Minister to intervene, facilitating the cleanup process and subsequently recovering associated costs



from the responsible party. Certificates issued are subject to general conditions, encompassing stipulations concerning petroleum spills and site abandonment. Additionally, the regulation empowers the Minister to impose specific conditions pertaining to the formulation and evaluation of environmental assessments and the secure disposal of petroleum products.

x. Legislation pertaining to Labour, Health, and Safety

The Labour Act of 1992, Act No. 6 of 1992, amended by the Labour Act of 2007 (Act No. 11 of 2007), falls under the jurisdiction of the Ministry of Labour, Industrial Relations, and Employment Creation (MLIREC). This legislation addresses severance allowances for employees in specific termination circumstances and encompasses provisions for ensuring the health, safety, and welfare of employees. Regarding Health, Safety, and Environment (HSE), the Labour Act of 2007 mandates the protection of employees. Employers, as outlined in the legislation, are obligated to establish a secure working environment devoid of risks to employees' health, ensure the provision of adequate facilities for employee welfare, provide, and maintain safe plant, machinery, work systems, and processes, and guarantee the safe use, handling, storage, or transportation of hazardous materials. The legislation further specifies that all hazardous substances must adhere to clear exposure limits, and employers are required to implement medical surveillance, first-aid, and emergency arrangements deemed suitable for the operation.

xi. National Heritage Act 27 of 2004 – Administered by the Ministry of Education, Arts, and Culture (MEAC) directing the application for heritage consents.

This legislation outlines provisions aimed at safeguarding and preserving sites and artifacts of cultural significance, as well as establishing a registry for such sites and objects. The proposed activities will adhere to these regulations, ensuring that any archaeological or paleontological discoveries, as defined by the Act, are promptly reported to the Ministry. Additionally, appropriate permits will be sought before undertaking any actions that may disturb or damage heritage sites or artifacts.

1.6. ADDITIONAL NATIONAL LEGISLATION

Several other significant legislative frameworks apply to the proposed exploration operations, as outlined below:

- Explosives Act 26 of 1956 (amended up to April 1978) – Governed by the Ministry of Home Affairs, Immigration, Safety, and Security (MHAISS).
- Nature Conservation Ordinance, No. 4 of 1975 – Managed by the Ministry of Environment, Forestry, and Tourism (MEFT).
- Hazardous Substances Ordinance 14 of 1974 – Oversighted by the Ministry of Health and Social Services (MHSS).



- Public Health Act 36 of 1919 – Supervised by the Ministry of Health and Social Services (MHSS).

2.3 INTERNATIONAL TREATIES AND AGREEMENTS

Article 144 of the Namibian Constitution establishes the mechanism for ratifying international treaties and protocols. Once ratified, these agreements become legally binding within Namibia and are enforceable by Namibian courts. This provision ensures compliance with international obligations and commitments.

1. Convention on Biological Diversity (CBD) 1992: Namibia is also a signatory to the CBD, which focuses on conserving biodiversity and ensuring the sustainable use of natural resources. The CBD promotes the protection of ecosystems, species, and genetic diversity, which can be directly relevant to safeguarding the natural environment during mining activities.
2. United Nations Framework Convention on Climate Change (UNFCCC): Namibia is a signatory to this treaty, which aims to address climate change and its impacts. It emphasizes the importance of sustainable development and encourages countries to take measures to mitigate greenhouse gas emissions and adapt to the effects of climate change.

Other binding treaties, and protocols include:

3. The Paris Agreement, 2016.
4. Vienna Convention for the Protection of the Ozone Layer, 1985.
5. Montreal Protocol on Substances that Deplete the Ozone Layer, 1987.
6. United Nations Framework Convention on Climate Change, 1992.
7. Kyoto Protocol on the Framework Convention on Climate Change, 1998.
8. Basel Convention on the Control of Transboundary Movement of Hazardous Wastes and Their Disposal, 1989.
9. World Heritage Convention, 1972.
10. Convention to Combat Desertification, 1994. and
11. Stockholm Convention of Persistent Organic Pollutants, 2001.
12. Southern Africa Development Community (SADC) Protocol on Mining, and.
13. Southern Africa Development Community (SADC) Protocol on Energy.



3 PROJECT DESCRIPTION

The primary objective of the proposed project activities, encompassing the exploration and prospecting program, is to identify potential economic mineral resources as permitted within the allocated EPL area. The extent of necessary field-based support and logistical operations will be contingent upon the scale of the proposed exploration activities.

Existing tracks, campsites/farmsteads, and accommodations within the area will support the planned exploration activities. In instances where no tracks currently exist, the field team will create new tracks with the requisite permission from the landowner(s), adjusting the scope based on the scale of exploration.

In cases where suitable existing campsites or farmsteads are lacking, a temporary camp will be established at appropriate locations within the EPL area, aligning with the provisions outlined in the Environmental Management Plan (EMP). The size of the exploration camp will be minimized during the exploration phase but may undergo expansion during the test mining and mine development stages if economically viable mineral resources are discovered.

3.1 POTENTIAL PROJECT ALTERNATIVES CONSIDERED

3.1.1 Identification and analysis of alternatives

- No feasible alternatives in terms of location other than EPL 6072 were considered for this project.
- Any other land use on a commercial scale in the project area would not yield the expected returns and community benefits once the mining stage is reached.
- No other feasible alternative access route would be able to handle the logistical demands of an exploration project of this nature, therefore, the existing access route will be utilised in an upgraded state.

3.1.2 Analysis of the potential environmental and social impacts of the alternatives:

To be determined in the full ESIA at a later stage.

3.1.3 Comparison of the impacts of the alternatives to those of the proposed project:

To be developed in the full ESIA at a later stage.

3.2 EXPLORATION ACTIVITIES

3.2.1 Initial field-based exploration activities overview.

Exploration and preliminary activities geared toward eventual mining within the project area have been underway since 2008. Initial reconnaissance efforts involved the inspection of old workings, shafts, dumps, and heaps, with samples collected for geochemical analysis at the



Geological Survey of Namibia. Simultaneously, historical records from the Geological Survey archives were reviewed to identify prospective areas on the EPL. This initial phase provided valuable insights into copper and gold mineralization on the tenement, informing subsequent development plans.

More intensive exploration commenced in early 2012, involving systematic sampling of outcrops analysed by a professional geochemist who joined the exploration team. Infrastructure improvements included the maintenance and opening of access roads to farm Witkrans and various outcrop sites.

Between 2013 and 2014, fieldwork focused on identifying and exploring copper-silver mineralization at various locations on the tenement. Historic outcrops were reopened and expanded, new copper ore occurrences were investigated, and trenching was conducted using excavators, jackhammers, and compressors. Subsequently, known mineralized areas were further developed through blasting, with copper-rich samples separated and stockpiled manually. Additionally, approximately 30 tons of low-grade copper mineralized schist were supplied to Swartmodder Mine for processing.

The results of the second exploration phase indicate economically significant mineralized outcrops on the tenement with potential for mine development. Continued systematic exploration covering the entire area of EPL 3877 is however necessary to fully assess its mineral potential.

During the second phase of exploration, various copper and silver mineralized samples were collected and analysed. Samples from different locations exhibited differing copper and silver grades, with distinct mineralogical compositions observed between samples from elevated areas and those from the valley. Three types of copper mineralization were identified, each associated with specific geological features and mineral assemblages.

Based on the historical and current exploration data, as well as the presence of neighbouring EPLs with rich mineral occurrences, EPL 6072 shows high potential for exploration success in gold, copper, silver, lead, and barite. Professional exploration activities, including geochemical and geophysical surveys, trenching, bulk sampling, and drilling, are necessary to further delineate and evaluate the mineral resources.

The next step involves conducting a comprehensive desktop study to compile historical and current data, define target areas, and develop a detailed exploration plan with milestones and work targets. Practical field exploration will follow, including the acquisition of spatial data, geochemical soil sampling, ground magnetic surveys, trenching, and drilling, with the aim of delineating and confirming exploration targets.

3.3 INFRASTRUCTURE AND EQUIPMENT REQUIREMENTS

Inclusive infrastructure elements required in any suitable area on the EPL may include but are not limited to:



- Management accommodation (either in existing farmsteads or a semi-permanent structure built).
- Workers' camp (same as above).
- Multipurpose Workshop and storage shed.
- Vehicle and heavy machinery wash bay.
- Closed reservoir (unknown capacity).
- Equipment yard.
- Site office (either containerised or a built semi-permanent structure).

Equipment requirements for the proposed bulk sampling campaign

- 6 x B40 dumpers
- 2 x 966 Frontend loaders
- 3 x 40-ton excavators
- 2 x TLB's
- 1 x drill rig
- 1 x D6 Dozer
- 4 x Dump trucks

3.4 WATER REQUIREMENTS

The project will use an estimated 200 000 litres of water per annum. Thirty percent will be used for human consumption and 70 percent for operational purposes. The water required will potentially be abstracted via an existing borehole(s) in the project area. The required water abstraction permit will be applied for by the Proponent. In addition, the use of a private borehole' terms and conditions will be negotiated with the relevant farm owner(s).

3.5 ENERGY REQUIREMENTS

The Proponent intends to provide power to the site through a combination of solar and diesel sources equivalent to an energy output of 500Kw/hr initially.

3.6 SEWAGE EFFLUENT AND INDUSTRIAL EFFLUENT

A person produces about 200 litres of waste on average per day. Therefore, an onsite workforce of about 20 persons for stage one of operations would produce about 4000 litres



or 4m³ of sewage waste per day. The total estimated sewage effluent produced by the project would then approximately be 1400m³ per annum at full capacity (calculated at a 350 days per annum full capacity workforce). Therefore, the site will be fitted with a suitable waste collection and treatment system designed for liquid effluent treatment through which wastewater passes before discharge into the environment.

The system is recommended to be a complete containerized plant including septic tanks (i.e., 4 of 5 m³ plastic tanks) and recycle sump (i.e., 1 of 1 m³ plastic tank) to collect and treat expected effluent daily. The complete treatment plant will be designed to handle primary treatment, carbon removal and nitrification, solids removal (secondary settling) and disinfection (chlorination). Once the Proponent has had their system designed, the schematics of which will be used to apply for a domestic and industrial waste effluent discharge exemption permit from the department of Water Affairs (DWAf).

In addition, the DWAf promotes the reuse of wastewater wherever possible. This is considering the scarce water conditions in the country. The Code of Practice; Volume 6 outlines the guidelines essential to establishing a wastewater treatment system to reuse wastewater. This same principle applies to effluent waste handling for the Project. The treatment system to be used must generate final water quality that is compliant to the general standards as stipulated in the Government Gazette Regulation R553 of 5 April 1962, in Section 21(1) and 21(2) of the Water Act (Act No 54 of 1956).

Table 1 - Liquid Effluent discharge levels

Pollutant	Max. Value
pH	6-9
Total suspended solids	50 mg/l
Total metals	10 mg/l
Phosphorous (P)	5 mg/l
Fluoride (F)	20 mg/l
Cadmium (Cd)	0.1 mg/l

Likewise, industrial effluent likely to be generated by the proposed activities must comply with provisions of the Government Gazette No 217 dated 5 April 1962. See Table 2.



Table 2 - R553 Regional Standards for Industrial Effluent, in Government Gazette No 217 dated 5 April 1962

Colour, odour and taste	The effluent shall contain no substance in concentrations capable of producing colour, odour or taste	
pH	Between 5.5 and 9.5	
Dissolved oxygen	At least 75% saturation	
Typical faecal coli	No typical faecal coli per 100 ml	
Temperature	Not to exceed 35 °C	
Chemical demand oxygen	Not to exceed 75 mg/l after applying a correction for chloride in the method	
Oxygen absorbed	Not to exceed 10 mg/l	
Total dissolved solids (TDS)	The TDS shall not have been increased by more than 500 mg/l above that of the intake water	
Suspended solids	Not to exceed 25 mg/l	
Sodium (Na)	The Na level shall not have been increased by more than 50 mg/l above that of the intake water	
Soap, oil and grease	Not to exceed 2.5 mg/l	
Other constituents	Residual chlorine	0,1 mg/l as Cl
	Free and saline ammonia	10 mg/l as N
	Arsenic	0,5 mg/l as As
	Boron	1,0 mg/l as B
	Hexavalent Cr	0,05 mg/l as Cr
	Total chromium	0,5 mg/l as Cr
	Copper	1,0 mg/l as Cu
	Phenolic compounds	0,1 mg/l as phenol
	Lead	1,0 mg/l as Pb
	Cyanide and related compounds	0,5 mg/l as CN
	Sulphides	1,0 mg/l as S
	Fluorine	1,0 mg/l as F
	Zinc	5,0 mg/l as Zn

3.7 SENSITIVITIES PERTAINING TO THE PROPOSED EXPLORATION ACTIVITIES

- The noise output generated by the mechanics on site, as well as potential blasting may cause some unfamiliar noise pollution during daylight hours to humans and fauna present in the project area.
- The dumping of overburden material in semi-large stockpiles on untouched grounds will cause localised habitat destruction.
- Dust nuisance.
- Potential pollution of soil, surface water streams / rivers and underground water from unabated hydrocarbon and industrial effluent spills and leaks from workshops, storage yards and exploration sites.
- Water demand of the project from natural supply systems.

The sensitivities identified above were determined by the application of the source, transport, receptor pathway methodology of impact identification. Where there is receptor to a perceived risk (source) an impact is present. Inversely where there is no receptor no risk is involved.



4 BASELINE CONDITIONS (THE NATURAL ENVIRONMENT)

A full biodiversity specialist survey and review of the EPL area is required to craft a detailed overview of the actual biota present in the project area. The results of such a specialist study will be encapsulated within the Phase2 Scoping report, plus impact assessment. Nevertheless, this chapter provides a brief introductory description of the natural environment expected within the EPL as a representative sample of its reality.

4.1 REGIONAL CLIMATE SETTING

In the absence of a weather station in the direct project area climate data of the nearest settlement's weather station at Rietoog was used to describe the regional climatic setting. Throughout the year there is almost no rainfall, however, could vary from 50mm to 300mm decreasing from the east towards the west. The region has vast differences in temperature, which can drop below freezing point in winter and increase to above 40°C in summer (RBS, 2022).

The climatic conditions of Rietoog are characterized by arid and dry desert weather. The Köppen-Geiger climate classification identifies this weather pattern as belonging to the category of BWh (hot desert climate). The average annual temperature in Rietoog is 19.6 °C. The rainfall here is approximately 242 mm per year (climatedata.org, 2024). The average annual temperature is 19.6 °C where the warmest month of the year is January, with an average temperature of 24.4 °C and July being the coldest month of the year.



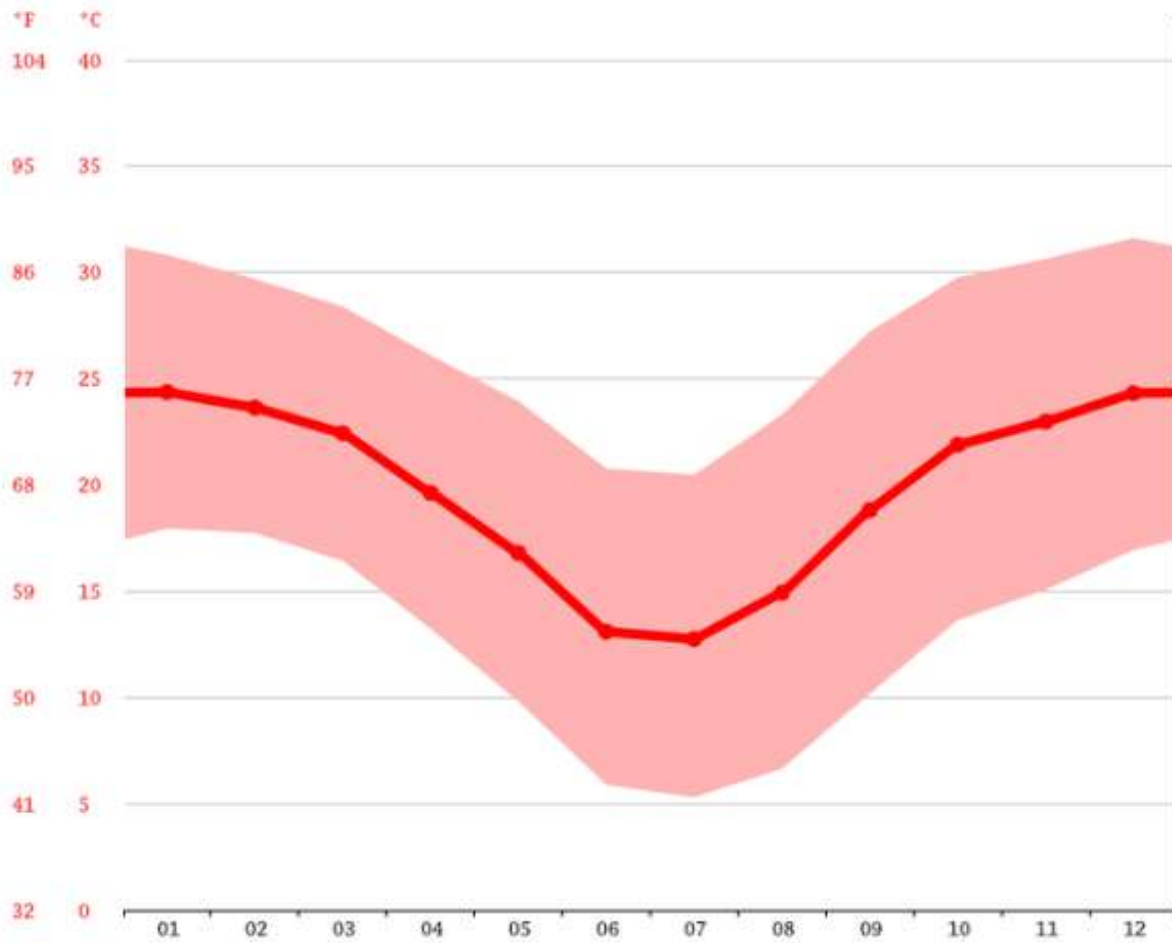


Figure 2 - Average temperature readings per month for the Rietoog area. Source: Climatedata.org, 2021

The average per annum climate setting is illustrated in Figure 3 below.



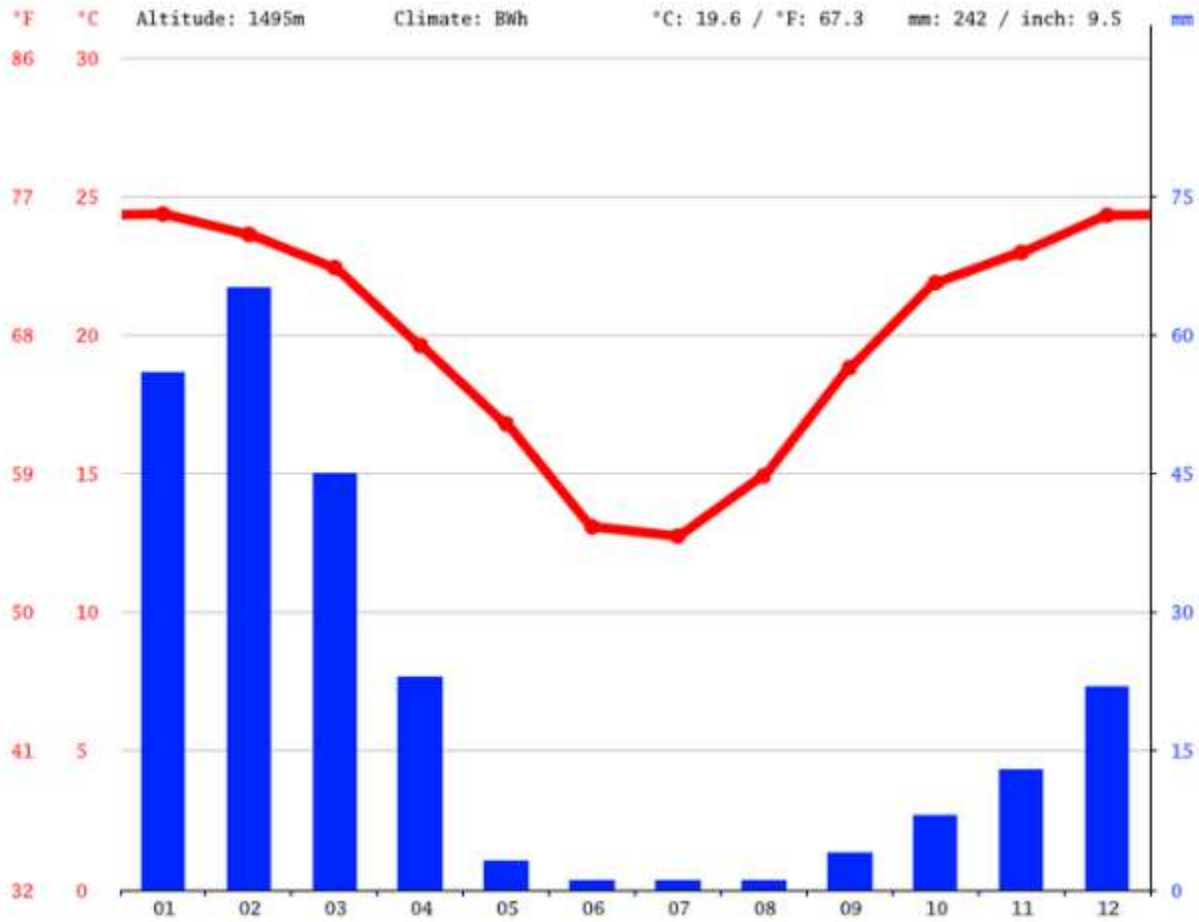


Figure 3 - Average climate readings of Rietoog over a 12-month period (The blue bars indicate the average per month rainfall and the red graph illustrates the monthly average temperature). Source: Climatedata.org, 2021

The prevailing wind is in the east south-eastern direction, with the speed averaging to approximately 1.7 meters per second (Mps) as shown in Figure 4





Windrose Plot for [FYRH] Rehoboth
Obs Between: 19 Aug 2009 12:00 PM - 08 Aug 2015 10:00 AM Africa/Windhoek

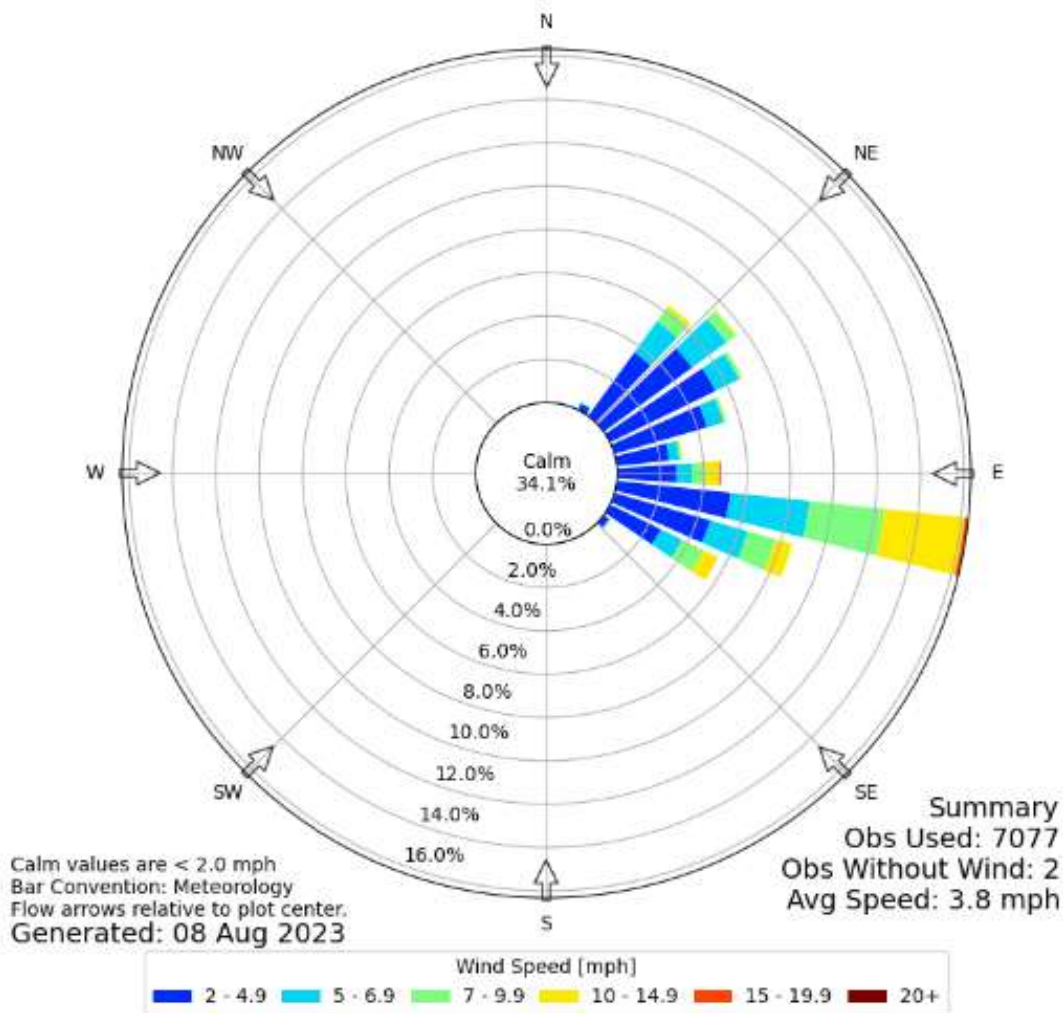


Figure 4 - Average wind speed and direction in Rehoboth, north of EPL 6072. Source: IEM, 2023

4.2 TOPOGRAPHY

Topographically the EPL area and surroundings are very rugged with topographically high areas over most parts of the northern, eastern, and southern quadrants of the EPL. Dendritic ephemeral rivers from a network of surface linkages connected to the local major ephemeral rivers. Ephemeral Rivers are key habitats and are a vital link to the local ecosystems. The EPL is topographically placed at 1678 to 1908 masl (meters above sea level). See Figure 5.



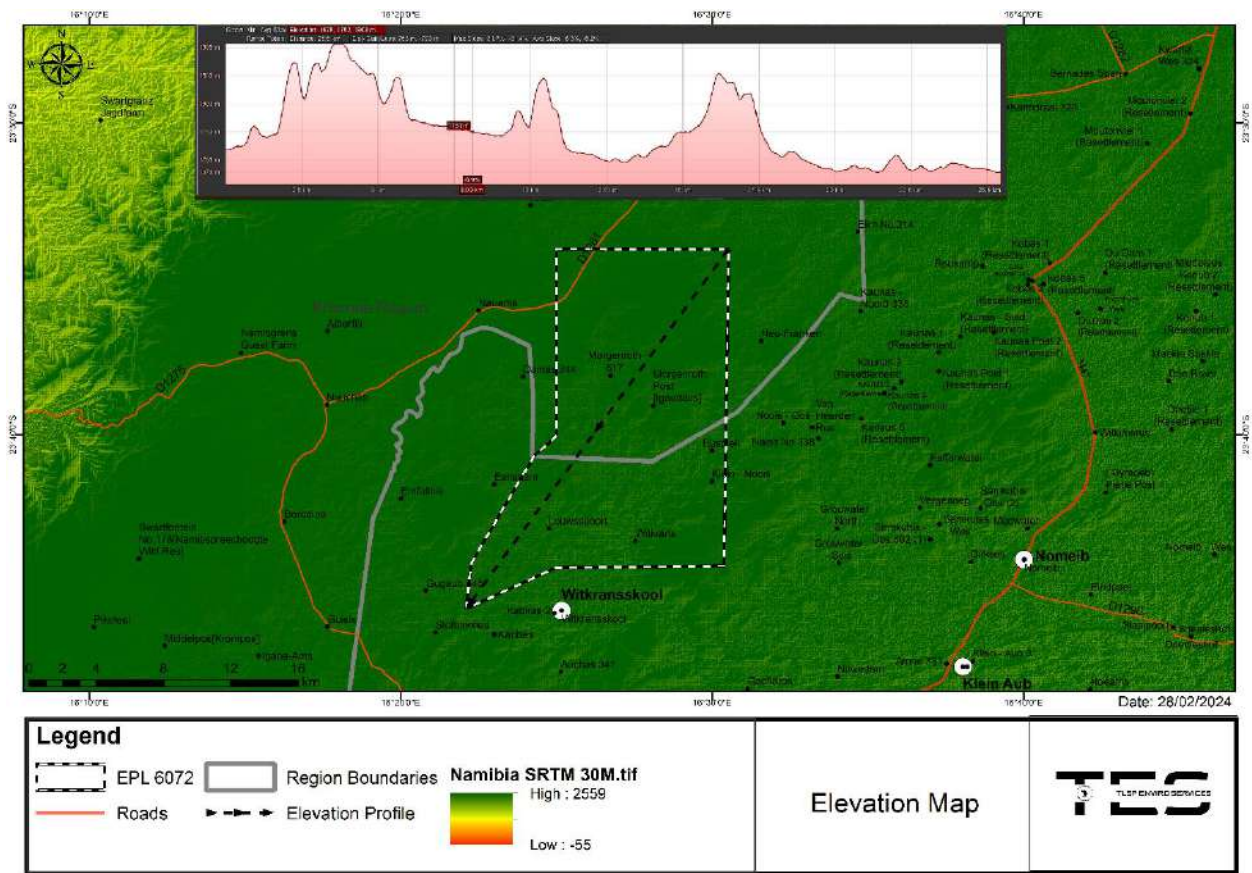


Figure 5 - Elevation map of the EPL 6072

4.3 HABITATS AND VEGETATION

The study area falls peculiarly within both the Nama Karoo and the Acacia tree and shrub savanna biomes, east of the escarpment transition zone (Geis, 1998). The Acacia tree and shrub savanna is generally characterised by open expanses of grasslands dotted with Acacia trees amongst others. The Project area is in the extreme west of this biome with a highland shrubland vegetation type, where one can expect to find more low height trees and shrubs i.e., the *Boscia albitrunca* (protected), *Albizia anthelmintica*, and the *Acacia erioloba* species (protected) *Aloe littoralis* (protected) occurring in a varied range of habitats and interspersed with grasslands and herbaceous plants. Here is a synopsis of the key habitats identified:

- **Hills/Topographically High Areas:** Rocky terrains typically exhibit high biodiversity and are thus considered essential habitats for all vertebrate fauna and flora.
- **Ephemeral Drainage Lines:** Various ephemeral drainage lines serve as vital habitats for larger trees, notably *Acacia erioloba* (protected), *Euclea pseudebenus* (protected), *Faidherbia albida* (protected), and *Ziziphus mucronata* (protected).

- **Plains/Topographically Low Areas:** Topographically low areas are also significant habitats, hosting *Acacia erioloba*, *Albizia anthelmintica*, and *Boscia albitrunca*.

Anthropomorphic activities, such as existing roads, tracks, land infrastructure, and prior excavations, are present throughout the general EPL area. The proposed mineral exploration aims to have a limited footprint, not expected to adversely impact the entire EPL area and its associated unique amphibians, mammals, reptiles, and flora species. All developments entail potential adverse environmental effects. Identifying crucial faunal and flora species, along with high-risk habitats in advance and incorporating environmentally acceptable mitigating measures, minimizes the overall impact of such development. The implementation and monitoring of mitigation measures detailed in the Environmental Management Plan (EMP) Report are anticipated to mitigate the potential negative impacts effectively.

Table 3 summarise the sensitivity of the various habitats.

Table 3 - Sensitivity scoring for habitats.

Habitat	Vegetation sensitivity before mitigation	Ecosystem services	Threat from proposed infrastructure before mitigation	Recovery potential	Total	Comments
High Areas	3	3	2	2	8	Potential damage easy to mitigate.
Rivers, drainage lines	3	5	2	3	13	Major drainage lines should not be considered for establishing additional access routes within the EPL.
Low areas / Plains	1	1	1	3	6	Low concern with mitigation
Scoring	1 = low; 2 = low/medium; 3 = medium; 4 =	1 = low; 2 = low/medium; 3 = medium; 4 =	1 = low; 2 = low/medium; 3 = medium; 4 =	1 = high; 2 = medium/high; 3 = medium; 4 =	Degree of concern increases as score rises	



Habitat	Vegetation sensitivity before mitigation	Ecosystem services	Threat from proposed infrastructure before mitigation	Recovery potential	Total	Comments
	medium/high; 5 = high	medium/high; 5 = high	medium/high; 5 = high	medium/low; 5 = low		

4.4 ALIEN SPECIES

The general EPL area contains a fair amount of *Prosopis glandulosa* trees and shrubs as well as domesticated cacti species within a few homesteads within the EPL area. These should be destroyed where they occur within exploration areas, and the species should not be re-introduced.

4.5 WATER RESOURCES: SURFACE AND LOCAL HYDROLOGICAL PROCESSES

For both domestic and industrial use approximately 200,000 litres of water per annum is required by the project.

Groundwater is sourced from the underlying fractured / porous aquifer that is moderately productive (Figure 6). This source of water is expected to be utilised for the Project if enough can be abstracted sustainably and utilised under strict monitoring controls. Initial data captured from the Hydrocensus work illustrated that the average rest water level within the EPL area is measured at 23 m from a sample of ten boreholes measured. The shallowest borehole from the sample group measured in at 11 meters (rwl).



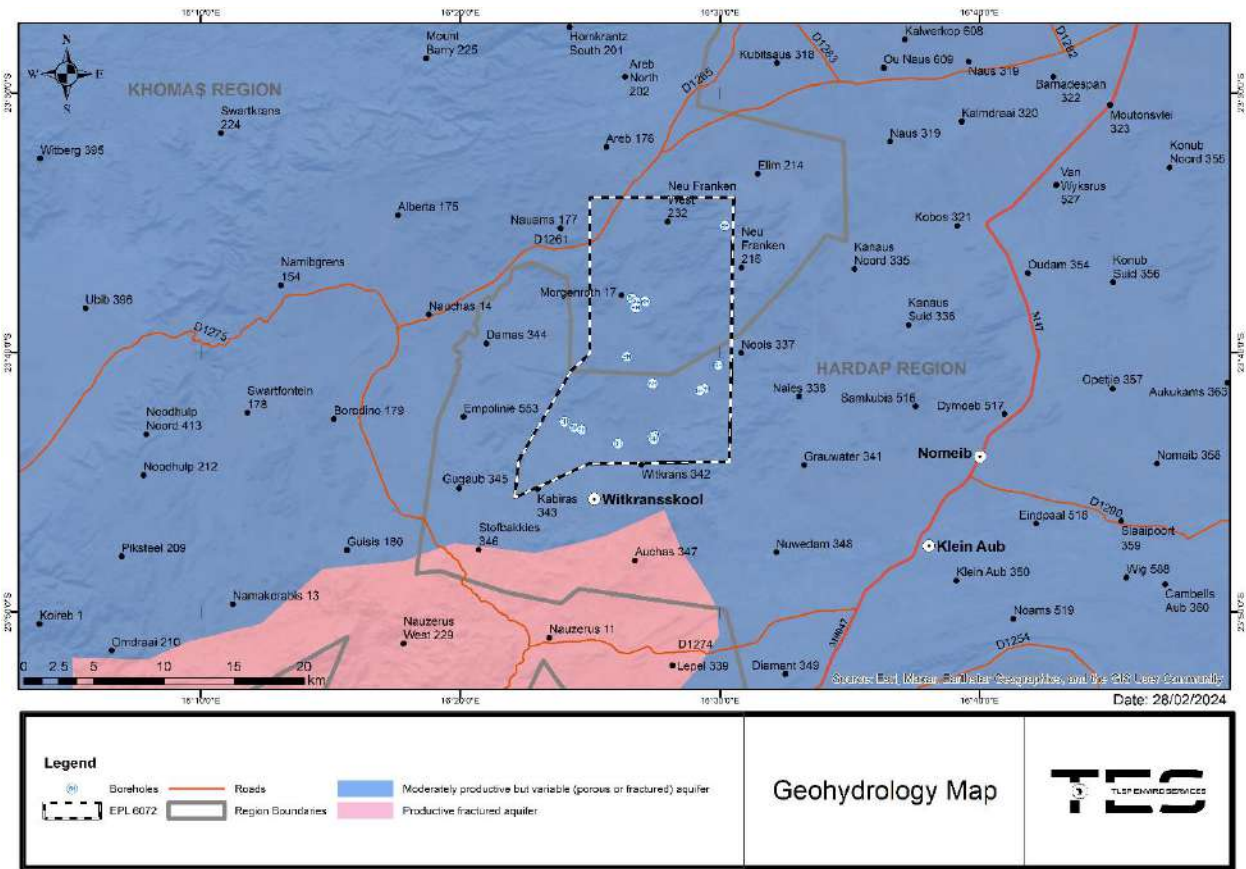


Figure 6 - Geohydrological map of EPL 6072

The ephemeral drainage lines (Figure 7) carry a considerable proportion of the plant biomass in this area and therefore abstraction from boreholes on the banks of drainage lines should preferably be avoided. The presence of important protected and keystone tree species is very evident within the larger drainage lines. The potential loss of keystone individuals, such as large camel thorns in the EPL area due to water over-abstraction should be avoided.

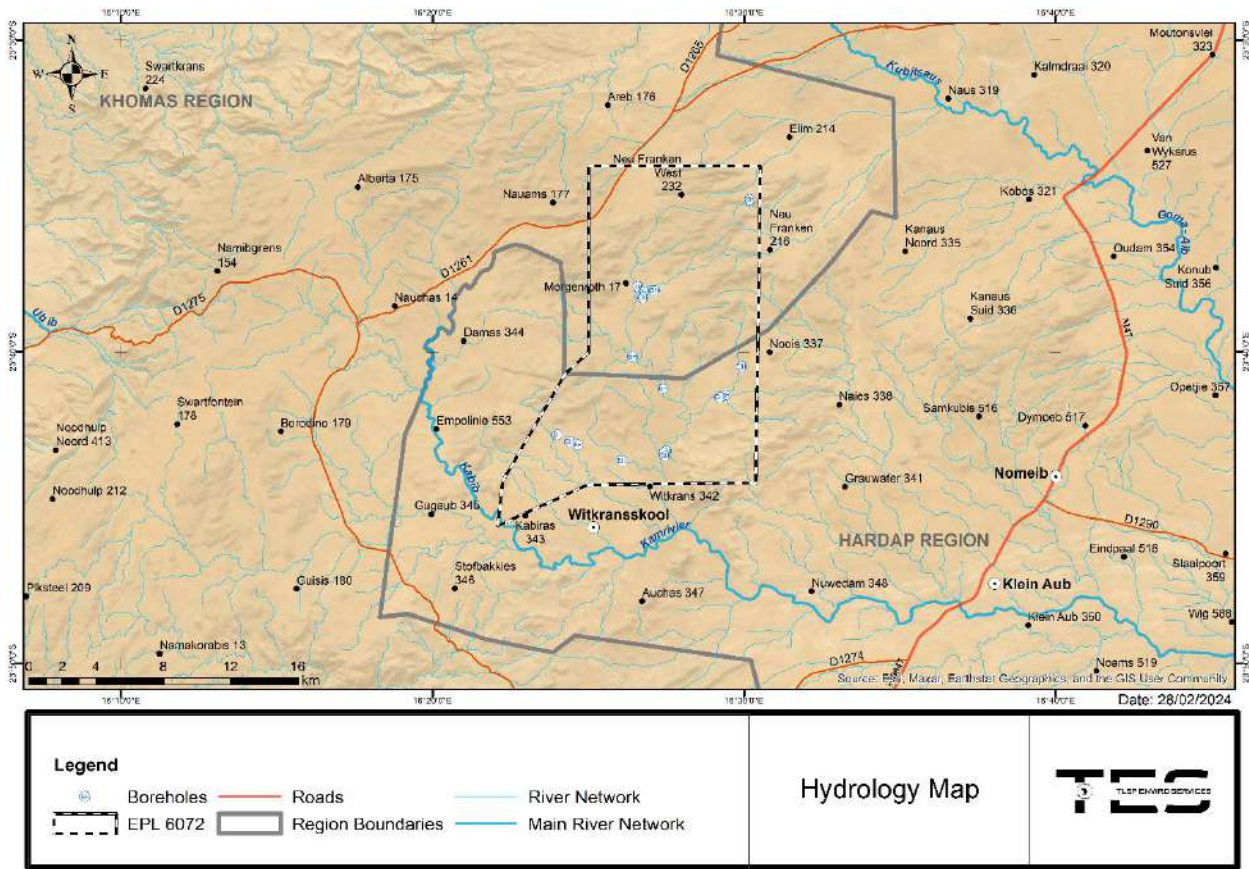


Figure 7 - Hydrology map of the Project area showing the stream order.

The project area does not overlap onto the main ephemeral river systems, which are the Kabib River that flows into the Kam River (south of the EPL) and the Kubitsaus River (north of the EPL), however some second and third order streams are large enough to carry a large amount of water downstream in the event of heavy rains. Most rivers in the EPL area drain in a south easterly direction.

4.6 HYDROGEOLOGICAL APPRAISAL

A hydrogeological appraisal was commissioned by the Proponent and carried out by T.E.S and aimed at assessing the groundwater situation for the Project using a 20km radius that centres from the proposed exploration areas.

The first part of the assessment was to interrogate the National Groundwater Database (GROWAS), to record and plot any boreholes (With its data, if any recorded). The outcome is displayed in Table 4.



Table 4 - Hydrocensus summary table

Bh ID	GROWAS	TLSP	Coordinates		RWL [mbgl]	Bh Depth [mbgl]	Yield [m3/h]	Farm Name	Comments	Sample [Y/N]
			Lat [S]	Long [E]						
WW66600			23.58510	16.50310			Neu Franken West	Source: GROWAS/SADCOR		
WW66629	TLSP5		23.59930	16.48170			Neu Franken West	Source: GROWAS		
WW25966	TLSP6		23.58710	16.50750			Neu Franken West	Source: GROWAS		
WW66629	TLSP5		23.59930	16.48170			Neu Franken West	Source: GROWAS		
WW25966	TLSP6		23.58710	16.50750			Neu Franken West	Source: GROWAS		
WW66291			23.63170	16.44330			Morgenroth	Source: GROWAS/SADCOR		
WW66292			23.63370	16.45200			Morgenroth	Source: GROWAS/SADCOR		
WW66293	Farm House		23.63487	16.44614		100	Morgenroth	Source: GROWAS/SADCOR/In-field assessment	Y	
WW66294	Not in use anymore		23.63760	16.44590			Morgenroth	Source: GROWAS/SADCOR		
WW66295	Mooiwater		23.66896	16.43967	13.54		Morgenroth	Source: GROWAS/SADCOR/In-field assessment		
	Pos		23.64011	16.40868	24.91			In-field assessment	Y	
	Solar		23.63796	16.45236	38.10			Pump was running		
WW66296	To Go 1		23.67450	16.49890			Rusplek	Source: GROWAS/SADCOR		
	Om Kaffer W/P		23.66240	16.54163			Rusplek	In-field assessment		
	Noois W/P		23.68207	16.48774			Noois	In-field assessment		
	Noois Lister Pump		23.67778	16.49998			Noois	In-field assessment		
	Noois Solar		23.68273	16.49449			Noois	In-field assessment	Y	
WW66297	To Go 2		23.68970	16.49010			Klein Noois	Source: GROWAS/SADCOR		
WW66502	Klein Noois BH3		23.69000	16.48760	16.10	100	Klein Noois	Source: GROWAS/SADCOR/In-field assessment		
	Klein Noois FH		23.68563	16.49329	24.40	50	Klein Noois	In-field assessment	Y	
	Klein Noois BH2		23.68726	16.49335			Klein Noois	In-field assessment		
WW66298	Quasimodo W/P		23.69670	16.45568			Witkrans	Source: GROWAS/SADCOR/In-field assessment	Y	
WW66302	Witkrans 2		23.72492	16.43570	18.32		Witkrans	Source: GROWAS/SADCOR/In-field assessment	Y	
WW66299	Witkrans FH		23.71918	16.45568	14.70		Witkrans Suid	Source: GROWAS/SADCOR/In-field assessment	Y	
WW66300			23.72090	16.45670			Witkrans Suid	Source: GROWAS/SADCOR		
WW66301	Witkrans Suid		23.72183	16.45522	11.15		Witkrans Suid	Source: GROWAS/SADCOR	Y	
	Witkrans Suid W/P		23.75758	16.41306	11.30		Witkrans Suid	In-field assessment		
WW66303	Louwspoor 2		23.71102	16.39895			Louwspoor	Source: GROWAS/SADCOR/In-field assessment		
WW66304	Louwspoor 1		23.71488	16.40552			Louwspoor	Source: GROWAS/SADCOR/In-field assessment		
WW66305			23.71620	16.41120			Louwspoor	Source: GROWAS/SADCOR		
	Louwspoor 3		23.72421	16.40408			Louwspoor	Source: GROWAS	Y	
WW67846	TLSP1		23.58340	16.42300			Nauams	Source: GROWAS/In-field assessment		
WW24075	TLSP2		23.58550	16.41870		45.7	Nauams	Source: GROWAS		
WW30995	TLSP3		23.58730	16.42720		82	Nauams	Source: GROWAS		
WW30996	TLSP4		23.59280	16.41960	55.00	97	9 Nauams	Source: GROWAS		

Ground truthing was done on a selection of boreholes (see table 5 above), as to verify a borehole's condition, depth, rest water level (RWL) and water samples taken for integration to the ongoing geohydrology baseline study for the ensuing EIA. As it is often the case, not all boreholes are recorded in the GROWAS system, and the in-field findings will be added to the records.

4.7 AVIFAUNA AND FAUNA

The avifauna species listed in Table 5 was abstracted from the Bird Atlas of Namibia (1997) database. The list was abstracted using the Quarter Degree Square placement of the project area (2316DC). The species protection status was determined from the legislation type each species is recorded under. The Nature Conservation Ordinance, Schedule 4, lists various species as "Protected Game", whilst the Marine Resources Act, list species as "Protected Species". Bird diversity in the project area and surrounds is measured at 141-170 species out of a total recorded avifaunal base of 658 species in Namibia.

Table 5 - Avifauna species list with their legal status within Namibia

Scientific Name	Common Name	Namibian legal Status
Agapornis roseicollis	Rosy-faced Lovebird	Protected game



Scientific Name	Common Name	Namibian legal Status
<i>Alopochen aegyptiaca</i>	Egyptian Goose	Protected species
<i>Anas erythrorhyncha</i>	Red-billed Teal	Protected species
<i>Batis pririt</i>	Pirit Batis	Protected game
<i>Cercomela familiaris</i>	Familiar Chat	Protected game
<i>Cercomela schlegelii</i>	Karoo Chat	Protected game
<i>Certhilauda subcoronata</i>	Karoo Long-billed Lark	Protected game
<i>Charadrius tricollaris</i>	Three-banded Plover	Protected species
<i>Corythaixoides concolor</i>	Grey Lourie	Protected game
<i>Dicrurus adsimilis</i>	Fork-tailed Drongo	Protected game
<i>Emberiza impetuani</i>	Lark-like Bunting	Protected game
<i>Eremomela icteropygialis</i>	Yellow-bellied Eremomela	Protected game
<i>Estrilda erythronotos</i>	Black-faced Waxbill	Protected game
<i>Hirundo fuligula</i>	Rock Martin	Protected game
<i>Hirundo rustica</i>	Barn Swallow	Protected game
<i>Lamprotornis nitens</i>	Cape Glossy Starling	Protected game
<i>Laniarius atrococcineus</i>	Crimson-breasted Shrike	Protected game
<i>Lanioturdus torquatus</i>	White-tailed Shrike	Protected game
<i>Lanius collaris</i>	Common Fiscal	Protected game
<i>Melierax canorus</i>	Pale Chanting Goshawk	Protected Game. CITES Appendix II
<i>Merops hirundineus</i>	Swallow-tailed Bee-eater	Protected game
<i>Monticola brevipes</i>	Short-toed Rock-thrush	Protected game
<i>Muscicapa striata</i>	Spotted Flycatcher	Protected game
<i>Numida meleagris</i>	Helmeted Guineafowl	Huntable Game Bird
<i>Oena capensis</i>	Namaqua Dove	Protected game
<i>Oenanthe monticola</i>	Mountain Wheatear	Protected game



Scientific Name	Common Name	Namibian legal Status
<i>Onychognathus nabouroup</i>	Pale-winged Starling	Protected game
<i>Parisoma subcaeruleum</i>	Chestnut-vented Tit-babbler	Protected game
<i>Parus cinerascens</i>	Ashy Tit	Protected game
<i>Passer melanurus</i>	Cape Sparrow	No protection status
<i>Passer motitensis</i>	Great Sparrow	No protection status
<i>Philetairus socius</i>	Sociable Weaver	Protected game
<i>Plocepasser mahali</i>	White-browed Sparrow-weaver	Protected game
<i>Ploceus velatus</i>	Southern Masked-weaver	No protection status
<i>Prinia flavicans</i>	Black-chested Prinia	Protected game
<i>Pterocles namaqua</i>	Namaqua Sandgrouse	Huntable Game Bird
<i>Pycnonotus nigricans</i>	African Red-eyed Bulbul	No protection status
<i>Rhinopomastus cyanomelas</i>	Common Scimitarbill	Protected game
<i>Sporopipes squamifrons</i>	Scaly-feathered Finch	Protected game
<i>Streptopelia capicola</i>	Cape Turtle-dove	Huntable Game Bird
<i>Streptopelia senegalensis</i>	Laughing Dove	Huntable Game Bird
<i>Tadorna cana</i>	South African Shelduck	Protected game / protected species
<i>Tricholaema leucomelas</i>	Acacia Pied Barbet	Protected game
<i>Urocolius indicus</i>	Red-faced Mousebird	No protection status
<i>Vanellus coronatus</i>	Crowned Lapwing	Protected game / protected species

Among the 73 mammal species anticipated to inhabit the general vicinity of the EPL area, 11% are endemic, while 38% are categorized under international conservation legislation. Notably, rodents constitute the most significant group at 34%, of which 16% are endemic, followed by carnivores at 23% (6% endemic) and bats at 15% (9% endemic).



Several species within the region, excluding those considered endemic, are designated as rare (e.g., Namibian Wing-gland Bat, Hedgehog, and Black-footed Cat), endangered (Brown Hyena and Hartmann's Mountain Zebra), and vulnerable (e.g., Pangolin) under international legislation. The Black-footed Cat, a carnivore species, is particularly vulnerable to indiscriminate persecution across its habitat range.

Mammals, especially small mammals like rodents and bats, as well as carnivores, are well represented in the area. However, bats, which remain relatively understudied, may be underrepresented due to limited surveying efforts. Carnivores, notably, are often subject to indiscriminate killing, particularly in rural sheep farming communities in and surrounding the area, with the Black-footed Cat facing significant threats as one of the most endangered carnivore species in the region.

4.8 REPTILES AND AMPHIBIANS

Namibia has recorded approximately 250 species of reptiles, 59 of these are endemics (24% endemism). Most of these reptilian species utilise the high topographical areas (rocky hills) as breeding and hunting ground as well as well vegetated riparian vegetation along drainage lines. The following reptile species is expected to occur with the EPL area and are protected under the Nature Conservation Ordinance of 1975.

Scientific Name	Common Name	Status
Psammobates Oculiferus	Kalahari Tent Tortoise	Protected.
Python Natalis	Southern African Python	Protected.
Geochelone Pardalis	Leopard Tortoise	Protected.
Varanus Albigularis	Veld Leguaan	Protected

Two species of toads are endemic (Poyntonophrynus (Bufo) hoeschi and Phrynomantis annectens) (Griffin 1998b) and 1 species classified as near threatened due to habitat loss and development (Pyxicephalus adspersus) (Du Preez and Carruthers 2009). The area is understudied, but it is expected that the Poyntonophrynus (Bufo) hoeschi, an arid-adapted toad species may occur in suitable habitat within the EPL during the rainy season.

4.9 FLORA

EPL 6072 is positioned within both the Acacia tree and shrub savanna biome (North and central part of the EPL), and to a far lesser extent the Nama Karoo biome (southern part of the EPL). The dominant vegetation structure across the EPL is classified as dwarf shrub savanna (See Figure 8).



The project area is nestled amongst the hills along the edge of the central western escarpment zone, an area classified with moderate woody diversity. The lower woody diversity is probably partly due to the lower rainfall and partly to the cold winter temperatures and occurrence of frost (Curtis & Mannheimer, 2005). Plant diversity, which is a measure of a plant's distribution, is measured at between 50-99 species for the project area. The major variables affecting the diversity of plants are habitat and climate (Mendelsohn, 2002).

The dominating annual grasses in almost all grazing areas in Namibia currently include *Schmidtia kalahariensis*, *Chloris virgata*, *Eragrostis porosa*, *Eneapogon cencroides*, and *Urochloa brachyuran*, which also occur within the EPL and surrounding areas (Hoffmann, 2005; Mander et al., 2010). The dominating perennial grasses are *Stipagrostis uniplumis*, *Stipagrostis obtusa*, *Stipagrostis hochstetteriana*, *Eragrostis pallens*, *Eragrostis rigidior*, and *Aristida stipitata*, amongst others (Mander et al., 2010; Shackleton et al., 2016). The most valuable perennial grasses such as *Cenchrus ciliaris*, *Brachiaria nigropedata*, *Antheophora pubescens*, and *Schmidtia pappophoroides* are only observed in well-managed or least disturbed areas in some parts of the country (Hoffmann, 2005; Mander et al., 2010; Shackleton et al., 2016).

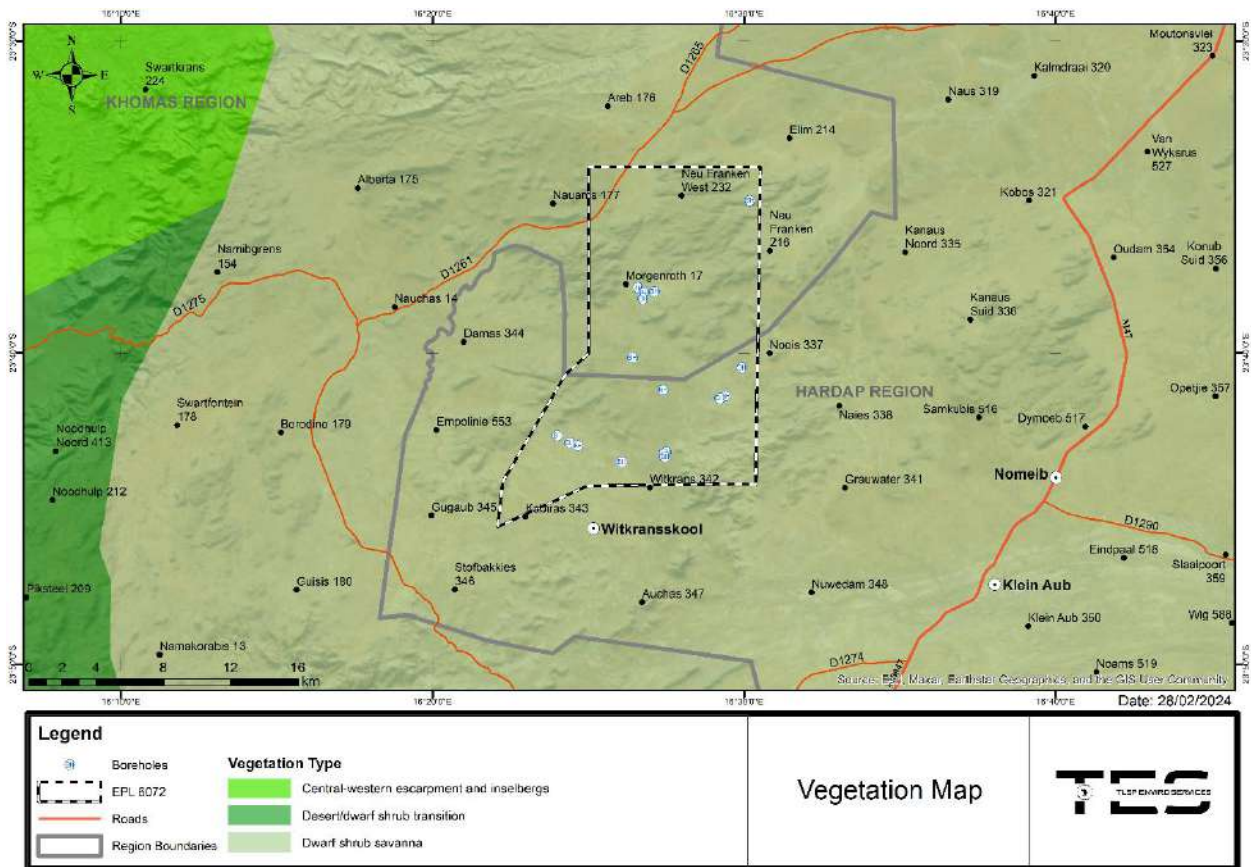


Figure 8 - Vegetation structure of the general area overlapping EPL 6072



Some species, such as *Acacia erioloba* (camel-thorn), *Acacia mellifera* (swarthaak) and *Boscia albitrunca* (witgat), all of which are present in the project area have a very wide distribution over much of the country, which is largely due to their tolerance of a wide range of habitats and climatic conditions (Curtis & Mannheimer, 2005). The *Acacia erioloba*, *Boscia albitrunca* and the *Aloe littoralis* (Bergaalwyn) are protected species under the Nature Conservation Ordinance and serve as a representative species type sample of the project area.

Within the Project area impenetrable thickets of thorny shrubs were observed and are predominantly formed by indigenous, and often thorny, species – *Acacia mellifera* (black-thorn acacia), and the *Acacia reficiens* (red umbrella-thorn). The *Acacia nebrownii* (slapdoring), *Acacia karroo* (soetdoring), and *Acacia Senegal* (Three-hook acacia) although present in the project area has a disjunct distribution which may be determined by its tolerance of calcrete and other poor-quality soils.

Other species with economic viability in the surrounding region include *Harpagophytum procumbens* (commonly known as Devil's claw), which is harvested for medicinal use but is frequently subject to overexploitation. Additionally, *Citrullus lanatus* (Tamma melon), typically found in sandy soil, and *Terfezia pfeilii* (known as N'abba or Kalahari truffle) possess significant economic potential (Mendelsohn et al., 2002; Mannheimer and Jacobson, 1998).

4.10 GEOLOGY AND SOILS

The Project area is a south-westerly extension of the Rehoboth Plateau, characterized by rolling inselbergs / mountains and deeply incised river systems in some areas. Granites and complexes of metamorphic rocks underlie the plateau in most areas (Mendelsohn, 2002).

The geological characteristics of the region are primarily defined by Neoproterozoic (1300 – 900 Ma) basins, specifically the Sinclair Sequence and its equivalents. These basins manifest as sporadic troughs extending from Southern Namibia into the northern region of Botswana. Within the specified tenement, the Sinclair Sequence is underpinned by basement rocks belonging to the Rehoboth Inlier. The Rehoboth Inlier comprises the Elim Formation (part of the Rehoboth Sequence), the Piksteel Granodiorite, and the Kobos Granite. Figure 9 is a visual illustration of the geological age of the rocks underlying the EPL area comprising the oldest rocks and Namaqua metamorphic Complex and related rocks.



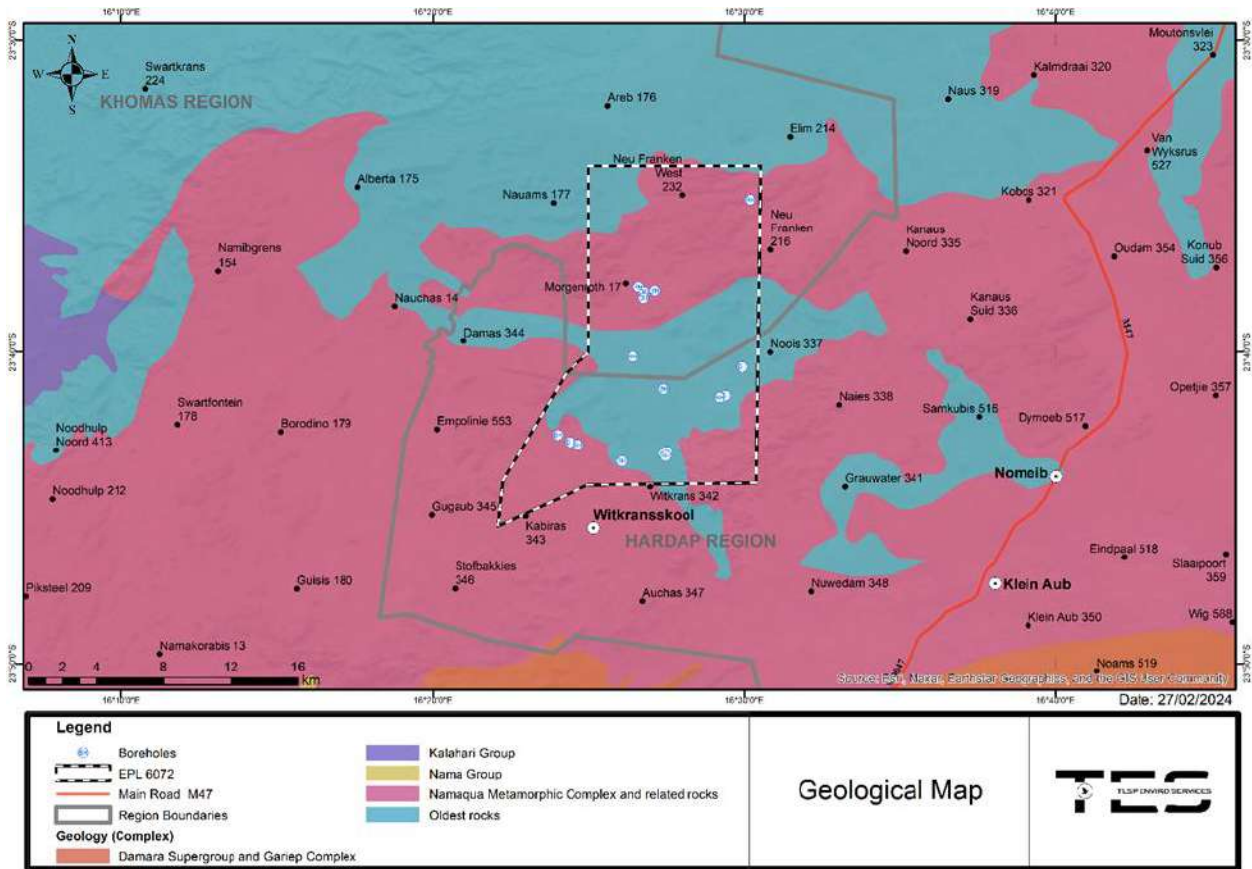


Figure 9 – The Geology of EPL 6072.

The Sinclair Sequence is categorized into four formations, listed from bottom to top as follows: Nukopf Formation, Grauwater Formation, Dornpoort Formation, and Klein Aub Formation. This sequence experiences an unconformable overlay by the Damara sequence of the Kamtsas Formation. The lower part of the Sinclair Sequence, constituted by the Nukopf and Grauwater Formations, predominantly consists of rhyolitic volcanic rocks, accompanied by subordinate conglomerate, quartzite, and minor basalt. The upper part, formed by the Dornpoort and Klein Aub Formations, consists of continental, partly evaporitic red beds interspersed with tholeiitic basalt. These layers are further overlaid by fine clastic sedimentary rocks and minor carbonate (Robb, 2011).

Adjacent to the studied area, strata-bound copper, silver, and gold mineralization are observed in conglomerates and metasediments of the Klein Aub Formation, specifically associated with the Klein Aub Fault. Gold mineralization is reported to be linked with the Piksteel Granodiorite. (Robb, 2011).

The project area is covered by dominant eutric leptosols. These are shallow soils with poor water holding capacity and infused with gravel. These soils can only support low densities of livestock and wildlife (Mendelsohn, 2002) and not suitable for crop production. See Figure 10.



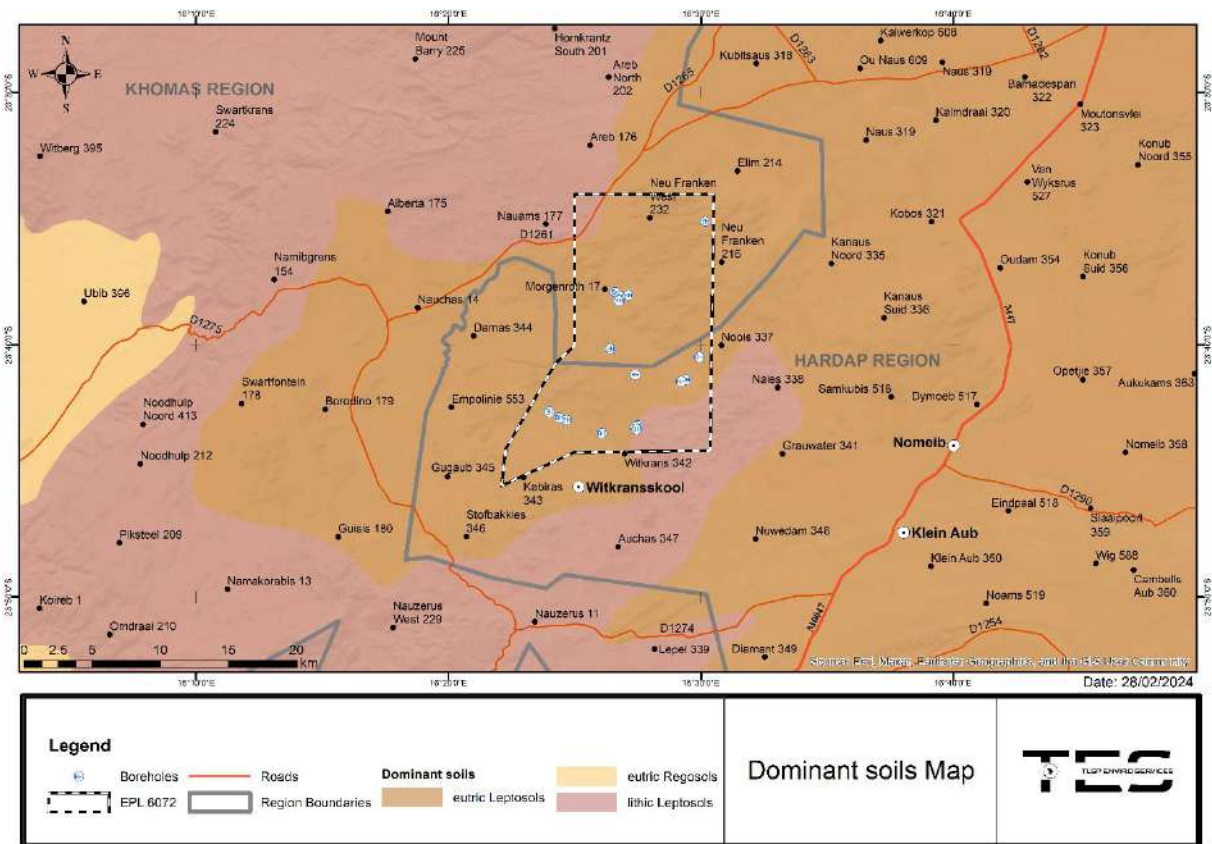


Figure 10 - Dominant soils.

4.11 SOCIOECONOMIC CONDITIONS (POPULATION DEMOGRAPHICS, SENSE OF PLACE AND CULTURAL RESOURCES)

The EPL does not impinge on any protected areas. Ten farms are overlapped by the EPL, most of whom's homesteads fall within the EPL and some outside the EPL. These farms are:

- Neu Franken 232 (mainly High topographical areas / mountains)
- Neu Franken 213
- Nauams 177
- Morgenroth 17
- Noois 337
- Klein Noois
- Witkrans 342
- Witkrans Suid
- Kabiras 343, and



– Louwspoot

The farms are mostly inhabited by its owners and farm workers. All the farms within the EPL area are operated as commercial livestock rearing operations. Most livestock types present in the EPL area are goats, sheep and cattle of various breeds.

Livestock carrying capacity is regarded as low to medium and farming risk as medium due to certain factors for example, the availability of browse, grazing and green biomass production, all of which are classified as below average for the region (Mendelsohn, 2002).

The closest settlement to the EPL where small scale commercial retail and services could be accessed from is Klein Aub, located southeast of the EPL along the M47 district road. The largest town with a broader array of services is Rehoboth, approximately 94 km north of the EPL. Two tourism establishments are located west of the EPL, which are Namibgrens Guestfarm and the newly established Stofpad Lodge and Camping facility. These establishments are situated along the D1261 road west of the EPL. See Figure 11.

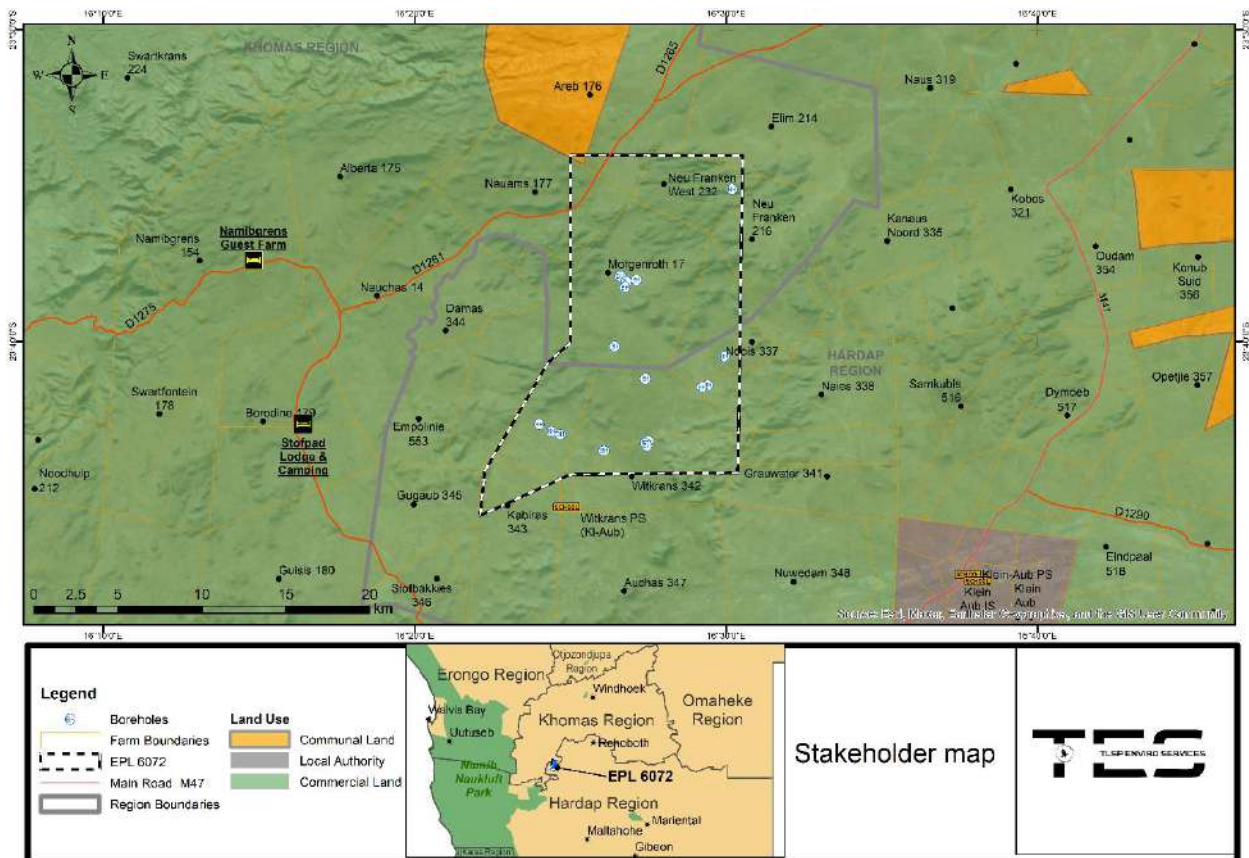


Figure 11 - Stakeholder map of the general area.



4.12 SENSE OF PLACE

No adverse impact is expected from the proposed exploration activities since the physical footprint of exploration activities is limited and retain a high potential for landscape restoration. However, the emotive bonds and attachments the inhabitants of this area have formed with the natural environment and its shared history should be valued and respected and ways of merging the implementation of the proposed exploration activities with this aspect of the area's social landscape should be sought by all parties involved.

4.13 CULTURAL HERITAGE

The initial field survey conducted by Otah Consultants (2024) confirmed that the proposed project area is situated within a contemporary cultural landscape dotted with human habitations with a long and rich local history. The field survey discovered some heritage and archaeological sites of value; hence a 'Chance-Find Procedure' is highly recommended should the application for Heritage Consent is approved by the National Heritage Council of Namibia.

These sites are listed below. The heritage and archaeological specialist report once completed will be contained in the Phase2 scoping report.

1. Farm Rusplek

Site 1: Man-made water dam and well – Figure 12

Site coordinates: 23° 40' 38'' S 16° 30' 02'' E

Description: Delapidated man-made water dam structures and a water well that was previously used by the farm owners.

Significance rating: 2

Vulnerability rating: 4

Records: Photographs and fieldnotes

Reversibility rating: Irreversible



Condition assessment: Stable condition.



Figure 12 - Man-made water dam and well in Farm Rusplek (Source: Author, 2024)

2. Farm Klein Noois

Site 1: Burial site – Figure 13

Site coordinates: 23° 41' 27'' S 16° 29' 09'' E

Description: 11 fenced-off graves, some are marked with tombstones others are not. According to the farmer workers, they belong to the previous farm workers.

Significance rating: 3

Vulnerability rating: 3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.





Figure 13: Burial site in Farm Klein Noois (Source: Author, 2024)

3. Farm Karibas

Site 1: A community burial site – Figure 14

Site coordinates: 23° 45' 28'' S 16° 24' 58'' E

Description: A burial site with a number of fenced-off and unfenced graves. **NB:** The burial site is NOT located within the area of interest but is near the EPL boundaries (around 0.4km from the EPL).

Significance rating: 3

Vulnerability rating: 3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Fair condition





Figure 14: Burial site in Farm Karibas (Source: Author, 2024)

Site 2: Burial site – Figure 15

Site coordinates: 23° 46' 18'' S 16° 22' 59'' E

Description: A burial site with a number of fenced-off and unfaced graves. **NB:** The burial site is NOT located within the area of interest but is near the EPL boundaries (around 2.4km from the EPL).

Significance rating: 3

Vulnerability rating: 3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.





Figure 15: Burial site in Farm Karibas (Source: Author, 2024)

4. Farm Witkans

Site 1: Family Burial site - Figure 15

Site coordinates: 23° 43' 05'' S 16° 27' 12'' E

Description: Fenced-off 11 unmarked graves, 9 marked with tombstones. The graves belong to the Benade family according to the farm workers.

Significance rating: 3

Vulnerability rating: 3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.





Figure 16: Burial site in Farm Witkans (Source: Author, 2024)

Site 2: A previous underground mine – Figure 17

Site coordinates: 23°43' 29" S 16° 26'02" E

Description: An entrance of a closed underground mine.

Significance rating: 3

Vulnerability rating: 2

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.





Figure 17: Previous underground mine entrance on Farm Witkans (Source: Author, 2024)

Site 3: Primary Stone Crusher- Figure 17

Site coordinates: 23°43' 32'' S 16° 26'00'' E

Description: A primary stone crusher from previous mining activities.

Significance rating: 4

Vulnerability rating:3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.



Figure 18: Primary Crusher Farm Witkans (Source: Author, 2024)



Site 4: Ruins of old building structures Figure 19

Site coordinates: 23°43' 32'' S 16° 25'59'' E

Description: Building ruins in close proximity of the primary crusher which is assumed to be part of the previous mining.

Significance rating: 2

Vulnerability rating: 2

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Stable condition.



Figure 19: Ruins of old building structures (Source: Author, 2024)

5. Farm Louwspoot**Site 1: Burial site – Figure 20**

Site coordinates: 23° 43' 17'' S 16° 24' 15'' E

Description: 5 fenced-off graves that belong to the Louw family according to the farm worker.

Significance rating: 3

Vulnerability rating: 2

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.





Figure 20: Burial site in Farm Louwspoor (Source: Author, 2024)

6. Farm Morgenroth

Site 1: Primary Stone Crusher – Figures 21 and 22

Site coordinates: 23°39' 58'' S 16° 26'24'' E

Description: A primary stone crusher from previous mining activities.

Significance rating: 4

Vulnerability rating:3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Good condition.





Figure 21: Primary crusher from the previous mine in Farm Morgenroth (Source: Author, 2024)



Figure 22: A conveyor connected to the above Primary crusher with a visible load of rocks from previous mining activities in Farm Morgenroth (Source: Author, 2024)



Site 2: Burial site – Figure 23

Site coordinates: 23° 37' 52'' S 16° 26' 52'' E

Description: Unfenced burial site, some marked and some unmarked.

Significance rating: 3

Vulnerability rating: 3

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Poor condition.



Figure 23: Burial site in Farm Morgenroth (Source: Author, 2024)

Site 3: Granite block with rock art paintings - Figures 24 and 25

Site coordinates: 23° 40' 08'' S 16° 26' 30'' E

Description: A granite block with rock art paintings, depicted in the forms of animal and human figures.

Significance rating: 5

Vulnerability rating: 5

Records: Photographs and fieldnotes

Reversibility rating: Irreversible

Condition assessment: Poor condition (not well preserved as it is exposed to direct sunlight and most figures are fading).





Figure 24: A block of granite with a couple of rock paintings in Farm Morgenroth (Source: Author, 2024)



Figure 25: A. D- Stretched image of the above image in Farm Morgenroth (Source: Author, 2024)



4.14 IDENTIFICATION OF ANY POTENTIAL CONFLICTS OR SENSITIVITIES RELATED TO THE PROJECT FROM BASELINE

The main intersection of importance (sensitivity) on this project is the potential influence of project aspects on the biosphere, particularly disturbance to the endemic and protected flora diversity existing on site and the protected fauna species in the general area. This would require the Proponent to design project components around this aspect to avoid impacting these flora and fauna species negatively. The conservation of heritage artefacts is itself an important historical intersection with the newly proposed landscape activities and requires appropriate management. If impact avoidance is not possible, then reduction should be implemented through the regulatory control in place (i.e., seeking the relevant permit to remove and relocate a plant species, etc.). Poaching of fauna species should be strongly discouraged and met with strict disciplinary measures if encountered. Groundwater conservation should be implemented as a physical and social obligation.



5 IMPACT ASSESSMENT PROCESS AND METHODOLOGY

5.1 PROCESS

Identify the project's potential impacts:

- Conduct a site visit and review project plans to identify potential impacts.
- Consult with stakeholders, including community members, government agencies, and NGOs, to identify concerns and issues (where applicable). Evidence of the public consultation process can be seen in Appendix B of the report.
- Review relevant regulations and guidelines to identify potential impacts.

Categorize impacts:

- Categorize impacts based on their environmental, social, and economic dimensions.
- Identify whether each impact is direct or indirect, and primary or secondary.
- Consider the scale of each impact, including the size, intensity, and duration.

Evaluate the significance of impacts:

- Assess the significance of each impact based on its overall score or ranking.
- Determine whether each impact is significant or not, based on a predetermined threshold or criteria.
- Consider the potential for cumulative impacts (where applicable), which may be significant even if individual impacts are not.

Mitigate impacts:

- Develop a plan to mitigate or reduce significant impacts, including measures to prevent or minimize negative impacts and enhance positive impacts.
- The Proponent (where applicable) should consider alternative project designs or locations that could reduce impacts.

5.2 SUMMARY OF THE POTENTIAL IMPACTS IDENTIFIED DURING PHASE 1 SCOPING.

The following potential impacts were drawn out from the sensitivities identified from the baseline conditions of the receiving environment, legal environment in relation to the exploration activities on the mining claims. These potential impacts were screened and do fall within the scope of the project and can be addressed in the EMP. These impacts are grouped below according to their nature.

Biophysical Impacts



- A. Land disturbance: soil erosion by wind action and surface run-off from bulk sampling and trenching stockpiles.
- B. Vegetation disturbance: Loss of or disturbance to flora species.
- C. Poaching of protected fauna species i.e., mammals and carnivores, as well as livestock.
- D. Pollution potential: groundwater pollution through seepage of hydrocarbons and untreated sewage effluent and other hazardous substances through geological fractures of a porous nature into groundwater. Soil pollution by hydrocarbons, oil and grease release into the environment.
- E. Air quality: Exploration activities can generate dust, which can have a negative impact on the local air quality, potentially leading to respiratory problems and other health issues for the sensitive receptors.

Health Impacts

- F. Noise pollution: Mining operations can generate significant noise, which can impact workers due to prolonged exposure.
- G. High summer temperatures may contribute to dehydration and heatstroke of employees if they are exposed to high temperatures over an extended period of time without mitigation.

Anthropogenic Impacts

- H. Waste proliferation: exploration generates significant amounts of waste material, including domestic and industrial waste (i.e., potentially hazardous chemicals). Proper waste management practices must be implemented to ensure that these materials do not contaminate local ecosystems and water resources.
- I. Socioeconomic positive impact through increased spending in the local economy and limited job creation.
- J. Increased traffic volumes to and from the EPL.
- K. Damage to recorded heritage sites.

5.3 ASSESS THE SIGNIFICANCE OF EACH IMPACT USING A STANDARDIZED METHODOLOGY

To ensure uniformity, the assessment of potential impacts will be addressed in a standard manner so that a wide range of impacts are comparable. Each impact identified will be assessed in terms of probability (likelihood of occurring), extent (spatial scale), intensity (severity) and duration (temporal scale). To enable a scientific approach to the determination of the impact significance (importance), a numerical value will be linked to each rating scale. The sum of the numerical values will define the significance. The following criteria will be applied to the impact assessment for the EIA/EMP. See Table 8.



Table 6 - Significance rating table scales definitions

Criteria	Description
Nature	Reviews the type of effect that the proposed activity will have on the relevant component of the environment and includes "what will be affected and how?"
Extent	Geographic area: Indicates whether the impact will be within a limited area (on site where construction is to take place); local (limited to within 25km of the area); regional (limited to ~200km radius); national (limited to the coastline of Namibia); or international (extending beyond Namibia's borders).
Duration	Whether the impact will be temporary (during construction only), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent.
Criteria	Description
Intensity	Establishes whether the magnitude of the impact is destructive or innocuous and whether or not it exceeds set standards, and is described as none (no impact); low (where natural/ social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements).
Probability	Considers the likelihood of the impact occurring and is described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures).
Significance	Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the road realignment route can be used, but with deviations or mitigation). High where it could have a "no-go" implication regardless of any possible mitigation (an alternative route should be used).
Status of the impact	A statement of whether the impact is positive (a benefit), negative (a cost), or neutral. Indicate in each case who is likely to benefit and who is likely to bear the costs of each impact.



Criteria	Description
Degree of confidence in predictions	Is based on the availability of specialist knowledge and other information.

5.4 ENVIRONMENTAL CONTROL TYPES

There are three different types of controls (Figure 26) available to deal with the effects of residual impacts experienced on any project, and the aim is to lessen the significance value of these residual impacts to a lower and acceptable tier, in order to make them generally more manageable and environmentally friendly. Specifically designed mitigation measures per impact identified in this assessment are contained within the environmental management plan (EMP) contained within Appendix A.

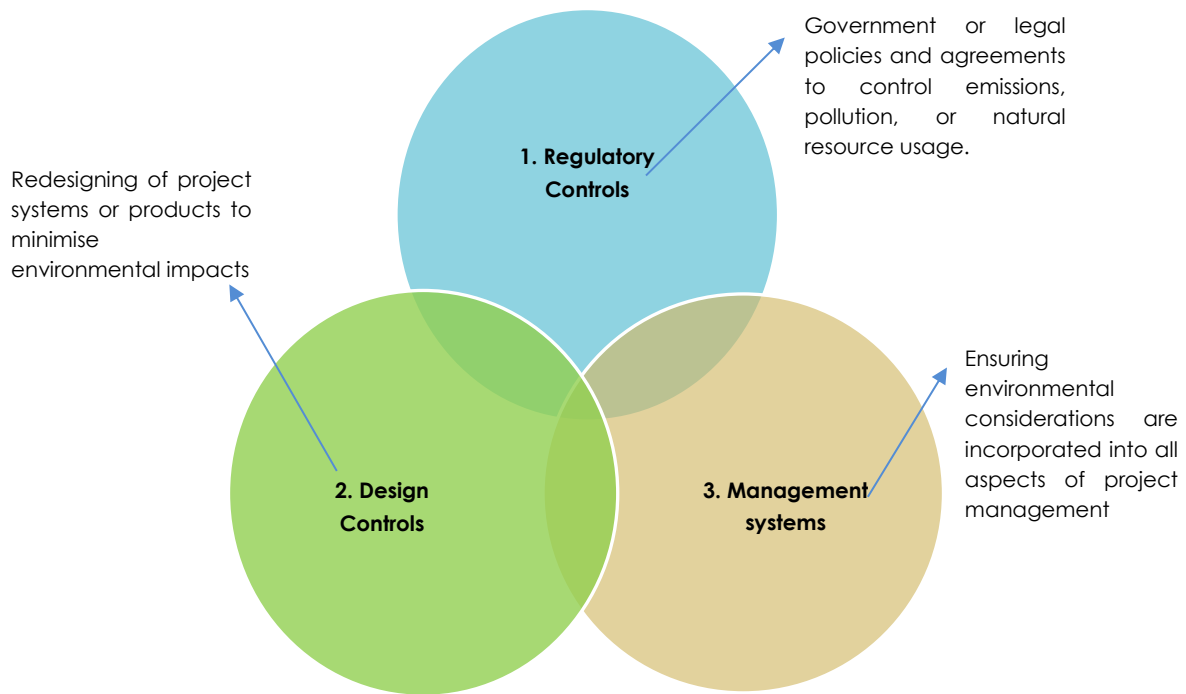


Figure 26 - Environmental control types



6 MITIGATION AND MONITORING

Boreholes not used as production boreholes must be used to monitor water table levels during the exploration phase. The water threshold should never be allowed to drop below what is thought to be the lowest natural level. Dropping of the water table should be kept as slow as possible.

6.1 MITIGATION

The following measures to avoid or reduce damage to sensitive areas and vegetation are recommended:

- As far as possible the koppies and ridges and the ephemeral rivers and other large drainage valleys should be avoided.
- Unnecessary flora collateral damage, especially during construction and operations should be prevented. Special care should be taken in the riparian vegetation / drainage line areas.
- Water usage should be strictly controlled and the water table monitored to prevent excessive drops.
- Water drainage down the valley should be enabled, not blocked by overburden.
- Wood harvesting on site and in elsewhere should be minimised by providing alternative cooking fuel.
- Workers access to livestock kraals/ pens should be restricted.
- Linear infrastructure should upgraded and maintained and dust suppression methods on these applied.

6.2 MONITORING

6.2.1 GROUNDWATER MONITORING

The water table should be strictly monitored through the monitoring boreholes. Abstraction should be controlled so that levels do not drop more than the permissible limit (will be determined by the geohydrology simulation models), and the rate of lowering should preferably be held well below that.

The condition of *Acacia erioloba* and the *Boscia albitrunca* should be established and monitored regularly, as these species condition scan be an indicator for lowering groundwater levels.



6.2.2 AMBIENT AIR QUALITY MONITORING

Dust collection sampling and analysis should continue to establish safe working conditions during site establishment, construction and operations. The Namibian Atmospheric Pollution Prevention Ordinance (No. 11 of 1976) does not include any ambient air standards to comply with. Typically, when no such local criteria exist, or are in the process of being developed, reference is made to international criteria.

According to <https://air.plumelabs.com> the air in this area is pure and ideal for outdoor activities.

Baseline dust deposition monitoring will commence for EPL 6072. Eight dust monitoring stations will be installed and fitted with the appropriate bucket size according to the ASTM D1739 standard each to collect dust fallout from the environment. The dust buckets will be exposure to the elements on site between 28-32 days. The subsequent monthly results are used to develop a long-term air quality trend of the project's activities on local ambient air quality within and outside the EPL.

The three main purposes of a fallout dust monitoring programme are:

- To meet legislative requirements;
- To indicate long term trends; and
- To generate or maintain awareness of dust generating activities on site.

The evaluation criteria used to evaluate the concentration of dust volume per dust station is illustrated in Table 6.

Table 6 - Evaluation Criteria for dust fallout control

Restriction areas	Dustfall rate (D) mg/m ² /day (30 day average)	Comment	Permitted frequency of exceeding dust fall rate
Residential	D < 600	Permissible for residential and light commercial	2 within a year, not sequential months
Non-Residential	600 < D < 1200	Permissible for heavy commercial and industrial	2 within a year, not sequential months

The monthly average dust fallout concentrations for heavy commercial and industrial areas below 1200mg/m² /day "are permissible". For residential areas, and interchangeably used for rural areas, the monthly average dust fallout concentrations not exceeding 600mg/m² /day "are permissible".



7 TERMS OF REFERENCES

The following terms of references have been developed to plan for the necessary specialist studies to be completed.

7.1 BIODIVERSITY SPECIALIST STUDY:

7.1.1 Objectives:

The primary objectives of this assessment are as follows:

- a. Identify and document the existing flora and fauna species within EPL 6072.
- b. Assess the biodiversity significance and ecological importance of identified species.
- c. Evaluate potential impacts of proposed activities on biodiversity.
- d. Propose mitigation measures to conserve and sustain biodiversity.
- e. Provide recommendations for the integration of biodiversity considerations into project planning and design.

7.1.2 Scope of Work:

The baseline biodiversity survey and assessment will include, but not be limited to, the following:

- a. Conduct a literature review and desktop study to identify known flora and fauna species in the project area.
- b. Field surveys to identify, record, and assess flora and fauna species, including their abundance and distribution. *The sub-consultant should advise whether reptile and mammal trapping surveys are recommendable for this phase of the Project based on the results of point a. above.*
- c. Evaluate the biodiversity significance and ecological importance of identified species based on established criteria.
- d. Assess the potential impacts of the proposed activities on biodiversity, considering direct and indirect effects.
- e. Propose appropriate mitigation measures to avoid, minimize, or offset adverse impacts on biodiversity.
- f. Develop a monitoring plan to ensure the ongoing protection and management of biodiversity during project implementation.
- g. Provide recommendations for the conservation and sustainable use of significant flora and fauna species.



7.1.3 Methodology:

The biodiversity survey and assessment will employ a combination of literature review, field surveys, and consultation with relevant experts. The methodology will adhere to international best practices in biodiversity assessment and conservation.

7.2 HERITAGE AND ARCHAEOLOGICAL SPECIALIST STUDY

7.2.1 Objectives:

The primary objectives of this assessment are as follows:

- a. Identify and document cultural heritage resources within the EPL area according to the prescriptions of the National Heritage Act of 2004.
- b. Assess the significance and sensitivity of identified cultural heritage resources.
- c. Evaluate potential impacts of proposed activities on cultural heritage resources.
- d. Propose mitigation measures to minimize or eliminate adverse impacts.
- e. Provide recommendations for the management and conservation of significant cultural heritage resources if found.

7.2.2 Scope of Work:

The heritage and archaeological assessment will include, but not be limited to, the following tasks:

- a. Conduct a literature review and desktop study to identify known heritage sites and archaeological findings in the project area.
- b. Conduct a field survey to identify, record, and assess cultural heritage resources, including archaeological sites, rock art, and historical structures.
- c. Evaluate the significance and sensitivity of identified cultural heritage resources based on established criteria.
- d. Assess the potential impacts of the proposed exploration activities (drilling) on cultural heritage resources, considering direct and indirect effects.
- e. Propose appropriate mitigation measures to avoid, minimize, or offset adverse impacts on cultural heritage resources.
- f. Develop a monitoring plan to ensure the ongoing protection of cultural heritage resources (if found on site) during project implementation.
- g. Provide recommendations for the integration of cultural heritage considerations into project planning and design.



7.2.3 Methodology:

The heritage and archaeological assessment will employ a combination of literature reviews, field surveys, interviews with local communities, and consultation with relevant stakeholders. The methodology will adhere to international best practices in archaeological and heritage assessments known to the consultant.

7.3 TRAFFIC IMPACT ASSESSMENT

7.3.1 Objectives

The primary objectives of this assessment are as follows:

- a. Identify and document the existing traffic volumes and road conditions within EPL 6072.
- b. Evaluate potential impacts of proposed activities on the road network.
- c. Propose mitigation measures to promote safety on the road and optimise the road alignment design.
- d. Provide recommendations for the integration of design considerations into project planning and design.

7.3.1 Scope of Work:

The baseline traffic survey and assessment will include, but not be limited to, the following:

- a. Conduct an in-filed survey of the road network between Rehoboth and the EPL with records of traffic volumes at peak periods recorded.
- b. Evaluate road safety conditions.
- c. Evaluate the significance and importance of appropriate road design for this project based on established criteria.
- d. Assess the potential impacts of the proposed activities on the road network in terms of direct and indirect effects.
- e. Propose appropriate mitigation measures to avoid, minimize, or offset adverse impacts on the road network.



8 CONCLUSIONS AND RECOMMENDATIONS

In a project of this nature one of the most important mitigating actions is always control of unnecessary collateral damage. The degree to which this works depends greatly on the commitment of the company involved. If they are serious about conservation, then considerable success may be achieved in damage prevention, limitation, and mitigation.

Careful planning of activities as well as careful use and placement of tracks and roads during construction and operation, as well as avoidance of areas of known biological diversity and sensitivity can make a considerable contribution towards minimising cumulative disturbance to the area. This aspect is often neglected because efforts in this regard sometimes start too late.

Disturbance to aspects within the biosphere by the mechanics of the project as well as human influence is regarded as the main impacts. These aspects are archaeological / heritage sites, vegetation and fauna disturbances, and groundwater pollution that should be abated from the onset of the Project. The Proponent is therefore advised to align its management measures and monitoring initiatives with relevant regulatory controls to ensure effective management of all natural resources whilst operating sustainably within its mining claims.

It is further recommended that a water treatment unit is installed onsite in order to purify the raw water extracted from the borehole(s) and store it in a tank, from which it is then piped to the campsite and auxiliary facility for use.

Based in the initial Hydrocensus exercise conducted, it is concluded and recommended that:

- Pump tests are to be performed on the identified boreholes, to obtain sustainable abstraction yield figures. Thereafter the Proponent should apply for the necessary abstraction permit form the Directorate of Water Affairs.
- A ground truthing, restricted to the EPL area must take place to ascertain the feasibility, as well as the sustainability of having additional production boreholes sunk as a water supply mechanism.

9 REFERENCES AND APPENDICES

9.1 REFERENCES

- DoT, 2014. Geological Survey of Namibia, The Damara Supergroup. Department of Mines and Energy, Windhoek, Namibia.
- Du Preez, L. and Carruthers, V. 2009. A complete guide to the frogs of southern Africa. Struik Publishers, Cape Town, RSA.
- Giess, W. 1998. A preliminary vegetation map of Namibia. Revised Edition. *Dinteria* 4: 5–114.
- Griffin, M. 1998b. Amphibian diversity. In: Barnard, P. (ed.). *Biological diversity in Namibia: a country study*. Windhoek: Namibian National Biodiversity Task Force.
- Hoffmann, T. (2005). The vegetation of Namibia in South-West Africa/Namibia: Vegetation of Namibia. In J. B. A. (ed.), *Monographiae Biologicae* (Vol. 90, pp. 1-350). Springer Netherlands. https://doi.org/10.1007/1-4020-2989-7_1
- Klaassen, E.S. & Kwembeya, E.G. (eds.). (2013). A Checklist of Namibian Indigenous and Naturalised Plants. Occasional Contributions No. 5. Windhoek, National Botanical Research Institute, pp. 592
- Maggs, G.L., Craven, P. & Kolberg H. (1998). Plant species richness, endemism and genetic resources in Namibia. *Biodiversity and Conservation* 7: 435–446.
- Mander, M., Nghitila, A., Ndeinoma, A., Mungongi, C., & Ndjido, A. (2010). *The Vegetation of Namibia: A Descriptive Catalogue* (Vol. 19). Namibia Scientific Society.
- Mendelsohn, J., Jarvis, A., Roberts, A. & Robertson, T. 2002. *Atlas of Namibia. A portrait of the land and its people*. David Philip Publishers, Cape Town, RSA.
- National Herbarium of Namibia (WIND). 2009. National Herbarium of Namibia (WIND). 2024. SPMNDB/BRAHMS Database. National Herbarium of Namibia (WIND), National Botanical Research Institute, MAWF, Windhoek, Namibia.
- Risk Based Solutions cc. 2022. Final Updated Environmental Scoping and Environmental Management Plan (EMP) Report to Support the Application for Renewal of Environmental Clearance Certificate for Ongoing / Proposed Minerals Exploration Activities in the Exclusive Prospecting License (EPL) No. 4721, Rehoboth District, HARDAP REGION, SOUTH CENTRAL NAMIBIA.
- Schreck, P. 2013. EPL 3877 Witkrans Mineral Potential, Exploration Results and Mine Planning Commodities: Copper, Silver and Gold (unpublished). Windhoek, Namibia
- Seely, M.K., Buskirk, W.H., Hamilton, W.J. & Dixon, J.E.W. 1981. Lower Kuiseb River Perennial Vegetation Survey. *Journal of the S.W.A. Scientific Society* Vol. XXXIV/XXXV.
- Shackleton, C. M., Scholes, R. J., & Richardson, D. M. (Eds.). (2016). *Ecosystem Services in Savannas: Quantification of Ecosystem Services and Linkages to Ecological Structures and Processes* (pp. 1-449). CRC Press.



Theron, G.K., van Rooyen, N., van Rooyen M.W. and Jankowitz, W.J. 1985. Vegetation structure and vitality in the lower Kuiseb. In Huntley, B.J. ed. The Kuiseb environment: the development of a monitoring baseline. South Africa: South African National Scientific Programmes Report, No. 106: 81-91. Tree Atlas of Namibia (TAP) Database.



APPENDIX A: ENVIRONMENTAL MANAGEMENT PLAN

Table of contents

1.	Introduction.....	4
1.1.	Project components.....	4
1.2.	Establishing an environmental policy	4
2.	THE ENVIRONMENTAL MANAGEMENT PLAN (EMP).....	5
2.1.	Introduction	5
2.2.	Environmental management objectives	5
2.3.	ROLES AND RESPONSIBILITIES	5
	The Project Manager.....	5
	The Environmental Team	6
	The Site Supervisor(s)	6
	The Project Personnel	7
2.4.	ENVIRONMENTAL LEGISLATION AND STANDARDS	8
	Legislation	8
2.5.	STANDARDS AND GUIDELINES	10
2.6.	WATER QUALITY GUIDELINES	11
2.7.	INSPECTIONS.....	13
2.8.	ENVIRONMENTAL MONITORING, AUDITING AND REVIEW	14
3.	IMPACT MITIGATION AND RESOURCE MANAGEMENT	15
3.1.	LAND AND SOILS.....	15
	Objectives	15



Management strategies	15
3.2. WATER QUALITY AND FLOW	17
Objectives	17
Management strategies	17
3.3. ECOLOGY	18
Objectives	18
3.4. GENERAL AIR QUALITY	19
Objectives	19
Management strategies	19
3.5. NOISE	22
Objectives	22
Management strategies	22
MONITORING	23
3.6. 4.7 CULTURAL HERITAGE	24
Objective	24
Management strategies	24
3.7. 4.8 WASTE MANAGEMENT	25
Objectives	25
Management strategies	25
3.8. SOCIAL AND COMMUNITY VALUES	29
Objectives	29
3.9. 4.10 LABOUR AND WORKING CONDITIONS	29



Objectives	29
Management strategies	29
3.10. DECOMMISSIONING PHASE.....	30
3.11. SPECIFIC MONITORING PLANS AND REPORTING.....	31
AIR QUALITY MONITORING.....	31
Dust Deposition	31
PM10 concentrations.....	31
WATER RESOURCE MONITORING.....	31
3.12. BIODIVERSITY INCIDENT REPORTING	31
Monitoring specifics.....	32
4. CONCLUSION	33

List of Tables

Table 1 - Activities requiring permits in terms of National Legislation	8
Table 2 - Ambient Air Quality Guidelines for various International Organisations as accepted by the World Bank	10
Table 3 - Reference exposure levels for SO ₂ , NO ₂ , and PM ₁₀	11
Table 4 - Water quality guidelines (Namib Hydrosearch, 2015).	12
Table 5 - List of inspections and reporting to be undertaken as part of EMP	13
Table 6 - Land and soils management actions	16
Table 7 - Water quality and flow management actions	17
Table 8 - Ecological protection management actions	19
Table 9 - Air quality management actions.....	20
Table 10 - Monitoring criteria for ambient air quality evaluation	21
Table 11 - Evaluation Criteria for dust fallout control	22
Table 12 - Noise control management actions	23
Table 13 - Table 10 - Cultural heritage management measures.....	24
Table 14 - Waste management actions	25
Table 15 - Labour and working conditions management actions.....	29
Table 16 - Summary of monitoring recommendations	32

1. INTRODUCTION

This document details the Environmental Management Plan (EMP), or the management actions needed to avoid or lessen the impacts identified through the scoping process conducted, to acceptable standards. The location of the project site was already illustrated in Figure 1 – Locality map of EPL 6072.

1.1. Project components

The project activities covered by this EMP consist of the operation of the following main components. These are:

- Extraction operations – bulk sampling, drilling and trenching, foundation excavations for semi- permanent building structures.
- Waste (solid and liquid types) disposal.
- Product (sample) transport and shipping – including the main access points to and from the site, main transportation routes to the processing plants.

1.2. Establishing an environmental policy

Based on the criteria provided in this EMP, the proponent is to establish an overarching project specific environmental policy that defines the objectives of the project ensuring sound environmental and social performance.

This policy obligates the proponent to comply with the applicable laws and regulations related to environmental and social management processes.

2. THE ENVIRONMENTAL MANAGEMENT PLAN (EMP)

2.1. Introduction

This EMP has been prepared for the proponent to serve as a standalone plan for managing the potential impacts associated with the operation and decommissioning of their proposed exploration activities. Mitigation measures are based on the assessments and findings of the specialist studies encapsulated within the Phse2 Scoping Assessment Report and should be read in the context of what is written therein.

As the EMP is a working document, changes may be made with regards to future extensions of the project (evolution into site establishment and eventually mining) as well as the consideration of best available technology (bat).

2.2. Environmental management objectives

The implementation of this EMP is a cyclical process that converts mitigation measures into actions and through monitoring, auditing, review and corrective action, ensures conformance with the overall aims and objectives. These objectives are provided below:

- Ensure compliance with the conditions of the Environmental Clearance Certificate;
- Propose practical measures to prevent, minimise, mitigate or rehabilitate adverse impacts;
- Conserve significant aspects of the biophysical and social environments;
- Protect human health and ensure safety of workers and the public;
- Propose a plan to manage and monitor baseline features against project implementation going forward, in such a way that the project is environmentally sustainable.

2.3. ROLES AND RESPONSIBILITIES

The implementation of this EMP requires the involvement of several stakeholders, each fulfilling a different but vital role to ensure sound environmental management during each phase.

The Project Manager

The exploration/project manager during the operation phase will be responsible for the following:

- Ensure that responsibilities assigned to all positions are executed in compliance with relevant legislation and the EMP.



- Ensuring that the necessary environmental authorizations and permits have been obtained.
- Maintain general communications with stakeholders and authorities to inform them of planned activities where relevant.
- Report significant environmental incidents or emergencies to the relevant local authority.
- Oversee and initiate strategies to improve the measures of and implementation of the EMP and environmental policy of the proponent.

The Environmental Team

The Environmental Team will consist of a Safety, Health and/or Environmental Overseer (SHE), and a Community Liaison Officer (when applicable). This role can be outsourced to a consulting firm if required. The team will be responsible for the following:

- Undertake induction training for all personnel to ensure that the environmental values, potential impacts, management measures, and emergency responses are understood and implemented.
- Undertake weekly inspections to ensure onsite implementation and to check the effectiveness of the prescribed mitigation measures.
- Undertake or co-ordinate monitoring activities such as water, air quality, or noise data collection (particularly pertaining to dust deposition volumes on and offsite).
- Investigate environmental incidents and report to the project manager the corrective actions taken and the results of on-going monitoring activities.
- Bi-annual internal audits of EMP implementation.
- Annual internal review and update of the EMP.
- Liaison with stakeholders and authorities.
- Co-ordinate and manage all specialist studies as and when required.
- Co-ordinate and manage the application and or renewal process of all relevant permits and licences.

The Site Supervisor(s)

The site supervisors will be responsible for the following:

- Ensure that the mitigation measures detailed in the EMP are implemented correctly

and are effective and appropriate for the site and activities.

- Review and sign off on area specific plans and drawings prior to implementation.
- Conduct daily inspections of critical-use equipment and activities and mitigation measures with corrective actions taken and recorded where applicable.
- Report all environmental incidents to the Project Manager/Exploration Manager and Environmental Team.

The Project Personnel

All personnel will have a general duty of taking any reasonable and practical measures to ensure that no harm is caused to the environment. This will include the following:

- All project personnel will receive an induction presentation on the importance and implications of the EMP. The presentation shall be conducted, as far as is possible, in the employees' language of choice. As a minimum, training should include:
 - o Explanation of the importance of complying with the EMP.
 - o Discussion of the potential environmental impacts of exploration activities.
 - o The benefits of improved personal performance.
 - o Employees' roles and responsibilities, including emergency preparedness.
 - o Explanation of the mitigation measures that must be implemented when carrying out their activities.
 - o Explanation of the specifics of this EMP and its specification (no-go areas, etc.)
 - o Explanation of the management structure of individuals responsible for matters pertaining to the EMP.
 - o Health and Safety Training.
- Daily pre-start checks will be undertaken by personnel in charge of vehicles to ensure that equipment is in good working condition, i.e., no repairs/maintenance is needed, does not have signs of oil or other leakages and contains necessary emergency equipment, e.g., spill kits and fire extinguishers. A checklist will be kept in the vehicle to record daily pre-start checks.



2.4. ENVIRONMENTAL LEGISLATION AND STANDARDS

Legislation

Summarized below (**Table 1**) are the regulatory controls applicable to this project's implementation (such as permits).

Table 1 - Activities requiring permits in terms of National Legislation

THEME	LEGISLATION	REQUIREMENT
LABOUR	Labour Act 11 Of 2007	Regulations relating to the health and safety of employees at work are contained in GN 156/1997 (GG 1617). Must be complied with on this project.
NATURE CONSERVATION	Forestry Act No 27 Of 2004 Nature Conservation Ordinance of 1975	Required if protected plant species on the project site should be removed and relocated. Conservation of protected, fauna and avifauna species.
HERITAGE	National Heritage Act No 27 Of 2004	Apply for heritage consent from the National Heritage Council The following applies. <ul style="list-style-type: none"> No archaeological/heritage site or cultural remains may be removed, damaged, altered or excavated. Section 48 sets out the procedure for application and granting of permits, such as the permit required in the event of damage to a protected site occurring as an inevitable result of development. Section 51 (3) sets out the requirements for impact assessment. Part VI Section 55 Paragraphs 3 and 4 require that any person who discovers an archaeological site should notify the National Heritage Council. Contact: (061-244 375)



THEME	LEGISLATION	REQUIREMENT
WATER	Water Resources Management Act (2004) Enforced By the Water Act No 54 Of 1956	The following permits are required in terms of the Water Act: <ul style="list-style-type: none"> • Water abstraction from an underground water body permit. • Domestic effluent discharge permits (site offices) • Water used for dust suppression; and water reticulation permits. <p>This Act is replaced by the Water Resources Management Act 2013. The Act has been gazetted in August 2023 and therefore in force, once the regulations are gazetted.</p>
EXPLOSIVES	Explosives Act 26 of 1956 (amended up to April 1978) – Governed by the Ministry of Home Affairs, Immigration, Safety, and Security (MHAISS).	All explosives used on the exploration site(s) will require the relevant blasting permit (by the operator / blaster) to be acquired. Should explosives be stored on the exploration site, the relevant explosives storage and handling permit should be acquired.
FUEL STORAGE ON SITE	The Petroleum Products and Energy Act of 1990	To obtain a consumer installation certificate for the storage of fuel more than 600 litres in rural areas and 200 litres in urban areas.



2.5. STANDARDS AND GUIDELINES

- Air Quality Standards

The following legal parameters/guidelines are included in this section as a reference point for the proponent to consider in the event that the project develops into an initial small-scale mining operation.

The Namibian Atmospheric Pollution Prevention Ordinance (No. 11 of 1976) does not include any ambient air standards to comply with. Typically, when no such local criteria exists, or are in the process of being developed, reference is made to international criteria (Table 2).

Table 2 - Ambient Air Quality Guidelines for various International Organisations as accepted by the World Bank

POLLUTANT	AVERAGING PERIOD	WHO GUIDELINE VALUE ($\mu\text{G}/\text{M}^3$)	EC DIRECTIVE LIMITS ($\mu\text{G}/\text{M}^3$)	US NAAQS ($\mu\text{G}/\text{M}^3$)	SOUTH AFRICA NAAQS ($\mu\text{G}/\text{M}^3$)
SULPHUR DIOXIDE (SO_2)	1-year	125 (IT-1)	20	-	50
	24-hour	50 (IT-2) 20 (guideline)	125	-	125
	1-hour	-	350	196	350
	10-minute	500 (guideline)	-	-	500
CARBON MONOXIDE (CO)	1-hour	30 000 (guideline)	-	40 000	30 000
NITROGEN DIOXIDE (NO_2)	1-year	40 (guideline)	40	100	40
	1-hour	200 (guideline)	200	188	200
PARTICULATE MATTER (PM10)	1-year	70 (IT-1) 50 (IT-2) 30 (IT-3) 20 (guideline)	20	-	50 40
	24-hour	150 (IT-1) 100 (IT-2) 75 (IT-3)	50	150	120 75
		50 (guideline)			



- Health Screening Criteria

For the purpose of a health risk assessment, proposed evaluation criteria were taken from the various international standards and summarised in **Table 3** below.

Table 3 - Reference exposure levels for SO₂, NO₂, and PM₁₀

POLLUTANT	AVERAGING PERIOD	SELECTED CRITERIA (µG/M ³)	SOURCE
SO ₂	1-hour Mean	350(a)	EC Limit & SA Standard
		660	California OEHHA RfC
	8-hour TWA	5 640	Namibian occupational exposure limit
		1 410	European Community (EC)
24-hour Mean	125	WHO IT1, SA Standard, Botswana and EC Limit	
	20	WHO AQG	
Annual Mean	50	SA Standard	
NO ₂	1-hour Mean	200(a)	EC Limit & SA Standard
		470	California OEHHA RfC
Annual Mean	40	WHO AQG	
PM ₁₀	8-hour TWA	10 000	Namibian occupational exposure limit
	24-hour Mean	75(b)	WHO IT3 & SA Standard
		50	WHO AQG
Annual Mean	30	WHO IT3	

Notes:

- (a) Not to be exceeded more than 88 times per calendar year (SA Standard).
- (b) (b) Not to be exceeded more than 4 times per calendar year (SA Standard).

2.6. WATER QUALITY GUIDELINES

The Water Quality Guidelines of Namibia (MAWF 1988) are applicable for drinking water, livestock watering and discharge of wastewater (Table 4).



Table 4 - Water quality guidelines (Namib Hydrossearch, 2015).

RECOMMENDED MAXIMUM LIMITS	HUMAN CONSUMPTION			LIVESTOCK WATERING
	GROUP A	GROUP B	GROUP C	
PARAMETER	GROUP A	GROUP B	GROUP C	LIVESTOCK WATERING
pH	6-9	5.5-9.5	4-11	4-11
ELECTRICAL CONDUCTIVITY (ms/M)	150	300	400	
TURBIDITY (NTU)	1	5	10	
TOTAL DISSOLVED SOLIDS (mg/l)				6000
TOTAL HARDNESS as mg/l CaCO ₃	300	650	1300	
CA-HARDNESS as mg/l CaCO ₃	375	500	1000	2500
MG-HARDNESS as mg/l CaCO ₃	290	420	840	2057
CHLORIDE AS Cl mg/l	250	600	1200	3000
FLUORIDE as F mg/l	1.5	2.0	3.0	6
SULPHATE as SO ₄ mg/l	200	600	1200	1500
NITRATE as N mg/l	10	20	40	100
NITRITE as N mg/l				10
SODIUM as Na mg/l	100	400	800	2000
POTASSIUM as K mg/l	200	400	800	
MAGNESIUM as Mg mg/l	70	100	200	500
CALCIUM as Ca mg/l	150	200	400	1000
MANGANESE as Mn mg/l	0.05	1.0	2.0	10
IRON as Fe mg/l	0.1	1.0	2.0	10



2.7. INSPECTIONS

The table below provides a list of inspections and mandatory reporting that should be undertaken as part of the EMP:

Table 5 - List of inspections and reporting to be undertaken as part of EMP

INSPECTIONS	FREQUENCY	RESPONSIBILITY
<ul style="list-style-type: none"> Erosion control measures. Effectiveness of surface water control measures (during rainy season only) (e.g. pond overflow). Effectiveness of dust suppression methods employed on the road and dusty areas. Protection of vegetation in the area. Condition of the access roads. Littering on site. Waste disposal infrastructure. Any hazardous spills. Hazardous substances storage areas 	Daily	Site supervisor/ Environmental officer
Work areas and implemented management measures.	Weekly	Environmental officer
<ul style="list-style-type: none"> Internal environmental reporting on issues recurring on inspection records. Summary of monitoring and inspection results. Dust deposition. Production and monitoring borehole rest water level measurements. 	Monthly	Environmental officer to project / exploration manager
<ul style="list-style-type: none"> Water Abstraction Return Sheet completion and submission to the DWA as per the abstraction permit terms and conditions. 	Quarterly	Environmental officer
<ul style="list-style-type: none"> Bi-annual report compilation on exploration progress to the MEFT. 	Bi-annual	Environmental officer



INSPECTIONS	FREQUENCY	RESPONSIBILITY
<ul style="list-style-type: none"> Annual report compilation on exploration progress to the MME 	Annual – Before 31 December.	Environmental officer / exploration manager

2.8. ENVIRONMENTAL MONITORING, AUDITING AND REVIEW

Environmental monitoring is essential to assess the effectiveness of the recommended management strategies and to safeguard baseline environmental conditions. Monitoring should include keeping record of specific outcomes (e.g., water quality, water levels and dust fallout) and then comparing it to the benchmarks established during the onset of the assessment. Should corrective actions be required, it needs to be documented to reflect the mitigation measures taken and the preventative measures agreed upon to avoid future recurrence.

This should be followed up on in all future monitoring endeavours to ensure its effectiveness. Monitoring actions required during normal operations of the exploration program are indicated as such in the tables contained in the following sections.

In addition to keeping record of monitoring actions and outcomes, the implementation of this EMP will be internally audited on a biannual basis after which the document will be updated or revised (as required) to address any residual issues still recurring identified during the audit. During this audit, the appropriateness of the EMP to current activities, monitoring studies and legislation will be reviewed. This will enhance the relevance of the document and verify compliance and progress towards the desired outcomes.

The environmental officer or manager (if appointed) will provide monthly updates to the project manager on routine monitoring and auditing results.



3. IMPACT MITIGATION AND RESOURCE MANAGEMENT

This EMP has been developed to set forth management measures/strategies with the aim of reducing the risks associated with the identified impacts contained within the Phase1 Scoping report.

For each of the environmental elements listed in this report, the following are described:

- Management objectives – main outcomes to be achieved by the prescribed management strategies;
- Management strategies – in table format, including for each aspect:
- The project phase - i.e., operation phase, monitoring during normal operations and decommissioning or site closure;
- The project component – i.e., the specific component of the project site e.g., drill and blast hole overburden stockpile.
- Mitigation measures – i.e., individual tasks or actions that need to be undertaken at the site component during the specific phase.
- Management strategies for decommissioning, rehabilitation and final site closure.

3.1. LAND AND SOILS

Objectives

- Disturbed land areas and slopes are progressively restored, as close as practically possible, to pre-exploration conditions; and
- Reasonable and practical measures are taken to minimise short- and long-term soil erosion and the adverse effects of sediment transport.

Management strategies

The clearing of land for invasive exploration activities (exploration drill sites – cleared of vegetation 15mx10m) and other construction activities will inevitably involve earthworks and lead to an increased risk of erosion. The following measures should be adopted to minimize the impact of erosion during the various phases of the project:



Table 6 - Land and soils management actions

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
PLANNING AND DESIGN PHASE		
MANAGEMENT PROCESS	All components	Include provision for the management of topsoil (in the form of a topsoil management plan) and the rehabilitation of quarries in policy documents, as well as all other measures prescribed emanating from the quarry investigation and the design for excavations and storage of spoil material.
TOPSOIL	All components	The top 200-300mm of topsoil should be saved for use in rehabilitation. The soil should be stripped and stockpiled not exceeding 1m in height. Dust suppression measures to be applied that is cost effective.
	Topsoil stockpiles	If not used within 1 year, the stockpile should be levelled and contoured and natural grass allowed growing over the area. This will keep the soil biologically active.
VEGETATION CLEARING	All components	Vegetation clearing should be restricted to areas essential for the envisaged development to minimise the length of time soil is exposed.
	Quarries	The ECO shall visit all proposed areas for clearing and indicate where and how material may be removed, before works commence.
AESTHETICS AND EROSION	All disturbed components	Areas temporarily disturbed for new construction works that will not be required for long term operations (e.g. lay down areas) will be identified, graded and rehabilitated to improve aesthetics and reduce erosion.
STORM WATER AND RUNOFF	Disturbed components	Storm water and runoff should be diverted away from actively disturbed areas (i.e. quarries, R.O.M and waste stockpiles).
MONITORING ACTIONS DURING NORMAL OPERATIONS		
MONITORING	Disturbed components	Cleared areas and removed soil shall be left at as gentle a slope angle as possible (less than 20 degrees), to minimise the risk of erosion and to enable re-vegetation.
MONITORING	Disturbed components	Disturbed areas around new sites should be rehabilitated promptly and not left un-rehabilitated for long periods at end.



MONITORING	Disturbed components	Areas disturbed by exploration activities and infrastructure are to be rehabilitated to a stable landform with self-sustaining vegetation cover.
CONTINUOUS REHABILITATION		
MONITORING	Eroded areas	Erosion monitoring procedures should be developed whereby excavated areas and other potential erosion sites are visually monitored at the end of the wet season every year to identify erosion gullies. Areas where erosion was remediated previously should also be monitored.

3.2. WATER QUALITY AND FLOW

Objectives

- Spills are contained and remediated with no adverse impacts to the surface water resource (ephemeral rivers).
- Minimise impacts to surface water quality and flow from the project.

Management strategies

Proposed actions for managing potential impacts to surface and groundwater quality and flow, monitoring and corrective actions are provided below:

Table 7 - Water quality and flow management actions

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
PLANNING AND DESIGN PHASE		
MANAGEMENT PROCESS	All project components	<ul style="list-style-type: none"> • Acquire the appropriate abstraction permit from the MAWLR for all the useable boreholes.
WASTE WATER	Effluent treatment facility	<ul style="list-style-type: none"> • Untreated wastewater is not to be disposed of into the natural environment unless final effluent quality guidelines (MAWF, 1998) are met. A Wastewater Discharge Permit will be required from the DWAF.
MONITORING ACTIONS DURING NORMAL OPERATIONS		



ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
LOCAL WATER SUPPLY		<ul style="list-style-type: none"> Abstracted volumes are to be monitored to ensure compliance with the allowable sustainable volumes as specified on the abstraction permit.

3.3. ECOLOGY

Objectives

- Removal, modification and fragmentation of habitats are minimized, therefore no fences around the exploration sites are allowed.
- Fauna and flora are managed at the project site and the risks to flora and fauna in and outside the immediate EPL area are minimized.
- Indirect impacts from operation activities are minimized.
- Progressive restoration to restore ecosystem functions where possible.
- Reduce the impact on key flora species such as *Acacia erioloba*, and *Boscia albitrunca*, *Aloe littoralis*, etc,

Management strategies

The mitigation measures for reducing the loss of flora and fauna habitat during the various phases of the project include:

- Unnecessary collateral damage caused by mismanaged track creation, should be prevented. Special care should be taken in the riparian area on the river embankment.
- Water usage should be strictly controlled and the water quality monitored to prevent pollution. This should be done by means of developing a Sustainable Water Supply Management Plan that will enable the proponent to minimize its impact to natural systems by properly and accurately managing water use and quality.
- Plant harvesting in and around the site and in elsewhere habitats are not allowed.



Table 8 - Ecological protection management actions

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
PLANNING AND DESIGN PHASE		
ENDEMIC VEGETATION	Entire project site and access road	<ul style="list-style-type: none"> • Unnecessary land clearing should be avoided. Trees along river embankments to be left in place, undisturbed.
OPERATIONS		
LAND CLEARING	Entire project site	The operator of all earth working machines and excavator should be thoroughly instructed about where land clearing should happen and where not.
ILLEGAL HARVESTING/ POACHING	All employees	Illegal harvesting and poaching is prohibited. The proponent should encourage people to take pride in their surrounding natural heritage, rather than to illegally exploit it.
REHABILITATION	Disturbed areas	<p>Progressive rehabilitation in the form of backfilling of overburden, topsoil management and re-vegetation activities should be conducted as the mining programme progresses.</p> <p>Where topsoil is pre-stripped, it should be stored for future site rehabilitation activities. Topsoil management should include maintenance of soil integrity in readiness for future use. Storage areas should be temporarily protected or vegetated to prevent erosion.</p>

3.4. GENERAL AIR QUALITY

Objectives

- Reduce dust and gaseous emissions within specific target ranges, by employing appropriate suppression strategies.
- Control and reduce sulphur dioxide emissions from Diesel engines (i.e. the 17 KW diesel generator and vehicles).

Management strategies

Proposed actions for managing potential impacts to air quality and associated facilities with monitoring and corrective actions are provided below:



Table 9 - Air quality management actions

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
OPERATIONS		
PM10 CONCENTRATIONS	Roads Borrow pits	<ul style="list-style-type: none"> Water sprays and/or chemical suppressants (Agglomeration additives) should be used on: <ul style="list-style-type: none"> the roads; the material handling points. Exposed soils and other erodible materials should be revegetated or covered promptly.
	Roads Material handling points	<ul style="list-style-type: none"> Water sprays where necessary Dust deposition rates less than 1200 mg/m².day at downwind dust bucket stations should be achieved. Maintenance of water sprays system to maximise control efficiency. Addition of chemical surfactants to water sprays to lower water surface tension and increase binding properties.
WIND EROSION	Bulk sampling stockpiles	<ul style="list-style-type: none"> Exposed soils and other erodible materials should be revegetated or covered promptly
GASEOUS EMISSIONS	Vehicle tailpipe emissions	<p>Preventative controls for vehicle NO_x emissions:</p> <ul style="list-style-type: none"> minimization of vehicle idling times, regular maintenance of vehicles according manufacturer's guidance, use of best available technologies such as exhaust gas recirculation and installation of selective catalytic reducers to reduce NO_x emissions.

The relevant monitoring criteria to be followed to evaluate the state of ambient air quality is contained in Table 8.



Table 10 - Monitoring criteria for ambient air quality evaluation

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
MONITORING ACTIONS DURING NORMAL OPERATIONS		
MONITORING	All exploration operations	<ul style="list-style-type: none"> • A dust monitoring network should be established to collect dust fallout due to routine operations, as well as dust fallout during high wind periods • Occupational PM10, SO2 and NO2 exposure should be measured annually. Personal samplers should be issued to selected employees covering various mining activities and areas over the 8-hour working shift. The sampled PM10 filters should be analysed for hazardous content to determine exposure to hazardous inhalable dust. This is useful to obtain a data record of exposure levels at the site. • One PM10 monitor should be placed downwind of the extraction operations and downwind of the crusher operations if receptors are present. • A passive SO2 and No2 sampling campaign should be conducted annually at the same locations used for dust fallout monitoring. • The passive samplers should be exposed for a period of at least one month during each campaign.

DUST MONITORING

Dust collection sampling and analysis should commence to establish baseline levels and to develop safe working conditions during site establishment, construction, and operations..

Baseline dust deposition monitoring will commence for EPL 6072. Eight dust monitoring stations will be installed and fitted with the appropriate bucket size according to the ASDM standard each to collect dust fallout from the environment. The dust buckets will be exposure to the elements on site between 28-32 days. The subsequent monthly results are



used to develop a long-term air quality trend of the project's activities on local ambient air quality within and outside the EPL.

The three main purposes of a fallout dust monitoring programme are:

- To meet legislative requirements.
- To indicate long term trends; and
- To generate or maintain awareness of dust generating activities on site.

The evaluation criteria used to evaluate the concentration of dust volume per dust station is illustrated in Table 8.

Table 11 - Evaluation Criteria for dust fallout control

Restriction areas	Dustfall rate (D) mg/m ² /day (30-day average)	Comment	Permitted frequency of exceeding dust fall rate
Residential	D < 600	Permissible for residential and light commercial	2 within a year, not sequential months
Non-Residential	600 < D < 1200	Permissible for heavy commercial and industrial	2 within a year, not sequential months

The monthly average dust fallout concentrations for heavy commercial and industrial areas below 1200mg/m² /day "are permissible". For residential areas, and interchangeably used for rural areas, the monthly average dust fallout concentrations not exceeding 600mg/m² /day "are permissible".

3.5. NOISE

Objectives

Minimizing noise nuisances to sensitive receptors (humans and fauna) on and beyond the boundaries of the project site.

Management strategies

The noise impact associated with the operation of the exploration program on the nearest human inhabitants is expected to be limited due to the distance to the nearest sensitive receptors, owing to its relative. Nonetheless, the following management measures are prescribed to further reduce any potential noise from the project site



Table 12 - Noise control management actions

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
OPERATIONS		
EQUIPMENT AND VEHICLES	All project components	Management must develop a noise reduction and management programme for use during the operational phase of the project, to keep noise levels below the baseline average of 75dBA. International organizations like WHO, WB, IFC have near similar EHS guidelines for noise mitigation in the mining industry, which can be applied as a minimum standard for the exploration industry.
EQUIPMENT AND VEHICLES	All project components	Regularly maintain equipment and vehicles to minimize noise.
EXTRACTIVE AND PROCESSING OPERATIONS	Operational phase	Develop a mechanism to record and respond to complaints. No domestic animals are allowed on the ML under any circumstances.
TRANSPORT OF PRODUCT AND MATERIALS	All project components	Transport of product and materials to and from the project site should preferably occur during daylight hours only.

MONITORING

The following monitoring recommendations are taken from (McIvor, 2014), which gives a concise summary of appropriate monitoring techniques to measure noise levels. *“Noise monitoring programs should be designed and conducted by trained specialists. Typical monitoring periods should be sufficient for statistical analysis and may last 48 hours with the use of noise monitors that should be capable of logging data continuously over this time period, or hourly, or more frequently, as appropriate (or else cover differing time periods within several days, including weekday and weekend workdays). The type of acoustic indices recorded depends on the type of noise being monitored, as established by a noise expert. Monitors should be located approximately 1.5 m above the ground and no closer than 3m to any reflecting surface (e.g., wall). In general, the noise level limit is represented by the background or ambient noise levels that would be present in the absence of the facility or facilities under investigation”.*



3.6. 4.7 CULTURAL HERITAGE

Objective

Ensure due consideration is given to matters regarding the cultural and general wellbeing of the affected community and matters incidental thereto.

Management strategies

The following mitigation measures are prescribed to avoid or limit any potential impact on culturally significant sites in the unlikely event of stumbling across it.

Table 13 - Table 10 - Cultural heritage management measures

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
OPERATION PHASES		
Heritage	All project components	The heritage finds located within the EPL should be conserved against undue damage by the exploration program (i.e., All graveyards recorded and the rock painting site on Morgenroth farm). The conservation of the heritage objects should preferably be protected in-situ or alternatively be moved to the National Museum in consultation with all relevant parties and in accordance with the precepts of the National Heritage Act of 2004.
ARCHAEOLOGY	All project components	Should a heritage site or archaeological site be uncovered or discovered during the exploration phase of the project, a "chance find" procedure should be applied in an order as follows: If operating machinery or equipment, stop work. <ul style="list-style-type: none"> • Demarcate the site with plastic warning tape; • Determine GPS position if possible; • Report findings to foreman; • Report findings, site location and actions taken to superintendent; • Cease any works in immediate vicinity; • Visit site and determine whether work can proceed without damage to findings; • Determine and demarcate exclusion boundary;



ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
		<ul style="list-style-type: none"> • Site location and details to be added to the project's Geographic Information System (GIS) for field confirmation by archaeologist; • Inspect site and confirm addition to project GIS; • Advise the National Heritage Council (NHC) and request written permission to remove findings from work area; and <p>Recovery, packaging and labelling of findings for transfer to National Museum.</p>
ARCHAEOLOGY	All project components	<p>Should human remains be found, the following actions will be required:</p> <ul style="list-style-type: none"> • Apply the chance find procedure as described above; • Schedule a field inspection with an archaeologist to confirm that remains are human; • Advise and liaise with the NHC and Police; and • Remains will be recovered and removed either to the National Museum or the National Forensic Laboratory.

3.7. 4.8 WASTE MANAGEMENT

Objectives

- Waste is managed according to the waste management hierarchy (**prevention, reduction, re-use, recycling, disposal**);
- All waste is properly handled, stored, marked, transported and disposed of;
- Contaminant spills are avoided or immediately contained;

Management strategies

Proposed actions for managing potential impacts associated with waste are provided below:

Table 14 - Waste management actions



ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
PLANNING PHASE		
WASTE MANAGEMENT PLAN	All project components	A Waste Management Plan should be developed and implemented and should include project and site-specific details on waste types, procedures and facilities where it will be disposed of.
INDUCTION AND TRAINING	All project components	Implement a training program and inductions for waste management for all project personnel.
WASTE PREVENTION	All project components	Encourage careful project planning in the purchasing policy to minimize unnecessary materials brought onto site. Rather return surplus materials to the supplier.
WASTE REUSE	All project components	Reuse or recycle solvents, metals, and oils.
OPERATION PHASE		
HAZARDOUS WASTE	All project components	<p>All heavy vehicles and equipment on site should be provided with a drip tray.</p> <ul style="list-style-type: none"> • Drip trays are to be transported with vehicles wherever they go. • Drip trays should be cleaned daily and spillage handled,

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
PLANNING PHASE		
WASTE MANAGEMENT PLAN	All project components	<p>A Waste management Plan should be developed and implemented. It should include project and site-specific details on waste types, procedures and facilities where It will be collected treated and disposed of.</p> <p>Implement a training program and inductions for waste management for all project personnel,</p> <p>Encourage careful project planning in terms of procurement to minimize the unnecessary purchasing of materials which are brought to site.</p> <p>Reuse or recycle solvents, metals and oils.</p>
OPERATION PHASE		



ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
HAZARDOUS WASTE		<p>All heavy vehicles and equipment on site should be provided with a drip tray:</p> <ul style="list-style-type: none"> • Drip trays are to be transported with vehicles wherever they go. • Drip trays should be cleaned daily and spillage contents handled appropriately, stored and disposed of as hazardous waste.
	All project components	All heavy vehicles should be inspected regularly to prevent oil leakages.
	Workshop and wash bay	<p>Maintenance and washing of vehicles should take place only at a designated workshop area.</p> <ul style="list-style-type: none"> • The workshop area should be lined with concrete. • The workshop should have an oil-water separator for collection of run-offs from washing. • Oil filters should be stored in marked containers that allow oil to drain but not escape from storage.
	All project components	<p>All hazardous substances (e.g., fuel etc.) or chemicals should be stored in a specific location on an impermeable, bunded surface.</p> <p>Stored in closed containers away from direct sunlight, wind and rain (Mclvor, 2014).</p> <p>Secondary containment systems should be constructed with materials appropriate for the wastes being contained and adequate to prevent loss to the environment (Mclvor, 2014).</p> <p>Secondary containment is included wherever liquid wastes are stored in volumes greater than 220 litres (Mclvor, 2014).</p>
	All project components	Hazardous waste to be handled by trained personnel only and disposed of at an appropriately licensed facility off-site.
	All project components	Spill management kits, Personal Protective Equipment (PPE) and relevant emergency procedures should be available at the workshop and storage facilities.



ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
SEWAGE AND GREY WATER	All project components	Any spills should immediately be contained and cleaned up and the contaminated soil appropriately disposed of. The receiving environment should then be remedied where necessary to prevent the spill from entering the storm water drainage system.
	Waste water treatment facility	<p>The containerised septic tank system in use will be used to treat onsite sewage:</p> <ul style="list-style-type: none"> • Sewage (black water) may not be discharged directly into the environment; <p>Grey water should be recycled by:</p> <ul style="list-style-type: none"> • Using it for dust suppression; • Sustaining a vegetable garden, or to support a small nursery; • Used to clean equipment.
	All project components	<ul style="list-style-type: none"> • The project site should be kept tidy at all times. All domestic and general waste produced on a daily basis should be cleaned and contained daily. • No waste may be buried, burned or disposed to land on site, outside of the approved waste disposal facility. • Waste containers (bins) should be emptied regularly and removed from site to a recognized (municipal) waste disposal site. All recyclable waste needs to be taken to the nearest recycling depot. • A sufficient number of separate waste containers (bins) for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Labourers should be sensitized to dispose of waste in a responsible manner and not to litter. <p>No waste may remain on site after the completion of the project.</p>



3.8. SOCIAL AND COMMUNITY VALUES

Objectives

- Minimize the impact on social services, infrastructure and social or cultural values due to the operations of the mine.
- Minimize negative visual amenity changes or changes in the sense of place resulting from the operational activities and physical structures of the project site.
- Minimize any adverse impacts on the surrounding land uses.
- Minimize any potential health impacts that may result from the project.
- Optimize the advantages of the project by continually engaging in social projects and providing local employment opportunities as far as possible.

3.9. 4.10 LABOUR AND WORKING CONDITIONS

Objectives

- To promote compliance with national employment and labour laws.
- To promote a safe and healthy work condition, and the health of workers.

Management strategies

Proposed actions for managing potential impacts associated with labour and working conditions are provided below:

Table 15 - Labour and working conditions management actions

ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
PLANNING AND DESIGN PHASE		
HEALTH AND SAFETY	Personnel	<ul style="list-style-type: none"> • Awareness raising • Information sharing • Access to health care services i.e. counselling and testing. <p>Develop an Emergency Response and Procedures framework: Any safety incidents occurring on site that covers:</p> <ul style="list-style-type: none"> • Accidental spills of hazardous materials,



ASPECT	PROJECT COMPONENT	MITIGATION MEASURE
		<ul style="list-style-type: none"> Accidents involving personnel on the work sites, and - Major failures such as structural collapses, etc. <p>The basic principles to include are:</p> <ul style="list-style-type: none"> Consider preventive and responsive actions Who should be responsible to coordinate such actions? Reporting of incidents on site Recommend corrective measures to flawed methods of response.
		<ul style="list-style-type: none"> Compile a Health and Safety report that identifies PPE – specifically for inhalation protection – for the various exploration activities. Supervisors and contractors are responsible for maintaining the health of all employees and labourers during the period of employment. All necessary PPE as required for doing work will be provided to the employees.
EMPLOYMENT/ RECRUITMENT IN THE EVENT OF POSSIBLE EXPANSION OF WORKFORCE	Personnel	<ul style="list-style-type: none"> A fair and transparent employment scheme should be established in consultation with the Regional Council. Once the unskilled or semi-skilled labour needs have been identified, it will be passed on to the Community Liaison Officer who will then make an initial approach for local labour. Ensure that recruitment takes place in a legal and fair manner to minimise conflict. The recruitment process should be gender inclusive, i.e. qualified women should be given an equal opportunity where possible. Remuneration should also meet Namibian set standards. Adhere to the legal provisions for the recruitment of labour (target percentages for gender balance, optimal use of

3.10. DECOMMISSIONING PHASE

After site closure and decommissioning, the Proponent will commission the development of an environmental audit report and submitted to MEFT (both the Directorate of



Environmental Affairs and Directorate of Wildlife and National Parks). This report shall be compiled by an independent Environmental Assessment Practitioner or terrestrial ecologist. As a minimum, it shall outline the demobilisation of infrastructure and rehabilitation of disturbed areas, as well as to report the lessons learned/ modifications made from this Project. This shall be done in consultation with all competent authority bodies and relevant stakeholders and the community.

3.11. SPECIFIC MONITORING PLANS AND REPORTING

AIR QUALITY MONITORING

Ambient air quality should be monitored by implementing the recommendations provided below.

Dust Deposition

Dust fall should be collected in order to:

- Track progress of air pollution control measures being implemented at the material handling points, at the crusher and most importantly at windblown dust sources.
- Quantify the nuisance risk to the surrounding environment.

The buckets should be exposed for a period of one month (29-32 days). The exposed buckets are rinsed out with de-ionised water and poured into plastic bottles that get couriered to a nearby laboratory for analysis. The results are reported to the proponent on a monthly basis.

PM10 concentrations

PM₁₀ concentration should be sampled in order to:

- Track progress of air pollution control measures on the impact on the surrounding environment.
- Quantify the health risk to the surrounding environment, beyond the perimeter of the mining claims.

It is recommended that the PM₁₀ monitor be installed downwind from the processing and excavation sites once up and running.

WATER RESOURCE MONITORING

The recommended monitoring boreholes should be monitored for drawdown analysis on a monthly basis. The production boreholes should also be subjected to the monthly monitoring regime. Water quality testing should be conducted quarterly and the results of which submitted to the DWAF quarterly with the abstraction return sheets.

3.12. BIODIVERSITY INCIDENT REPORTING

The following measures for the monitoring of biodiversity incidents apply.



Monitoring specifics

The following recommendations are made, especially considering the free roaming movement and habitat use of wildlife in close proximity to the project site.

Table 16 - Summary of monitoring recommendations

RISK ITEM	MONITORING
POACHING OF WILDLIFE	<ul style="list-style-type: none"> • Observations of wildlife spotted in the area to be recorded. • Anti-poaching education material to be distributed to staff discouraging poaching. • Strict disciplinary procedures to be put in place to deal with poaching offences.



4. CONCLUSION

This EMP becomes a legally binding document once approval is granted and written confirmation to this effect through an environmental clearance certificate by the Ministry of Environment and Tourism is obtained. The provisions and mitigation details given in this EMP must be strictly adhered to and applied by the user of it.



APPENDIX A: EVIDENCE OF PUBLIC CONSULTATION



Public consultation commenced on the 8th of February with the newspaper adverts published in The Republiken, Allgemeine Zeitung and the Namibian Sun Newspapers.

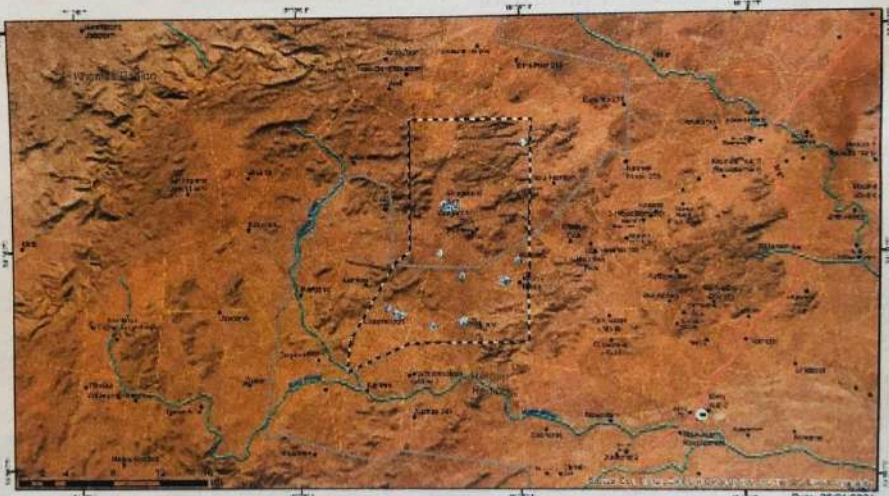
Site notice boards were installed on the two access points to the EPL, one west of the EPL along the D1261 road and east of the EPL at the entrance to Farm Rusplek.


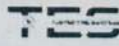
Stakeholder letter and Comment Cards and registration forms were provided to all I&APS. Responses were received and are listed in this section. No call for a public meeting was received.



NOTICE OF AN ENVIRONMENTAL CLEARANCE CERTIFICATE APPLICATION - PROPOSED EXPLORATION ACTIVITIES ON EPL 6072, OVERLAPPING THE KHOMAS AND HARDAP REGIONS, NAMIBIA

Mr. Daniel Malan intends to apply to the Ministry of Environment, Forestry and Tourism for environmental clearance to continue mineral ore verification exploration activities on EPL 6072 located in the Khomas and Hardap regions. T.E.S was appointed to conduct the environmental assessment and submit the ECC application as per the Environmental Management Act (2007) and its Regulations (2012).



Legend	 Locality Map of EPL 6072	
Rivers Boreholes Farm Boundaries	EPL 6072 Main Road M47 Region Boundaries	

Date: 25/01/2024

Should you have an interest in or are affected by the Project, please register as an Interested and Affected Party (I&AP) by contacting us using the details below. This will provide you the opportunity to submit any issues or comments about the Project and receive additional information. The deadline to submit your input is set for 22 February 2024.

Contact: TLSP Enviro Services
Tel: +264 81 602 2082 / 61 435 8298
Email: info@tesnam.com / projects@tesnam.com



INTERESTED AND AFFECTED PARTY LIST: PROPOSED EXPLORATION ACTIVITIES ON EPL 6072 ECC APPLICATION.

NAME	ORGANISATION	POSITION	LANDLINE	MOBILE	POSTAL ADDRESS	FAX	E-MAIL	COMMUNICATION SENT CHECKBOX
CLIENT / PROPONENT								
Mr. Daniel Stefanus Malan	EPL owner	Private Capacity		264813592777	P.O Box 21, Kamanjab	N/A		
Mr. W. Botes	SADCOR Mining	Technical Partner		+27764240057			wilhelm@jwbotesinc.co.za	
EIA TEAM								
Mr C.L Harker	TLSP Enviro Services	EAP	-	816022082		-	lester@tesnam.com	
Mr E. Kuliwoye	TLSP Enviro Services	GIS Specialist		812313042			kuliwoye8@gmail.com	
FARM NAMES								
Junita	Kobos Farm (main)	Daughter of Owner					junevw38@gmail.com	BID and Phase1 SR sent
Rev. Steven Nel (Ds.)	Kobos Farm (Roukamp)	Tenant		812727111			doems57@iway.na	BID and Phase1 SR sent
Mr Martin van Wyk	Kobos Farm (minor)	Owner					fwvcarriers@yahoo.com	BID and Phase1 SR sent
Mr Andre Alcock	Kobos Farm (minor)	Unknown						BID and Phase1 SR sent
Mr Manfred Angermund	Kaunas Noord Farm	Owner		811278598			mangermund@gmail.com	BID and Phase1 SR sent



INTERESTED AND AFFECTED PARTY LIST: PROPOSED EXPLORATION ACTIVITIES ON EPL 6072 ECC APPLICATION.

Mr Hendrik van Wyk	Naais Noord Farm	Unknown		817811989				BID and Phase1 SR sent
Mr Melvin Van Heerden	Van Heerdens Rus Farm	Owner		812846479			carolinevanheerden96@gmail.com	BID and Phase1 SR sent
Mr Bismarck van Wyk	Naais Suid Farm	Owner		081 129 9511			elizabeth.meidekorner@gmail.com	BID and Phase1 SR sent
Frank Randall Coetzee	Nauams Farm	Owner		264813466535 / 814094348			frcoetzee@outlook.com	BID and Phase1 SR sent
Mrs Magriet van Wyk (Deceased recently)	Guab Farm	Owner					no email	
Mrs Elsa Jarman	Noois 1 Farm	Owner					no email	
Mr Jean Jarman	Noois 1 Farm	Owner		811292892			jjarmann@iway.na	BID and Phase1 SR sent/ personal comms
Mr. Vivian Lewanchek	Noois 2 Farm	Owner		811289761			vlewanschek@gmail.com	BID and Phase1 SR sent/ personal comms
Mrs Sarah Benade	Witkrans Farm	Owner		817984429				
Mr Eric Barth	Witkrans South Farm	Owner		812714548			rydox74.rb@gmail.com	



INTERESTED AND AFFECTED PARTY LIST: PROPOSED EXPLORATION ACTIVITIES ON EPL 6072 ECC APPLICATION.

Mr Ludwig Rittman	Witkrans Suid	Owner		814412071			no email	
Mr Klossie Rittman	Witkrans Suid	Owner					no email	
Mr Marthinus Benade	Kabiras 1 Farm	Owner		+264813085251				Personal comms.
Mrs Blommetjie van Wyk	Kabiras 3 Farm	Owner					no email	
Mrs Elsa Schoeman	Louwspoort Farm	Owner		+264851279608			Liz.Schu84@gmail.com	BID and Phase1 SR sent/ personal comms
Mr Aldan Cloete	Morgenroth Farm	Owner		812860123			aldan@iway.na	BID and Phase1 SR sent/ personal comms
Mr Albert Van Heerden	Neu Franken Farm	Owner						Could not obtain contact details
MINISTRY OF MINES AND ENERGY								
Mrs. Isabella Chirchir	Ministry of Mines and Energy	Mining Commissioner	061-284-8301		P/Bag 13297, Windhoek		Isabella.Chirchir@mme.gov.na	BID and Phase1 SR sent
Mr. Ewereth Muvangua	MME Geological Survey	Regional Geoscience :CHIEF GEOSCIENTIST					ewereth.muvangua@mme.gov.na	



INTERESTED AND AFFECTED PARTY LIST: PROPOSED EXPLORATION ACTIVITIES ON EPL 6072 ECC APPLICATION.

Mr. Nortin Titus	MME Geological Survey	- Division: Geophysics:CHIEF GEOSCIENTIST	061-284 8114		P/Bag 13297, Windhoek		Nortin.Titus@mme.gov.na	BID and Phase1 SR sent
MINISTRY OF ENVIRONMENT, FORESTRY AND TOURISM								
Theo Nghitila	Ministry of Environment & Tourism	Executive Director	061-284 2333		P/Bag 13346, Windhoek		ED.Secretary@mef.gov.na	BID and Phase1 SR sent
Timoteus Mufeti	Ministry of Environment & Tourism	Environmental Commissioner			P/Bag 13306, Windhoek		EC.Secretary@mef.gov.na	BID and Phase1 SR sent
Dr Caroline Garus-Oas	Ministry of Environment and Tourism	Deputy Environmental Commissioner: Development Planning, EIA Division Government Review of EIA	061-284 2710		P/Bag 13346, Windhoek		Caroline.Garoes-Oas@mef.gov.na	BID and Phase1 SR sent
Saima Angula	Ministry of Environment & Tourism	Director : Environmental Affairs	061-284 2700		P/Bag 13346, Windhoek		SaimaAngula@mef.gov.na	BID and Phase1 SR sent
NEIGHBOURING EPL HOLDERS								
Parabola Investments cc	EPL 8181							Active



INTERESTED AND AFFECTED PARTY LIST: PROPOSED EXPLORATION ACTIVITIES ON EPL 6072 ECC APPLICATION.

Victor Panduleni Kulula	EPL 7717							Inactive
-------------------------	----------	--	--	--	--	--	--	----------

REGIONAL AUTHORITIES

Hon Salomon April	Hardap Regional Council	Governor	063 245 800				daxlydia@gmail.com jherculus@gmail.com	BID and Phase1 SR sent
Mr. Julian W. Engelbrecht	Hardap Regional Council	Chief Regional Officer	061 388 700					
Laura Mcleod-Katjirua	Khomos Regional Council	Governor	061 388 700				pkatjaoha@Khomosog.gov.na	BID and Phase1 SR sent
Clemens Maswila	Khomos regional Council	Chief Regional Officer	061 388 700				cmaswila@khomasrc.gov.na	BID and Phase1 SR sent

REGISTERED INTERESTED AND AFFECTED PARTIES

Mr. and Mrs. van Tonder	Private capacity			264812763120	366, Aranos 22004			BID and Phase1 SR sent
Mr. lipinge Ndelimona	EIA Tracker	NEWS		+264814138822			lipinge Ndelimona <ndeliimonachox@gmail.com>	BID and Phase1 SR sent







From: lipinge Ndelimona <ndeliimonachox@gmail.com>
Sent: Friday, 16 February 2024 1:31 pm
To: projects@tesnam.com
Subject: Re: Environmental Clearance Certificate application-Proposed exploration activities on EPL 6072, overlapping the Khomas and Hardap Region, Namibia

Thank you

All well received

Regards

Ndelimona
EIA Tracker

From: projects@tesnam.com <projects@tesnam.com>
Sent: 16 February 2024 10:50 AM
To: 'lipinge Ndelimona' <ndeliimonachox@gmail.com>; info@tesnam.com <info@tesnam.com>
Subject: RE: Environmental Clearance Certificate application-Proposed exploration activities on EPL 6072, overlapping the Khomas and Hardap Region, Namibia

Dear Mr. lipinge

Kindly find attached the Background Information Document for EPL 6072 as requested.

Kind regards
Projects team

From: lipinge Ndelimona <ndeliimonachox@gmail.com>
Sent: Friday, 16 February 2024 7:33 am
To: info@tesnam.com; projects@tesnam.com
Subject: Environmental Clearance Certificate application-Proposed exploration activities on EPL 6072, overlapping the Khomas and Hardap Region, Namibia

Dear TLSP Enviro Services

I am hereby requesting to be registered as an I&AP for the EIA:
-Environmental Clearance Certificate application - exploration activities on EPL 6072, overlapping the Khomas and Hardap Region, Namibia, as issued in your public notice in the Namibian Sun newspaper on the 15th of February 2024

Would you also forward me the Background Information Document (BID)?

Regards

--

Ndelimona lipinge
EIA Tracking and Monitoring in Namibia (EIA Tracker)
Namibian Environment and Wildlife Society
Cell:+264814138822
<https://eia-tracker.org.na>

[Like us on Facebook](#)

The EIA Tracker Project keeps track and maps all EIAs countrywide to enhance public access to EIA information and promote transparency within the EIA sector. The information collected is only used for the public to access and the EIA Tracker has no intention and will not use these for financial or any other benefits.

From: lester@tesnam.com
Sent: Friday, 23 February 2024 10:09 am
To: 'Frank Coetzee'; 'info@tesnam.com'
Cc: 'wilhelm@jwbotesinc.co.za'; 'Sonica Coetzee'
Subject: RE: Commencement of Environmental Assessment for EPL 6072: Request for Stakeholder Input

Dear Frank

We acknowledge receipt of your e-mail, and thank you for taking the time to respond to it.

Please feel free to type out your input in a reply email on this chain and we will be sure to include it in our records for use in the assessment.

Kind Regards

Lester Harker
Senior Environmental Assessment Practitioner and Manager
Tel: +264 61 435 8298 / +264 81 602 2082
E-mail: lester@tesnam.com / info@tesnam.com
Web: tesnam.com



"Confidentiality Notice: This email and any attachments may contain confidential and/or privileged information. If you are not the intended recipient, please notify the sender immediately and delete the email and any attachments from your system. Any unauthorized use or disclosure of the information contained in this email is strictly prohibited."

From: Frank Coetzee <frcoetzee@outlook.com>
Sent: Thursday, 22 February 2024 2:51 pm
To: lester@tesnam.com; info@tesnam.com
Cc: wilhelm@jwbotesinc.co.za; Sonica Coetzee <sonica_coetzee@yahoo.com>
Subject: Re: Commencement of Environmental Assessment for EPL 6072: Request for Stakeholder Input

Dear Lester,

Thank you for reaching out. We are the owners of Farm Nauams and would like to confirm our interest in participating in the process. We are currently in Spain but depending on the timing we can participate in person or via video. I also confirm our availability and preference to communicate via email frcoetzee@outlook.com & sonica_coetzee@yahoo.com

We would like to take to opportunity to provide our comments and also see that we are required to complete a registration form. By when is that due and can we submit our comments in a different format, filling out a handwritten form is rather cumbersome.

Kind Regards,

Frank Coetzee
US: +1 (407) 484-1341
Spain: +34 (664) 034 029

From: lester@tesnam.com <lester@tesnam.com>
Sent: Monday, 19 February 2024 17:19
To: info@tesnam.com <info@tesnam.com>
Cc: wilhelm@jwbotesinc.co.za <wilhelm@jwbotesinc.co.za>
Subject: Commencement of Environmental Assessment for EPL 6072: Request for Stakeholder Input

Dear Stakeholders / I&AP's,

I hope this email finds you well.

We are writing to inform you of the commencement of the environmental assessment process for the Environmental Clearance Certificate (ECC) application for EPL 6072, as per the requirements outlined in the Namibian Environmental Management Act of 2007 and its regulations of 2012.

T.E.S, on behalf of the Proponent (Mr. Daniel Stefanus Malan) intends to engage with interested and affected parties throughout this assessment process through various means (face to face meetings, virtual meetings, letters, etc.). As stakeholders, either direct or indirect, your input is important in informing this assessment. Should you know of anyone that may benefit being consulted about the assessment for EPL 6072, please reach out to them as well.

Attached to this email, you will find the following documents for your reference:

1. Background Information Document
2. Stakeholder Letter with further guidance
3. Stakeholder Comments and Registration Form

These documents contain detailed information regarding the proposed project, its potential environmental impacts, and the consultation process. We encourage you to review these materials carefully and provide any feedback or comments you may have. Please make use of the attached Comments and Registration form to record your input and forward that back to us.

Your input will play an important role in informing the scope of the assessment, ensuring that all perspectives and concerns are duly considered.

Should you have any questions or require further clarification, please do not hesitate to contact us using the contact details provided in the signature below.

We appreciate your cooperation and participation in this important process.

Kind Regards

Lester Harker
Senior Environmental Assessment Practitioner and Manager
Tel: +264 61 435 8298 / +264 81 602 2082
E-mail: lester@tesnam.com / info@tesnam.com

Web: tesnam.com



"Confidentiality Notice: This email and any attachments may contain confidential and/or privileged information. If you are not the intended recipient, please notify the sender immediately and delete the email and any attachments from your system. Any unauthorized use or disclosure of the information contained in this email is strictly prohibited."

From: lester@tesnam.com
Sent: Tuesday, 27 February 2024 9:10 am
To: 'jjarmann@iway.na'
Cc: 'Genevieve Bock'; 'wilhelm@jwbotesinc.co.za'
Subject: RE: Environmental Clearance Certificate application: Proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions.

Dear Mr. Jarman

We acknowledge receipt of your letter and the concerns you have raised, and would like to assure you that your contribution will be considered as part of the ongoing assessment of the project's activities in a fair and objective manner.

We are currently in the scoping phase of the environmental assessment in addition to specialist studies being undertaken for example, the groundwater and archaeological and heritage specialist studies are currently underway. The biodiversity specialist study will be commissioned soon as well. All of these independent studies' findings will culminate in a single Scoping Report and Environmental Management Plan, and once the draft scoping report is completed, this will be circulated to all interested and affected parties on the Project for review and further consultation.

Should you have any further questions, please do not hesitate to contact us.

Kind Regards

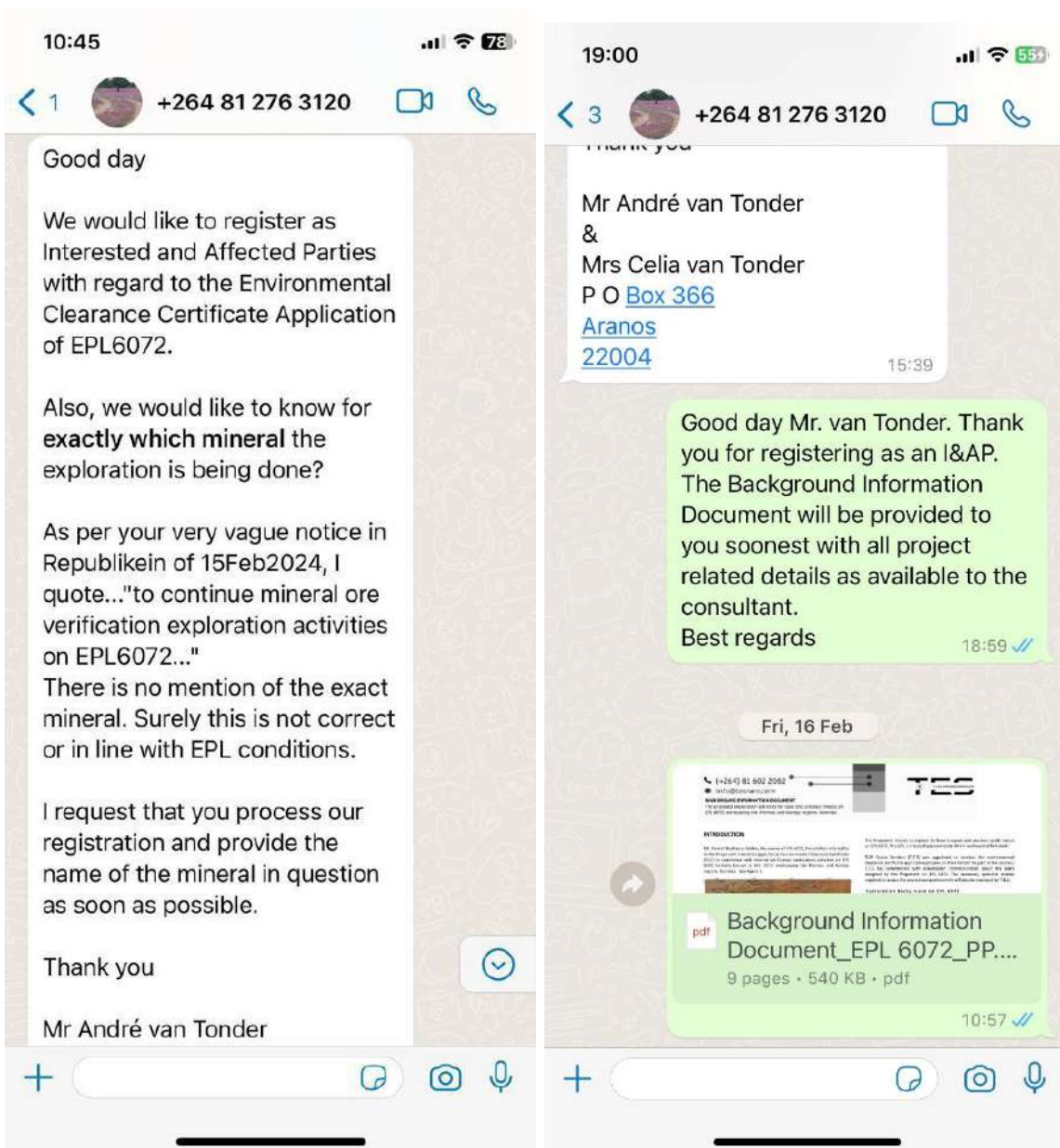
Lester Harker
Senior Environmental Assessment Practitioner and Manager
Tel: +264 61 435 8298 / +264 81 602 2082
E-mail: lester@tesnam.com / info@tesnam.com
Web: tesnam.com



"Confidentiality Notice: This email and any attachments may contain confidential and/or privileged information. If you are not the intended recipient, please notify the sender immediately and delete the email and any attachments from your system. Any unauthorized use or disclosure of the information contained in this email is strictly prohibited."

From: Genevieve Bock <info@tesnam.com>
Sent: Tuesday, 27 February 2024 7:53 am
To: lester@tesnam.com
Subject: FW:

From: JEAN JARMAN JARMAN <jjarmann@iway.na>
Sent: Tuesday, 27 February 2024 6:29 am
To: info@tesnam.com
Subject:



Good morning,

Kindly find attach letter for your attention

(+264) 81 602 2082

info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



INTRODUCTION

Mr. Daniel Stephanus Malan, the owner of EPL 6072, hereinafter referred to as the Proponent intends to apply for an Environmental Clearance Certificate (ECC) to commence with mineral verification exploration activities on EPL 6072 formerly known as EPL 3877, overlapping the Khomas and Hardap regions, Namibia. See Figure 1.

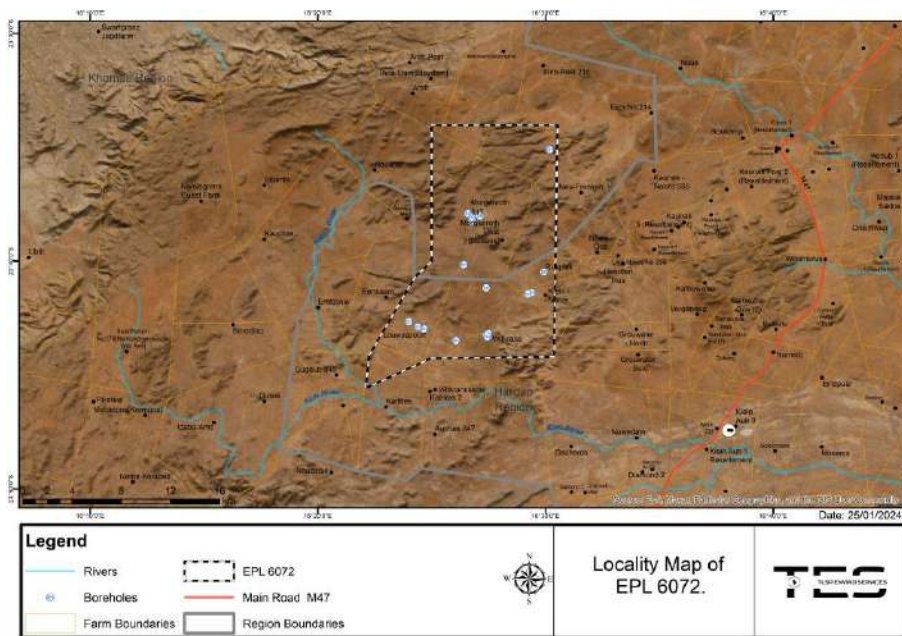


Figure 1 - The locality map of EPL 6072

The Proponent intends to explore for base (copper) and precious (gold) metals on EPL 6072. The EPL is situated approximately 94 km southwest of Rehoboth.


TLSP Enviro Services (T.E.S) was appointed to conduct the environmental clearance certificate application process on their behalf. As part of the process, T.E.S has commenced with stakeholder communication about the plans designed by the Proponent on EPL 6072. The necessary specialist studies required to assess the project comprehensively will also be managed by T.E.S.

Exploration Background on EPL 6072

The tenement (EPL 6072) overlaps part of the Kalahari Copper Belt, a copper province that extends from south-west Namibia to north-east Botswana and hosts several copper mines and important deposits such as Oamites, Klein Aub and Swartmodder. Historical reports from exploration on Farm Witkrans point to mineralizations of copper, gold, silver, lead, and barite which have been exploited on a small scale (GeoExperts, 2013). It is against this backdrop that the Proponent will continue professional exploration activities on the tenement to verify the mineral occurrences as contained in historical exploration reports developed for the tenement.

Exploration activities envisioned for the Project are:

- Soil sampling;
- Seismic surveys,
- Bulk sampling; and
- Drilling

 (+264) 81 602 2082

 info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



Access to EPL 6072

The EPL can be reached via the well-maintained gravel road C24 from Rehoboth toward the village of Kobos. From Kobos a 30 km stretch of farm road heads in a south westerly direction through a number of private farms toward the EPL. The Proponent intends to maintain the existing farm road toward the EPL for the benefit of the farming community in the area.

THE PROPOSED PROJECT PLAN

Exploration methodology proposed

In parallel to mapping, sampling, and surveying, trenching on already known mineralised outcrops is proposed to continue and bulk samples taken for ore treatment tests. Once the surficial extension of base metals mineralization is confirmed, a regime of shallow drilling should commence per target area (to be determined). It is proposed to use mainly R/C drilling to delineate shape and size of the exploration targets and to add a few diamond-drilled holes (core drilling) for mineral identification (GeoExperts, 2013).

Water and electricity requirements

Exploration activities require a supply of water which will either be brought to the site or abstracted from existing or new boreholes. The required volume of water needed will depend on the exploration program. Water needs in the initial phases of mineral exploration will be minimal, limited to human consumption and ablution facilities. If diamond drilling is required to test a target, then larger volumes will be required.


Should the Proponent find good groundwater during the exploration activity, a borehole may be used as a water source. Permission must be sought from the rightful landowners and the necessary abstraction permit to be attained from the Directorate of Water Affairs (DWA). Alternatively, if there are existing boreholes in the vicinity, they could be utilized with the landowner's permission and necessary permits / agreements in place. Only sustainable yields may be abstracted.

The Proponent will evaluate what electrical supplies are readily available to the Project. A diesel-powered generator may be used in remote locations for short-term work as needed for exploration equipment and lighting for the Project (drill site and camp site). All the necessary permits should be in place to store bulk diesel on site. Alternatively, the use of solar power could be an option to be considered at a later stage in a semi-permanent camp and long-term work.

Equipment requirements

Exploration equipment requirements include:

- A 4x4 double cab pick-up, to help with people transport, logistics and getting material to site.
- 6 x B40 dumpers;
- 2 x 966 front-end loaders;
- 3 x 40-ton excavators;
- 2 x TLB's.
- 1 x drill rig;
- 1 x D6 Dozer; and
- 4 x Dump trucks

 (+264) 81 602 2082

 info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



THE ENVIRONMENTAL ASSESSMENT PROCESS

The assessment is triggered by the following listed activities contained within the Regulations of the EMA of 2012.

3. 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,...and related activities.

1. Energy Generation, Transmission, and storage activities

- (a) The generation of electricity.

2. Waste management, treatment, handing and disposal activities

- (2.1) The construction of facilities for waste sites, treatment of waste and disposal of waste.
- (2.2) Any activity entailing a scheduled process referred to in the Atmospheric Pollution Prevention Ordinance, 1976

4. Forestry activities

- (4) The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorisation in terms of the Forest Act, 2001 (Act No. 12 of 2001) or any other law.

8. Water Resource developments

- (8.1) The abstraction of ground or surface water for industrial or commercial purposes.
- (8.5) The construction of dams, reservoirs, levees, and weirs.
- (8.6) The construction of industrial and domestic wastewater treatment plants and related pipeline systems.
- (8.8) The construction and other activities in water courses within floodlines.

9. Hazardous substance treatment, handling, and storage

- (9.2) Any process or activity which requires a permit, licence or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, licence or authorisation or which requires a new permit, licence or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste.

The scope of the assessment for the ECC application will focus on the EPL licence area, the immediate surroundings and the access road to determine the potential impacts the proposed exploration activities may have on the biophysical and social environments potentially affected by the Project. The assessment will therefore aim to develop suitable and implementable mitigation measures

(+264) 81 602 2082

info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



contained within an environmental management plan by the Proponent for the duration of the ECC licence period.

ENVIRONMENTAL BASELINE MONITORING

Ambient air quality monitoring

Baseline dust deposition monitoring will be commissioned to determine baseline ambient air quality levels pre-exploration and during exploration. The monthly results will be used to develop a long-term air quality trend of the Project’s activities on ambient air quality within and outside the EPL.

The three main purposes of a fallout dust monitoring programme are:

- To meet legislative requirements;
- To indicate long term trends; and
- To generate or maintain awareness of dust generating activities on site.

The evaluation criteria used is captured in Table 1 below.

Table 1 - Evaluation Criteria for dust fallout control

Restriction areas	Dust fall rate (D) mg/m2/day (30 day average)	Comment	Permitted frequency of exceeding dust fall rate
Residential	D < 600	Permissible for residential and light commercial	2 within a year, not sequential months

Non-Residential	600 < D < 1200	Permissible for heavy commercial and industrial	2 within a year, not sequential months
-----------------	----------------	---	--

The monthly average dust fallout concentrations for heavy commercial and industrial areas below 1200mg/m2 /day “are permissible”. For residential areas, and interchangeably used for rural areas the monthly average dust fallout concentrations not exceeding 600mg/m2 /day “are permissible”.

Groundwater resource monitoring

Once the aquifer dynamics are determined and the sustainable yields per borehole calculated in comparison to project requirements, the groundwater levels will be monitored on a monthly basis. Water quality sampling and testing campaigns will be run on a quarterly basis and the results recorded and submitted to the Directorate of Water Affairs.

Specialist studies required for the project include:

- Biodiversity study of the general area across the EPL
- Heritage and archaeological study
- Groundwater Study
- Traffic impact study

(+264) 81 602 2082

info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions, Namibia



THE ENVIRONMENTAL APPROVAL PROCESS

The assessment process as depicted in Figure 2 is an accurate representation of the pathway adopted by the government of the Republic of Namibia as contained in the Environmental Management Act (EMA) of 2007. The Act's implementation strategy is contained in the Regulations of the EMA of 2012.

POTENTIAL ENVIRONMENTAL IMPACTS ANTICIPATED

The following list of impacts is anticipated to be created by the project as its physical elements interact with natural aspects. These are:

- Groundwater and surface water impacts:
 - o Water quality (potential pollution to ground and surface water sources)
 - o Sustainable groundwater supply (sustainable yield exceedance)
- Biodiversity impacts
 - o Fauna disturbance (human-wildlife conflict)
 - o Flora disturbance and pollution
 - o Habitat fragmentation
 - o Soil pollution
- Air quality impacts
- Heritage and cultural impacts
- Socio-economic impacts
 - o Traffic impact on access roads
 - o Macro and micro economic impacts

Background Information Document - February 2024

www.tesnam.com

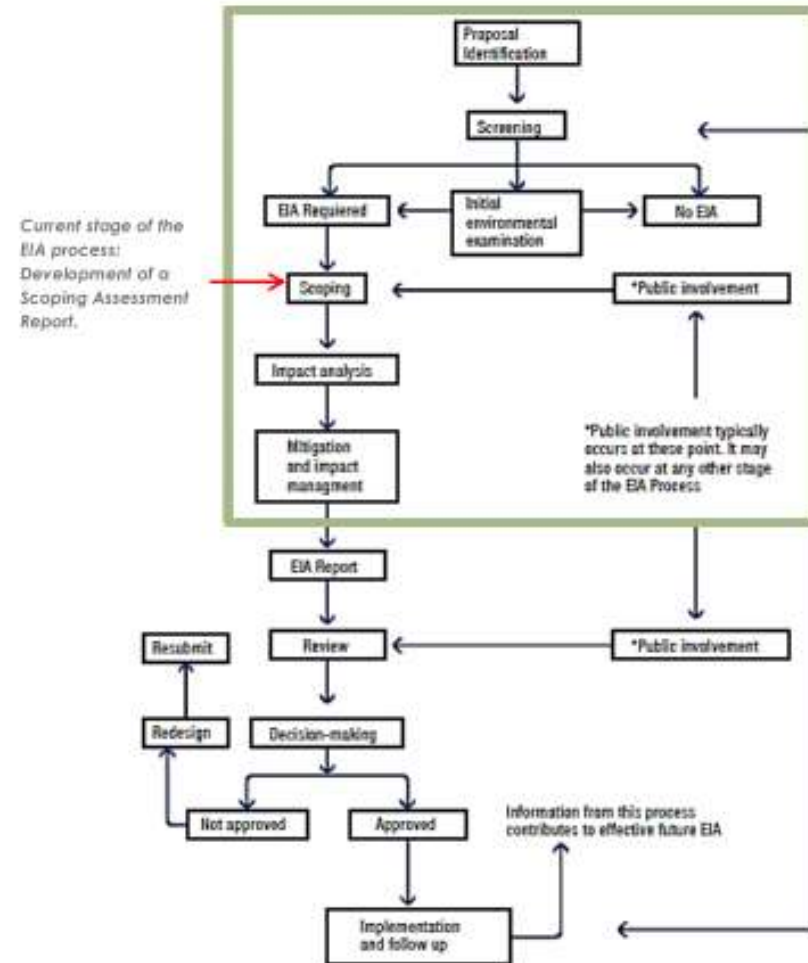


Figure 2 - The assessment process.

(+264) 81 602 2082

info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



These impacts are not exhaustive and may be added towards as the scope and consequent assessment process evolves. The full list of impacts will be detailed in the scoping report.

PUBLIC PARTICIPATION PROCESS

Public participation is the cornerstone of the Environmental Impact Assessment process. During the public participation process, I&AP's will be given the opportunity to comment on the findings of the reports, during the specified comment periods.

The public is notified through:

- Newspaper advertisement;
- Public site notices;
- Phone calls/WhatsApp / Text messages;
- Emails;
- Registered Post Mails;
- Face to Face public meetings, and
- Notification through government/regional and local organizations.

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

THE IMPACT ASSESSMENT METHODOLOGY

Identify the project's potential impacts:

- Conduct a site visit and review project plans to identify potential impacts.
- Consult with stakeholders, including community members, government agencies, and NGOs, to identify concerns and issues (where applicable).
- Review relevant regulations and guidelines to identify potential impacts.

Categorize impacts:

- Categorize impacts based on their environmental, social, and economic dimensions.
- Identify whether each impact is direct or indirect, and primary or secondary.
- Consider the scale of each impact, including the size, intensity, and duration.

Evaluate the significance of impacts:

- Assess the significance of each impact based on its overall score or ranking.
- Determine whether each impact is significant or not, based on a predetermined threshold or criteria.
- Consider the potential for cumulative impacts (where applicable), which may be significant, even if individual impacts are not.

(+264) 81 602 2082

info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



Mitigate impacts:

- Develop a plan to mitigate or reduce significant impacts, including measures to prevent or minimize negative impacts and enhance positive impacts.
- The Proponent (where applicable) should consider alternative project designs or locations that could reduce impacts.

Assess the significance of each impact using a standardized methodology:

- To ensure uniformity, the assessment of potential impacts will be addressed in a standard manner so that a wide range of impacts are comparable. Each impact identified will be assessed in terms of probability (likelihood of occurring), extent (spatial scale), intensity (severity) and duration (temporal scale). To enable a scientific approach to the determination of the impact significance (importance), a numerical value will be linked to each rating scale. The sum of the numerical values will define the significance. The following criteria will be applied to the impact assessment for the EIA/EMP.

Table 2 - Significance rating table scales definitions

Criteria	Description
Nature	Reviews the type of effect that the proposed activity will

Criteria	Description
	have on the relevant component of the environment and includes “what will be affected and how?”
Extent	Geographic area. Indicates whether the impact will be within a limited area (on site where construction is to take place); local (limited to within 25km of the area); regional (limited to ~200km radius); national (limited to the coastline of Namibia); or international (extending beyond Namibia’s borders).
Duration	Whether the impact will be temporary (during construction only), short term (1-5 years), medium term (5-10 years), long term (longer than 10 years, but will cease after operation) or permanent.
Intensity	Establishes whether the magnitude of the impact is destructive or innocuous and whether or not it exceeds set standards, and is described as none (no impact); low (where natural/ social environmental functions and processes are negligibly affected); medium (where the environment continues to function but in a noticeably modified manner); or high (where environmental functions and processes are altered such that they temporarily or permanently cease and/or exceed legal standards/requirements).
Probability	Considers the likelihood of the impact occurring and is

(+264) 81 602 2082

info@tesnam.com



BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia

Criteria	Description
	described as uncertain, improbable (low likelihood), probable (distinct possibility), highly probable (most likely) or definite (impact will occur regardless of prevention measures).
Significance	Significance is given before and after mitigation. Low if the impact will not have an influence on the decision or require to be significantly accommodated in the project design, Medium if the impact could have an influence on the environment which will require modification of the project design or alternative mitigation (the road realignment route can be used, but with deviations or mitigation). High where it could have a “no-go” implication regardless of any possible mitigation (an alternative route should be used).
Status of the impact	A statement of whether the impact is positive (a benefit), negative (a cost), or neutral. Indicate in each case who is likely to benefit and who is likely to bear the costs of each impact.
Degree of confidence in predictions	Is based on the availability of specialist knowledge and other information.

Mitigation measures:

There are three different types of controls (Figure 8) available to deal with the effects of residual impacts experienced on any project, and the aim is to lessen the significance value of these residual impacts to a lower and acceptable tier, in order to make them generally more manageable and environmentally friendly. Specifically designed mitigation measures per impact identified in this assessment are contained within the environmental management plan (EMP) that will be compiled.

Various Mitigation types employed in the assessment are illustrated in Figure 3 and described below.

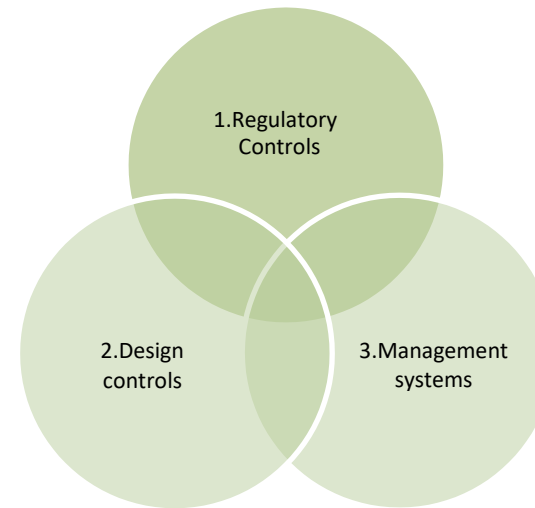


Figure 3 - Environmental control measures

☎ (+264) 81 602 2082

✉ info@tesnam.com

BACKGROUND INFORMATION DOCUMENT

The proposed exploration activities for base and precious metals on EPL 6072 overlapping the Khomas and Hardap regions. Namibia



1. Governmental or legal policies and agreements to control emissions, pollution, or natural resource usage.
2. Redesigning of project systems or products to minimise environmental impacts.
3. Ensuring environmental considerations are incorporated into all aspects of project management.

CONCLUSION

The environmental clearance certificate application process will be conducted using the legislative pathway as described in this document, whilst the assessment will be conducted using the methodology as explained within this report as well. The draft assessment report will be circulated to all registered stakeholders for input and review once completed, before final submission to the government.

Should you wish to register as an I&AP have any comments and input, kindly forward them to the below contact details:

E: info@tesnam.com / projects@tesnam.com

T: +264 81 602 2082 / 61 435 8298

TLSP ENVIRO SERVICES

REG NO: T298/2016

P.O. BOX 9526 ERUS

0814358298

EMAIL: INFO@TESNAM.COM

Form 1

REPUBLIC OF NAMIBIA
ENVIRONMENTAL MANAGEMENT ACT, 2007
(Section 32)

APPLICATION FOR ENVIRONMENTAL CLEARANCE CERTIFICATE

**A. PARTICULARS OF APPLICANT**

Name of Applicant **Mr. Daniel S. Malan**
 Address **No. 31 Gemsbok Avenue, Kamanjab**
 Telephone Number **N/A**
 Cell phone Number **+264 81 359 2777**
 Fax Number **N/A**
 E-mail Address **info@tesnam.com**
 Name of Contact Person **Mr. Lester Harker (T.E.S Consultant)**
 Telephone Number **+264 61 435 8298**
 Cell phone Number **081 602 2082**
 Fax Number **N/A**
 E-mail Address **lester@tesnam.com or info@tesnam.com**

PART B. SCOPE OF CURRENT ENVIRONMENTAL CLEARANCE CERTIFICATE

1. The environmental clearance certificate is for:
Environmental Clearance Certificate Application for the proposed exploration activities on EPL 6072, overlapping the Hardap and Khomas regions, Namibia
MINING AND QUARRYING ACTIVITIES:

- The construction of facilities for any process or activities which requires a license, right or other form of authorisation, and the renewal of a license, 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,...and related activities.

ENERGY GENERATION, TRANSMISSION, AND STORAGE ACTIVITIES

- The generation of electricity(a).

WASTE MANAGEMENT, TREATMENT, HANDLING AND DISPOSAL ACTIVITIES:

- The construction of facilities for waste sites, treatment of waste and disposal of waste (2.1)
- The import, processing, use and recycling, temporary storage, transit or export of waste (2.3);

FORESTRY ACTIVITIES

- The clearance of forest areas, deforestation, afforestation, timber harvesting or any other related activity that requires authorisation in terms of the Forest Act, 2001 (Act No. 12 of 2001) or any other law (4).

WATER RESOURCE DEVELOPMENTS

- The abstraction of ground or surface water for industrial or commercial purposes.
- Construction of dams, reservoirs, levees and weirs (8.5)
- Construction of industrial and domestic wastewater treatment plans and related pipeline systems (8.6);
- Construction and other activities in water courses within flood lines (8.8)

HAZARDOUS SUBSTANCE TREATMENT HANDLING AND STORAGE

- The manufacturing, storage, handling or processing of a hazardous substance defined in the Hazardous Substance Ordinance, 1974;
- Any process or activity which require a permit, license or other form of authorisation, or the modification of or changes to existing facilities for any process or activity which requires an amendment of an existing permit, license or authorisation or which requires a new permit, license or authorisation in terms of a law governing the generation or release of emissions, pollution, effluent or waste (9.2);

2. Details of the activity(s) covered by the environmental clearance certificate:

[Note: Please attach plans to show the location and scope of the designated activity(s), and use additional sheets if necessary] See attached Background information Document

Title of Activity: Proposed exploration activities on EPL 6072, Hardap and Khomas regions, Namibia

Nature of Activity: Base and Precious metals exploration

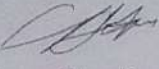
Location of Activity: Hardap and Khomas region (EPL overlaps both regions)

Scale and Scope of Activity:

The proposed exploration activities will cover seismic surveys, soil sampling, trenching bulk sampling and drilling on EPL 6072, which is 20000 hectares large and covers several private farms.

PART D DECLARATION BY APPLICANT

I hereby certify that the particulars given above are correct and true to the best of my knowledge and belief. In understand the environmental clearance certificate may be suspended, amended or cancelled if any information given above is false, misleading, wrong or incomplete.

	LESTER HARKER	DIRECTOR and EAP (T.E.S)
Signature of Applicant	Full Name in Block Letters	Position
On behalf of: SADCOR Mining (Pty)Ltd		Date: 04 February 2024



BIOGRAPHICAL RECORD

Name: Celester Luzaan Harker **Nationality:** Namibian
Profession: Environmental Consultant **Year of Birth:** 1988

Career Summary

I am a trained environmental specialist active in the environmental consulting industry for more than 10 years in various positions in various professional organisations. I founded T.E.S. in 2015 which operates in the Agricultural, Land-use Development, Construction, and Mining Industries locally and within Africa. We provide project screening, scoping, impact assessments and public consultation, environmental management plans, operational permitting and site environmental monitoring and evaluation services to our clients in these industries.

As a consulting company we also provide environmental screening and scoping input into pre-feasibility and bankable feasibility studies as well in partnership with a pool of independent professional associates. One such an example of work of this nature was the collaboration with The British Government's Department for International Development (DFID) on the bankable feasibility study for the Rehoboth (Namibia) Wastewater Treatment and Reuse Project for funding purposes.

In 2018, T.E.S collaborated with the Kareeboo Consulting Group to conduct business strategic plans development, coaching and training as well as multi-facetted project HR work for corporate clients, while still maintaining the environmental management portfolio.

Key Skills/Recent Achievements with a project-specific example

Environmental Awareness: Conducted an Environmental Risk Assessment with an international team for the Akoga Company in Equatorial Guinea and approved by the World Bank in 2016 to fund the expansion of the mine. This project required a clear understanding of ecosystem functioning and the intricate interrelationship of the ecosystems with project components, including the social environment.

General Project Management and Environmental Impact Assessments: As an environmental project manager I have learnt to streamline project components (direct/active and contingencies) with timelines to achieve a set of deliverables. But more importantly is the vision, mission and objective of the project that must be made clear and understandable to all involved, both within the project team and the I&AP's (public consultation). This is a skill necessary for all projects that I embark upon.

Environmental inspections and audits: Managed and conducted the environmental audits on the construction and renovation activities of 21 public schools across Namibia under the ETQIIP Project administered by the Ministry of Education, Arts and Culture and funded by the African Development Bank. Recently appointed as the ECO for the Hyphen Hydrogen Energy meteorological masts construction project, Tsau //Khaeb National Park, Karas Region.

Researcher: By utilising a concise impact identification methodology, I have successfully completed an Environmental Impact Assessment for a new diamond mining operation (Hallie Investment No14) in the south of Namibia in 2017. This project showed the potential for non-marine diamond mining in the Namibian context and the first of its kind to be approved under the Namibian Environmental



Management Act.

Career history

May 2023 – To date **TLSP ENVIRO SERVICES (TES)**
Environmental Assessment Practitioner

On-site environmental air quality monitoring, site EMP compliance inspections, Hydrocensus, as well as environmental permitting – DMD (Pty) Ltd – Ongoing.

Environmental management consulting services provided to Hashtag Properties related to the full suite of necessary environmental permitting requirements for estate development projects on private farmland.

Environmental Clearance Certificate renewals conducted for a mining licence (ML) and mining claims, Kunene and Karas regions: DMD (Pty) Ltd and Mr. and Mrs. Beukes (MC's holders, respectively).

Ongoing public participation for KoBold Metals Namibia (Pty) Ltd for the ECC application for EPL 9055, Kunene Region in partnership with Alliance Environmental Consultancy CC (Ms. Lovisa Amwele).

On-site Environmental Control Officer portfolio and ministerial reporting conducted for Hyphen Hydrogen Energy (Pty) Ltd for the construction of ten meteorological masts in the Tsau //Khaeb National Park, Karas Region.

June 2020 – March 2023 **ENVIRONMENTAL COMPLIANCE CONSULTANCY (ECC)**
Environmental Assessment Practitioner

Within this role I led the ESIA process for a number of projects during my tenure at ECC, of which the bulk of these projects were for exploration and mining companies (i.e. Votorantim Metals Namibia, Kuiseb Copper Company, QKR Navachab Gold Mine TSF 3, and Uis Tin Mine amongst others). I conducted the social impact assessment for the Osino Resources Gold Mine Project. A parallel and secondary work stream involved the monthly construction monitoring and audit of the railway construction project from Walvis Bay to Kranzberg funded by the African Development Bank (2020 – 2022) and led by Bigen Namibia. During my tenure at ECC, I was also exposed to linear infrastructure EIA projects for example, the Okanguati water pipeline project EIA update and the proposed transportation of zinc sulphide concentrate from the Oranjemund border to the Namzinc refinery, Karas Region.

April 2018 – 2019 **KAREEBOO CONSULTING GROUP**
Senior Associate Consultant

I was responsible for business viability analysis, operations management and multi-sectoral project management.

January 2017 – March 2018 **WOOLWORTHS NAMIBIA (PTY) LTD WINDHOEK**
Operations Manager

Responsible for managing business/ branch assets, expenses (budget control), People/staff, training and development of staff (IPM's, succession planning, etc.), managing logistics and overall maintenance and customer service, legal compliance in line with the Occupational Health and Safety Act.



I assisted the Woolworths in-country operations management department to implement and upkeep operational compliance standards (OHASA) and policies across all stores in Namibia.

I assisted with the successful execution of the operational plan to open up a new Woolworths store in the Dunes Mall (Walvis Bay).

**January 2017 – March 2018 T.E.S
Founder and Senior Environmental Assessment Practitioner**

Managing company assets; financial management; risk and impact assessments and scientific research report compilation; project management; reviews and auditing, and legal compliance.

Projects Completed and/or Active

Client: Somika-Sarl Cobalt and Copper Mine, Lubumbashi District, DRC (Cobalt & Copper Mining)

Conducted the site evaluation of the mine and compiled the environmental risk assessment and audit documentation for its operations as part of an international delegation managed by Falcon Resources (Pty) Ltd.

Year: 2018

Client: TRG WITKRANS MINING COMPANY (Copper & Gold Mining)

The continuous updating of the project's EMP which is necessitated by the phased expansion of their exploration activities.

Year: 2018 ongoing.

Client: MERTENS MINING COMPANY (Copper Mining)

The updating of the existing environmental scoping assessment and EMP reports to match their newest operations on site.

Year 2018 and 2020.

Client: HALLIE INVESTMENT NUMBER FOURTEEN (Diamond Mining)

Conducted the environmental scoping assessment process and developed the associated scoping report, plus impact assessment and the EMP reports for an inland diamond mining operation, Karas Region, Namibia.

Year: 2017

Client: DAUREMAS MINERAL DEVELOPMENT (PTY) LTD (Tin, tantalum and lithium Mining)

ESIA update and finalisation of the environmental application process for the proposed mining activities for the Daure Mine, Kunene Region.

Year: 2016.

Client: TRG WITKRANS MINING COMPANY (Copper & Gold Mining)

Conducted the environmental scoping assessment process and developed the associated scoping report, plus impact assessment and the EMP reports for the TRG Witkrans Mining Company.

Year: 2015



June 2012 – August 2015 ENVIRO DYNAMICS
Junior Environmental Risk Assessment Practitioner

Projects Completed

Client: DAUREMAS MINERAL DEVELOPMENT (PTY) LTD

ESIA conducted for the proposed mining activities for the Daure Mine, Kunene Region (80% completed before retrenchment).

Year: 2015.

Client: TOP STONES INDUSTRIAL AND MINING CORPORATION CC

I conducted the environmental impact assessment process and the application for environmental clearance for the Troye Mine outside Okahandja, Otjozondjupa Region, Namibia.

Year: 2014

Client: THL ZINC LTD

Environmental assessment and EMP upgrade for THL Zinc EPL 4608, Karas Region.

Year: 2014.

Client: EPANGELO MINING COMPANY (PTY) LTD

EIA for the Proposed Exploration Activities on EPLs 4782 and 5028, Otjozondjupa and Oshikoto regions.

Year: 2014.

Client: AFRICAN NICKEL NAMIBIA (PTY) LTD

Environmental Scoping Report and EMP for exploration activities on EPL's 3300, 3301 and 436.1

Year: 2013.

Client: ARGOSSY MINERALS (PTY) LTD

Environmental Scoping Assessment and EMP for exploration activities (including drilling) on EPL 4335, Omaruru District, Erongo Region.

Year: 2013.

Client: GECKO MINING

Environmental Impact Assessment conducted for the Gecko Otjivalunda Salt Mine.

Year: 2013.

Qualifications

Diploma in Environment, Health, and Safety Management (currently busy with) (Uniathena)
BA Degree (Development and Environment) (attended) (Stellenbosch University)

Languages



	<i>Spoken</i>	<i>Reading</i>	<i>Written</i>
English	Excellent (Fluent)	Excellent (Fluent)	Excellent (Fluent)
Afrikaans	Excellent (Fluent)	Excellent (Fluent)	Excellent (Fluent)